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

ECUADOR

PROJECT PAPER

INTEGRATED RURAL DEVELOPMENT (AGRICULTURE)

AID/LAC/P-056

**Project Number:518-0012
Loan Number:518-T-038**

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AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET		1. TRANSACTION CODE <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-right: 10px;">A</div> A = ADD C = CHANGE D = DELETE	PP 2. DOCUMENT CODE 3
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10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$1 - S/.25)						
A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL	530	4,670	5,200	2,486	9,314	11,800
(GRANT)	180	20	200	1,800	200	2,000
(LOAN)	350	4,650	5,000	686	9,114	9,800
OTHER U.S. 1.						
2.						
HOST COUNTRY		2,500	2,500		12,500	12,500
OTHER DONOR(S)						
TOTALS	530	7,170	7,700	2,486	21,814	24,300

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	254	230	220	200	5,000	500	4,800	500	
(2)									
(3)									
(4)									
TOTALS				200	5,000	500	4,800	500	

A. APPROPRIATION	N. 4TH FY 83		O. 5TH FY 84		LIFE OF PROJECT		12. IN-DEPTH EVAL. SCHEDULED
	Q. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	
(1) FN	400		400		2,000	9,800	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> MM YY 10 81 </div>
(2)							
(3)							
(4)							
TOTALS	400		400		2,000	9,800	

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

1

 1 = NO
2 = YES

14. ORIGINATING OFFICE CLEARANCE SIGNATURE <i>John A. Sanbrailo</i> TITLE John A. Sanbrailo AID Representative, USAID/Ecuador		15. DATE DOCUMENT RECEIVED IN AID W. OR FOR AID W. DOCUMENTS, DATE OF DISTRIBUTION <div style="display: flex; justify-content: space-between;"> <div> DATE SIGNED <div style="border: 1px solid black; padding: 2px; display: inline-block;"> MM DD YY 06 27 80 </div> </div> <div> <div style="border: 1px solid black; padding: 2px; display: inline-block;"> MM DD YY 10 81 </div> </div> </div>
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PROJECT AUTHORIZATION

Name of Country: Ecuador
Name of Project: Integrated Rural Development
Number of Project: 518-0012
Number of Loan: 518-T-038

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Integrated Rural Development project for Ecuador (the "Cooperating Country") involving planned obligations of not to exceed Nine Million Eight Hundred Thousand United States Dollars (\$9,800,000) in loan funds ("Loan") and Two Million United States Dollars (\$2,000,000) in grant funds ("Grant") 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 currency and local currency costs for the project.

2. The project ("Project") consists of assisting the Government of Ecuador (the GOE) make operational its new integrated rural development (IRD) mechanism through (a) technical assistance and related activities for the GOE's new Rural Development Secretariat (RDS), (b) financial and technical assistance for implementing two IRD projects located in the central Sierra (the Salcedo project and the Quimiag-Penipe project), and (c) assistance for the planning of future IRD projects.

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. **Interest Rate and Terms of Repayment (Loan)**

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

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

Goods and services, except for ocean shipping, financed by A.I.D. under the Loan shall have their source and origin in the Cooperating Country or in countries included in A.I.D. Geographic Code 941, except as A.I.D. may otherwise agree

in writing. Ocean shipping financed by A.I.D. under the Loan shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States and the Cooperating Country.

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

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

d. 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, furnish to A.I.D. in form and substance satisfactory to A.I.D. evidence that:

- (i) the RDS has been legally established; and
- (ii) an Executive Secretary has been appointed for the RDS and is working in that capacity.

e. Conditions Precedent to Disbursement for other than Technical Assistance, Studies and Related Items

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, to finance other than technical assistance, studies and related items for the RDS, the GOE shall, except as A.I.D. may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D. evidence that:

- (i) operating procedures for the RDS have been established, including appropriate regulations and operating manuals;
- (ii) the IRD Fund has been established, including accounting and operating procedures; and
- (iii) the RDS has formulated an evaluation plan for the IRD program as a whole.

f. Condition Precedent to Disbursement for Salcedo Project or Quimiag-Penipe Project

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, for the Salcedo Project or the Quimiag-Penipe Project (other than for technical assistance and studies), the GOE shall, except as A.I.D. may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D. an implementation plan for such project, which shall include:

(i) agreements with INIAP (Agricultural Research National Institute), INERHI (Institute of Hydraulic Resources), IERAC (Institute for Agrarian Reform and Colonization), BNF (National Development Bank), MAG (Ministry of Agriculture and Livestock) and all other participating institutions, each such agreement to include detailed technical plans of all activities to be undertaken within the project. The agreement with INERHI shall include the final plans and specifications for all canals to be constructed, including secondary and distribution canals, and identification of the farms to be irrigated, including the size of each parcel;

(ii) a complete operating plan for the first year of the project, including proposed activities, objectives, budget and methods for monitoring environmental aspects of the proposed activities; and

(iii) an evaluation plan for the project, including baseline data or detailed arrangements for the collection of the baseline data.

g. Condition Precedent to Disbursement for IRD Planning Activities

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, for planning of future IRD projects, the GOE shall, except as A.I.D. may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D. a copy of the agreement between the RDS and the appropriate local development organization for such planning activity, which agreement shall include a detailed description of the proposed study and a budget therefor.

h. Covenant

The GOE shall covenant that, unless A.I.D. otherwise agrees in writing, it will cause INERHI, consistent with GOE legislation, to establish and enforce water rate charges in the IRD project areas which will be adequate to recover the investment and operating costs of irrigation facilities.

i. Waiver

A.I.D. nationality requirements are hereby waived in order to permit Grant financing of technical assistance advisors from Latin American countries, in addition to the Cooperating Country, in an amount not to exceed \$1.0 million.


Administrator


date

Clearances:

GC/LAC:JLKessler:JK/6 date 8/6

AAA/LAC:EWCoy: huc date 8/12
AA/PPC:AShakow: date 8/14
GC/NLHolmes: date 8/14

GC/LAC:GMWim 7/11/80-00109

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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 Roldós Government was 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 Roldós (39 years old) and Vice President Hurtado (40 years old) represent the emergence within Ecuadorean society of a new group of young, democratically oriented technocrats who are strongly committed to overcoming Ecuador's historic development problems. As President Roldós 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 fragile. After nine years of dictatorial rule, the country has been passing through a difficult adjustment period. Disagreements between the Ecuadorean executive and legislative branches of government have significantly slowed down major new development initiatives and created frustrations with the new democratic Government. These frustrations have grown because expectations, particularly among the poor, are so high. Also, the GOE must 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 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) to plan, coordinate, and prioritize GOE development activities. Third, it has developed major new programs of low-cost housing for the urban poor of Guayaquil and Quito. Fourth, as part of an administrative reform program, it has begun a public sector management training program. Fifth, it is in the process of initiating new projects for small industry development, rural electrification, secondary cities development, rural road and school construction, school feeding, and adult literacy. Sixth, it has designed a new mechanism for undertaking integrated rural development programs that can impact more ef-

fectively on the multiple problems of the rural poor. And seventh, it has concentrated a large effort on preparing, and obtaining a popular consensus on, a Five Year Development Plan and complementary sector analytic documents. While the implementation of some of these programs has been delayed by the conflict between the GOE Congress and the President, the executive branch has attempted to move forward on them as much as possible.

The GOE's new National Development Plan is perhaps the best indication of the intentions of the Ecuadorean executive branch. Working through CONADE, headed by Vice President Hurtado, the new Administration has translated its broad campaign promises (the "21 Puntos Programáticos") into a detailed Development Plan that lays out for 1980-84 ambitious 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 Roldós approved the Plan by executive decree in March 1980.

The GOE'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 its current political divisions that have virtually 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 Roldós Government in translating its socio-economic policies into projects that address Ecuador's most important development problems.

For the past year, President Roldós, Vice President Hurtado, GOE Ministers, and other high level officials have expressed continuously the high priority that the new democratic administration places on integrated rural development (IRD). The GOE's National Development Plan formalizes this priority and indicates that IRD projects will be a major instrument for translating GOE policy into actions that better serve the needs of the Ecuadorean rural poor. Therefore, this AID Project, which will assist Ecuador make operational its new IRD mechanism, is considered by the GOE, USAID, and the Country Team as the most important activity in the renewed AID program in Ecuador.

B. Background and Conceptual Framework

Projects for promoting expanded agricultural production and improved rural life have historically received U.S. development assistance in Ecuador as well as in other LDCs. In the 1940s and 1950s small scale U.S. technical assistance efforts, through the Cooperative Servicios and the Point IV Program, successfully initiated some of Ecuador's first modern agricultural development agencies and facilitated the introduction of new production technologies. Separate U.S. programs (Servicios) for health and education also began some of Ecuador's first rural health and rural education programs. These modest institution-building, training, and technology transfer efforts were seldom implemented in the same geographic areas or directed to the same local groups. While a number of these projects had dramatic impacts on Ecuadorean agricultural production and institutional arrangements, few mechanisms were developed for dealing with country's more complex rural poverty problems.

Rural poverty alleviation received even less AID emphasis during most of the 1960s. USG development policy shifted away from its historic concern with agriculture, health, and education. As in many LAC countries, the Alliance for Progress in Ecuador concentrated on import-substitution, industrialization, major infrastructure and housing development, public administration improvements, and budget support that would promote macro-economic growth. What minor emphasis was placed on agriculture and rural development was mainly directed to expanding the production of agricultural commodities that could support urban-industrial development. It was assumed that economic growth would automatically take care of the poverty problem.

In reaction to the worsening income distribution pattern in Ecuador and the failures of the "trickle down" development approach, USAID initiated in the late 1960s and early 1970s a new style development program that focused directly on the problems of rural poverty. Projects were implemented for campesino leadership training, small farmer cooperative development, nonformal rural education, small business development, rural electrification, and promotion of campesino enterprises through credit, technical assistance, and land sale guaranties. Emphasis was placed on facilitating campesino participation in development programs, promoting community organizations, and directing resources to specific target groups, although few of these AID projects were interrelated or even concentrated in the same geographic areas. Before many of these projects could be fully tested and institutionalized, foreign policy issues contributed to the early termination of this program. However, well ahead of the New Directions legislation, USAID had begun to reorient its program to better meet the needs of the Ecuadorean rural poor.

For most of the 1970s, the phase-out of the AID program in Ecuador effectively eliminated the application of New Directions programming for the country. Nevertheless, a number of important lessons were learned in

designing and implementing these earlier rural poverty projects. These lessons, as follows, have been utilized in the development of the renewed AID program and in the design of the Project proposed herein:

- First, the rural poverty efforts initiated in the late 1960s and early 1970s generally encountered implementation problems because they lacked high level GOE support and/or because of GOE institutional weaknesses.
- Second, most AID projects were single-faceted interventions for dealing with rural poverty. Individual projects were usually unconnected and implemented in different parts of the country. This tended to fragment and disperse overall AID efforts in dealing with rural poverty problems.
- And third, though follow-up evaluations of these AID projects indicated that they had significant impacts on addressing problems confronting rural poor target groups, each project left gaps and seemed to overlook significant complementary areas that later reduced the overall effectiveness of the project.* In retrospect, project impacts might have been greater if individual project interventions had been interrelated and concentrated in the same geographic areas as was later done extensively in New Direction programs in other LAC countries.

A similar pattern took place with the other donors. The early efforts of the IDB and IBRD (1965-75) were directed to financing separate rural and agricultural development projects (e.g., individual loans usually unconnected and dispersed throughout the country, for agricultural credit, irrigation, livestock, seed processing, animal health, agroindustry, and research support). However, GOE assessments of these projects determined that this subsectoral focus was not having the intended impacts, particularly on rural poverty problems. (This determination was perhaps sparked somewhat by the earlier AID efforts, which contributed to creating a greater consciousness within the GOE on the need to better address the country's rural poverty problems). Starting in the mid-to-late 1970s, both IDB and IBRD began directing increased financing to area-specific, integrated rural development projects. During the same period, IICA and FAO also began directing more of their efforts to IRD projects.

* As examples, the nonformal rural education project did an excellent job of training and motivating campesinos to define their problems; but once the problems were defined, GOE institutions were often not in a position to deliver resources or services. The small farmer cooperative projects gave insufficient attention to management training and expertise. And the Campesino Enterprises Project required complementary interventions in marketing, technology development, and rural health and education that were not included in the original design.

At present, there is a consensus among the GOE and the international agencies on the best approach for dealing with rural development in Ecuador in the 1980s. All seem to recognize that if significant progress is to be made in breaking up Ecuador's century-old rural poverty conditions, well-coordinated and multidimensional interventions (in agriculture, health, potable water, nutrition, education, off-farm employment, and other sectors) must be planned and delivered on an area-specific basis. The question, however, is how best to organize and implement such a strategy in Ecuador.

To date, most IRD projects have merely combined together traditional credit and infrastructure components. The form and packaging of projects has changed, but the substance has remained basically unchanged. Many of these projects have had extremely high costs per beneficiary. Each international agency has implemented its IRD projects through a different institutional system. There has been little concern with institutional development and almost no target group participation in the IRD planning and implementation process. There has been inadequate appreciation given to the need to develop lower cost IRD models and delivery systems that can facilitate widespread replication. If the GOE is to use the IRD approach as an instrument for reducing the country's serious rural poverty problems, then it is vital that these concerns and gaps be addressed.

The Project proposed herein will support the emergence within the GOE of a more effective institutional framework for planning and implementing IRD projects. AID funding has been designed to encourage institutional development and learning at the national, regional, and local levels. Each level will be tied into a total system extending from local institutions where target group needs are articulated, to national level coordinating and funding mechanisms.

Through the financing of the GOE's priority IRD projects, emphasis will be placed on planning and implementing low cost IRD interventions, encouraging community participation, and testing new delivery and management systems. The implementation of these IRD projects will provide realistic examples of the types of institutional, technical, and human resource problems that must be addressed by the GOE in different geographic and cultural regions. Each of these projects can stand on its own and will attack important rural poverty problems in particular regions of the country. However, the experience gained through these projects will be used in the total institution-building process, with the result that developing a better IRD mechanism is based not only on abstract planning concepts but on real experience. Thus, the planning and implementation of a number of high priority IRD projects are integral parts of the institution-building process being assisted by the AID Project.

C. Project Description

The purpose of the proposed Project is to assist the GOE make operational its new integrated rural development mechanism. This purpose will be accomplished through GOE/AID financing of the following:

- Technical assistance for the GOE's new Rural Development Secretariat (RDS);
- Financial and technical assistance for implementing two IRD projects located in the central Sierra (the Salcedo area of Cotopaxi Province and the Quimiag-Penipe area of Chimborazo Province);
- The planning of one IRD project in Manabí, a coastal province, and support in IRD planning and coordination for existing and newly created regional development authorities.

The IRD mechanism that will be developed through this Project can be conceptualized as a supply and demand model. To better supply resources and services to the target group, the mechanism recognizes the need for adequate funding and greater coherence in the planning and implementation of IRD projects. It also recognizes the importance of coordinating the delivery of resources at the national, regional, and local levels and of developing more cost-effective delivery systems.

On the demand side, it is recognized that the rural poor must be organized so that they can articulate what resources and services they most need and so that they can participate in their delivery. To these ends, local target group liaison organizations will be strengthened, and linkages will be developed between these local level organizations and the agencies responsible for the provision of resources and services. Through these local organizations and through contact agents selected whenever possible from local communities, the target group will participate in both the planning and delivery of IRD resources and services.

To accomplish the above, the GOE will establish a Rural Development Secretariat (RDS) within the Presidency (see Issue 2 below). The RDS will plan, coordinate, monitor, and evaluate IRD projects and will administer a fund for financing IRD field activities. Actual field activities at the target group level (e.g., provision of extension and training services, construction of irrigation systems, granting of credits) will be provided through existing implementing agencies such as the Ministry of Agriculture (MAG), the Water Resources Institute (INERHI), and the National Development Bank (BNF). Local level coordination will be provided by a Project Director assigned by the RDS to each IRD project. Local level coordination and planning support will also be provided by regional development authorities. Assistance under the Project will be provided to strengthen such regional development authorities, or create them where they do not now exist.

Each level of this IRD mechanism will be tied together by operating agreements. The implementing agencies and regional development authorities will have agreements with the RDS, while the individual beneficiary communities and their local organizations will have agreements with the respective IRD project office. In each case, the agreement will spell out the responsibilities and obligations of each party, and a timetable of what is expected. The RDS will ensure that the total system operates effectively and efficiently. AID-financed technical advisors will operate at all levels of the mechanism to assist RDS in carrying out its functions.

To make the above system operational, two field level IRD projects will be implemented and one will be planned. In the two IRD projects to be implemented, the Project proposed herein will concentrate mainly on interventions related to agriculture. AID and counterpart financing will be provided for irrigation infrastructure, production and investment credit, extension services, input supply services and marketing assistance, land titling, campesino legal aid, and community organization. Adaptive research will be provided under AID's Rural Technology Transfer (Title XII) Project, while campesino training will be provided under an AID centrally funded Rural Nonformal Education Project. These projects are both scheduled to begin at about the same time as the proposed Project. Other interventions, not specifically agricultural but integrally related, will be carried out in the general geographic areas over the next several years under other AID projects. These interventions will be in rural health, potable water, nutrition, environmental sanitation, forestry, soil conservation, skills training, and off-farm employment. Issue No. 3 below discusses the reasons why project interventions have been time-phased over several years.

The areas selected for GOE/AID financing of integrated rural development activities have some of the most serious rural poverty conditions in Ecuador. The Salcedo and Quimiag-Penipe IRD projects are considered two of the highest priority projects in Ecuador, and both are included in the GOE's National Development Plan for implementation in 1980-84. Within these two IRD projects, approximately 8,000 families (some 44,000 rural poor) will be direct beneficiaries. The IRD planning project in Manabí will benefit a similar number of beneficiaries.

There are significant similarities and major differences between the Salcedo and Quimiag-Penipe IRD projects. As to similarities, both projects are based on intensifying agricultural production through the gradual introduction of new crops and technological improvements that require irrigation and other modern inputs. All major studies support this approach to small farmer agricultural development in the Ecuadorean Sierra. Yet, the two projects represent a different set of rural poverty conditions typical of the Sierra. First, the Salcedo area is a mixture of Indian -mestizo while Quimiag-Penipe is predominantly mestizo. Second,

the target group of Quimiag-Penipe is more occupied in farming for basic income generation whereas the Salcedo population is engaged in significant off-farm activities. And third, each project represents a different type of irrigation model. Since the Sierra contains the largest portion of Ecuadorean rural poverty, the RDS must be able to deal with these different situations if IRD projects are to be replicated in major rural poverty areas.

The planning of an IRD project in the coastal province of Manabí will give the RDS experience in dealing with rural poverty conditions in a third and completely different region. Manabí is one of the poorest coastal regions of Ecuador, with a large rural population suffering from periodic droughts. AID-financed technical assistance will institutionalize within the RDS a participatory planning methodology.

Thus, each of the three IRD projects will provide the RDS with a different learning experience, in regions with diverse cultural, social, and economic conditions. Experience with different IRD projects in typical Ecuadorean rural poverty regions is vital for achieving the institutional development objectives outlined above.

D. Implementation Agencies and Summary Financial Plan

The GOE's new Rural Development Secretariat will be the overall planning, coordinating, financing, and evaluating unit for the Project. It will administer an Integrated Rural Development Fund that will receive AID and GOE counterpart funding. It will also supervise the implementation of the overall project to ensure adequate coordination and funding at all levels. While the RDS will appoint a Project Director for each IRD project, actual field activities will be implemented through GOE agencies through written agreements with the RDS.

The following agencies will participate in the program under RDS supervision:

1. Ministry of Agriculture and Livestock (MAG)

MAG will provide the local level organizational structure for coordinating all project inputs. For each IRD project, MAG will provide most of the extension agents and local level technical personnel required for project implementation. MAG extension personnel will work with the target group mainly through paraprofessional contact agents and local level community organizations.

2. Ecuadorean Water Resources Institute (INERHI)

INERHI will construct and/or supervise all irrigation facilities required for each IRD project area. Technical assistance will be

provided to assist INERHI, in collaboration with MAG, effectively develop and disseminate on-farm water management practices for small-scale producers.

3. National Development Bank (BNF)

BNF will administer the various types of agricultural credit required for the IRD project areas. Through its branch offices, it will plan and deliver credit to the target group in close coordination with other IRD project activities.

4. Ecuadorean Institute for Agricultural and Livestock Research (INIAP)

INIAP will develop the technological packages required for each project area through financing from AID's Rural Technology Transfer (Title XII) Project. It will also undertake on-farm demonstrations and field days in coordination with other IRD project activities to demonstrate and disseminate new production technologies.

5. Ecuadorean Land Reform and Colonization Agency (IERAC)

IERAC will undertake an intensive program of land titling and campesino legal assistance and it will implement an ongoing program of studies and assessments of land tenure patterns in the project area.

6. GOE Marketing Enterprises

MAG and the National Marketing and Storage Agency (ENAC) will provide assistance to the target group in organizing marketing and input supply enterprises that can ultimately be operated privately by target group institutions.

7. Provincial Governments/Ministry of Public Works (MOP)

The Provincial Governments of Cotopaxi and Chimborazo Provinces, in coordination with MOP, will construct and upgrade rural access roads in the project areas to provide target group members with improved access to markets, input supplies, and technical and social services.

8. Regional Institutions

TA will be provided to assist with the creation of a regional development authority for the central Sierra (Region 4) that can ultimately plan, coordinate and replicate IRD projects. The regional development authority of Manabí (CRM) will be strengthened for similar purposes.

9. Other Implementing Agencies

As other sectorial components are added with future year funding, new implementing agencies will participate in the program. In FY-1981, for example, the Ministry of Health (MOH), the Ecuadorean Sanitary Works Institute (IEOS), the National Nutrition Institute (INN), and possibly the Social Security Institute (IESS) will undertake rural health, nutrition, family planning, potable water, and environmental sanitation activities in the IRD project areas. Likewise, an expected new Forestry Institute will develop and implement a reforestation and soil conservation program in the IRD target areas. In FY-1982, other GOE entities, such as the Ministries of Education and Labor, may join the program.

The following is a summary budget for the proposed AID loan and grant, and the GOE counterpart contribution:

Summary Budget

(US\$ 000)

Activities	A I D		GOE	Total
	Loan	Grant		
I. Institutional Assistance for RDS Mechanism	550	850	1,548	2,948
II. Salcedo IRD Project	2,988	300	3,723	7,011
III. Quimiag-Penipe IRD Project	4,151	300	5,984	10,435
IV. IRD Planning and Regional Assistance	<u>160</u>	<u>388</u>	<u>548</u>	<u>1,096</u>
Subtotals	7,849	1,838	11,803	21,490
Inflation and Contingencies	1,951	162	697	2,810
TOTALS	<u>9,800</u>	<u>2,000</u>	<u>12,500</u>	<u>24,300</u>

The major portion of AID loan resources will assist the GOE finance investment costs for the Salcedo and Quimiag-Penipe IRD Projects. Loan funds will also finance vehicles, commodities, minor costs and local technical personnel required for the RDS mechanism and for the IRD planning pro-

ject in Manabí. Grant funding will be used to finance foreign technical advisors and special studies and evaluations. A detailed justification for this grant funding is included in the Financial Analysis.

The AID loan will be disbursed during the period 1980-84. The Mission can obligate the entire \$9.8 million loan before September 30, 1980. Should sufficient loan funding not be available, USAID requests that the entire \$9.8 million loan be authorized with \$5.0 million obligated utilizing FY-1980 funds and the additional \$4.8 million obligated in October, 1980 (with FY-1981 loan funds). The grant will be incrementally funded over five fiscal years as follows: FY-1980, \$200,000; FY-1981, \$500,000; FY-1982, \$500,000; FY-1983, \$400,000; and FY-1984, \$400,000.

E. Issues

1. The "State of the Art" of Integrated Rural Development

The emphasis currently being placed on integral rural development in many LDCs is, in part, a reaction against the failures of the agricultural and rural development approaches of the 1960s and early 1970s. In the view of many observers, the agricultural commodity and national subsectoral approaches implemented during this period failed to address adequately the root causes of rural poverty and, in some cases, may have even accentuated this poverty. There is now a widespread conviction among many development specialists of the international agencies and LDCs (particularly in the LAC region) that area-specific, integrated programs are the most appropriate instruments for directing BHN resources to rural poor target groups.

Many of these integrated rural development approaches have been patterned after the Comilla Project in Bangladesh. The Comilla project--and others like it--was clearly successful in generating and diffusing technical and institutional change and in improving the welfare of rural villages.

During intensive review for the Project proposed herein, USAID reviewed many integrated-type projects as possible guides for project design. USAID examined the design and analysis of AID-financed projects in Panama, Nicaragua, Costa Rica, Honduras, Dominican Republic, Bolivia, and Perú. USAID also reviewed the Mexican (PIDAR) and the Colombian (DRI) models of integrated rural development being supported by both IBRD and IDB, and reviewed the recently approved IBRD integrated rural development projects in Colombia, Perú, Ecuador, and Northeast Brazil. Yet, as indicated in a recent DSB draft report entitled Integrated Rural Development: Making it Work, the state of the art on IRD approaches is still rudimentary. There appears to be no general agreement in the development literature or in evaluations on what makes for a successful IRD project

design. Integrated approaches to agriculture and rural development are still experimental, and few generalizations can as yet be made about them. Some projects have been quite successful (e.g., Comilla in Bangladesh, PIDAR in Mexico, INVIEANO in Nicaragua), while similar approaches in other countries have encountered difficulties. There is no "cookbook approach" that can be followed. Each project must reflect country-specific conditions and local political and institutional realities. In USAID's view, high level political support for IRD (such as exists in Ecuador) and adequate funding for technical advisors may be among the most critical factors for ensuring overall program success.

2. The Status of the Rural Development Secretariat (RDS)

The RDS has not as yet been established as a legally functioning entity, although the highest level GOE officials have repeatedly informed the Embassy/USAID that it will soon be created by executive decree. The U.S. Ambassador and AID Representative recently met with President Roldós and Vice President Hurtado (see Annex H), and both of these GOE officials reaffirmed their policy of creating the RDS as one of the major development actions of the new democratic Government. Over the past eight months, high level Presidential and Vice Presidential advisors have also continuously assured USAID that the RDS will be created, and they have outlined how the RDS will be organized, staffed, and operated.

In stating GOE policy on integrated rural development, the National Development Plan (1980-84) states:

—"A Technical Unit (RDS) will be established at the highest governmental level possible. . . to fulfill the function of programming, coordinating, organizing, following-up on, and evaluating the actions of integrated rural development projects, and it will propose financial resource allocations to organizations of the public sector that will participate in the referenced (IRD) projects."

—"A financial mechanism for integrated rural development will be established to orient and channel resources to specific IRD projects. It will operate under the guidelines established by the technical unit mentioned above."

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. Moreover, although it currently appears that the RDS will be attached to the Presidency, alternative locations in the Vice Presidency and CONADE have been considered and rejected.

A number of international agencies (e.g., FAO, IICA, IBRD) have expressed interest in working with or through RDS. USAID believes that a condition precedent to disbursement in the Project Agreement requiring the legal establishment and staffing of RDS will represent added incentive for quick resolution of the status of the RDS. A FAO technical assistance agreement for the RDS has been structured in a similar way. The issue, however, is what are the implications for the feasibility of the Project if the RDS is not established within a reasonable time. Is there still a project without the RDS?

In the event the RDS is not created, the project components proposed herein could be implemented through the Ministry of Agriculture, much as in the Tungurahua project funded by IBRD. There would still be a Project without RDS, although a less significant project. Under a MAG structure each Project component could stand on its own, and together could be implemented as important GOE activities. While a new IRD mechanism would not be created, important field level objectives might be accomplished. The assistance planned for strengthening the RDS would be redirected toward improving MAG's structure for designing and administering projects within its current integrated agricultural program (PIDA).

Nevertheless, while feasible, this is a less attractive option than the RDS concept. MAG's orientation is to agricultural production rather than to broader rural poverty issues. Historically, MAG has had great difficulty coordinating its own autonomous agencies, let alone ministries and agencies outside the MAG family. Before moving to the MAG option, in the event the RDS is not created, USAID would complete for AID/W review a detailed analysis of the ability of MAG to coordinate national level implementing agencies and to bring into IRD projects complementary resources from other sectors.

3. Phasing of AID-IRD Inputs

The IRD program to be assisted by AID will ultimately involve various types of inputs in agriculture, rural health, nutrition, potable water, environmental sanitation, forestry and soils conservation, rural education, skills training, and off-farm employment. A number of different implementing agencies, perhaps as many as 10 to 15, will ultimately participate in the program. To simplify the planning and implementation of what is inherently a complex program, the GOE and USAID have chosen to dis-aggregate and phase-in project interventions over several years rather than attempt to do everything at once.

This, of course, raises the issue of why should agriculture be the lead intervention. Interventions that address other constraints (e.g., health, potable water) may be equally or even more important. Why is the program beginning with agriculture?

First, one of the most serious problems of the rural poor is a low level of productivity and income. Unless the productive base of the poor is improved, it is unlikely that other interventions can be totally

effective. Developing the productive base of IRD regions means increasing agricultural productivity.

Second, to date agricultural sector institutions have greater experience and willingness than institutions in other sectors to plan and implement integrated programs. An integrated agricultural program (PIDA) was developed for this purpose within the agricultural sector and it now has several years of operating experience. Other ministries and agencies (such as MOH, MOE, MOP, and IEOS) have no such experience or organizational structure. The knowledge of these agencies about IRD approaches is limited, and they have minimal experience participating in the planning and implementation of IRD programs. Therefore IRD delivery systems and supporting mechanisms within these other sectors need to be carefully analyzed, and fitted into the overall IRD mechanism so that each complements and supports the other. USAID believes that this institutional development process can best be accomplished by phasing AID inputs over time rather than attempting to do everything at once.

USAID recognizes that the target groups within the Salcedo and Quimiag-Penipe IRD projects consider health and potable water as high priority activities. The developmental challenge, however, is just not building so many health centers, or latrines, or potable water systems. The critical problems are how are these health centers going to be staffed and how are they going to extend services. How will the potable water systems be serviced and how will communities be mobilized to participate in environmental sanitation activities? These organizational and institutional questions need to be addressed before health infrastructure can move forward. If this is not done, the risk will be run of duplicating the errors of other projects that emphasized health infrastructure with inadequate consideration of staffing and delivery system issues.

4. The Integrated Rural Development Approach in Ecuador

The GOE is in the process of committing itself to an ambitious program of rural development and institutional coordination. Its new rural development strategy, particularly its IRD approach to rural poverty, closely parallels AID's emphasis on assisting programs that provide for the basic human needs of the poor majority. There is no doubt of the GOE's sincerity and commitment to the objectives of its strategy. The rural development part of its new Development Plan reflects a widespread consensus within the GOE and donor agencies. The Plan has been extensively debated by the Roldós Administration and is now being implemented. In USAID's view, change will come in Ecuador either as a result of the success of the GOE's new Development Plan or as a result of its failure. The interests of the U.S. are with the Plan's success.

However, some degree of skepticism about the ability of the GOE to fully implement its Rural Development Program—particularly its IRD approach—is inescapable. The scope of the effort is ambitious. The exist-

ing institutional structure has not in the past demonstrated skill or interest in dealing with the problems of the poor. There has been historic difficulty in Ecuador for any agency or past political administration to bring about effective coordination among agricultural sector institutions, let alone institutions outside the agricultural sector. Serious institutional, managerial, technological, and human resource weaknesses must also be overcome to implement the Ecuador IRD approach.

The GOE will initiate its new program during a period in which the country faces serious political, social, and economic problems. A major division between the legislative and executive branches of the GOE may complicate program implementation. Thus, a realistic assessment of the prospects must conclude that the GOE's integrated rural development program will be a hard effort, replete with some difficulties. Why then is USAID proposing to direct a major element of its program to this approach?

First, the IRD program is one of the highest GOE development priorities for 1980-84, and it is exactly in line with AID policies of reaching the rural poor. During his July, 1979 trip to the U.S., then President-elect Roldós himself indicated that IRD projects would be one of his highest priorities. Vice President Hurtado has repeated this assertion and has specifically requested AID assistance in this area. GOE ministers and the new National Development Plan further reflect this priority. If AID does not support the GOE's integrated rural development approach, such indifference would isolate USAID's program from the mainstream of the most significant GOE rural development efforts for 1980-84.

Second, the IRD approach being proposed by the GOE has evolved over the last four years in close consultation with international agencies such as the IDB, IBRD, FAO, and IICA. As indicated in this PP, all of the major donor agencies are supporting IRD approaches in Ecuador.

Third, the role of AID is not necessarily to assist host countries with the easiest programs to implement. AID's role is to be a pioneer in helping countries build new structures that better address key development problems. AID in Ecuador has effectively helped fill planning and institutional vacuums and has served as a catalyst to bring about needed institutional and technological changes. Over the years AID has probably been the most effective donor in assisting the GOE establish and make operational new institutional systems. It is exactly this institution-building approach that is most appropriate in helping the GOE make operational its new IRD mechanism.

Given the above considerations, counseling restraint to the GOE would not be effective. Whittling down AID support would diminish AID's influence and usefulness to the GOE, without protecting AID from

association with a complex program to implement. Failure to support this effort because of anticipated difficulties would be unthinkable because of the reasons outlined above. After careful deliberation, USAID has concluded that the wise course would be to support the GOE's integrated rural development approach in full recognition of possible difficulties. AID's influence and ability to help the GOE through the inevitable problems which lie ahead would thus be maximized. The U.S. commitment to help the poor and disadvantaged of Ecuador would be unequivocally demonstrated. By joining the GOE in this effort and meeting the challenges that lie ahead, AID and the GOE will learn a great deal about how the U.S. can participate with developing countries in improving the lives of the rural poor.

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
Mr. 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	Ing. Rómulo Solís, INIAP
Augusto Larrea, CONADE	Ing. Jaime Borja, MAG
Econ. Francisco Granados, CONADE	Lcdo. René Unda, MAG
Ing. Arturo Orquera, INERHI	Ing. Guillermo Maldonado, MAG
Econ. Gonzalo Guzmán, BNF	Dr. José Yáñez, MAG
Ing. Jorge Viteri, IERAC	Ing. José Castellanos, MAG
Lcdo. Ernesto Oviedo, IERAC	

3. The following consultants assisted in the preparation of the Project.

Dr. Samuel Daines, PCI	Dr. Fausto Maldonado, Contractor
Dr. Allen LeBaron, PCI	Econ. Rubén Salazar, Contractor
Dr. Karl Hancock, PCI	Arq. Carlos Luzziaga, Contractor
Mr. Craig Anderson, PCI	Mr. Robert Adler, USAID/Peru
Mr. John Hatch, PSC	

4. The following individuals also assisted in the design of the various components of the Project:

Dr. Diego Londoño, IICA	Ing. Bolívar Navas, IICA
Ing. Agustín Cobos, IICA	Ing. Nicanor Vela, USAID/E

5. The Project was reviewed by the following officers:

John A. Sanbrailo, AID Representative, USAID/Ecuador
Paul Fritz, Acting Deputy AID Representative DSB/RAD
Patricio Maldonado, Program Officer, USAID/Ecuador
Steven Whitman, Regional Legal Officer

G. Recommendation

The Project proposed herein was designed by a team composed of professionals from GOE institutions, USAID, AID/W, private consulting firms, and other sources. As part of the design process, the RDS structure was worked out in detail and two specific IRD field projects and one planning project were identified for implementation shortly after the RDS is legally established. The Project was 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 loan ----- for US\$9.8 million and a grant for US\$2.0 million 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, the PP for the Rural Technology Transfer (Title XII) Project, and two USAID contracted special studies entitled Poverty in Ecuador (1979) and Income Distribution in Ecuador (1980). Subsections B and C below are drawn from these documents and provide the background and setting for the Project proposed herein.

B. Rural Poverty and Agricultural Stagnation in Ecuador

The rural poor in Ecuador are underprivileged, poorly educated, suffering from poor health, malnourished, and in general forgotten by those institutions that are mandated to serve them. The living conditions of rural dwellers are much lower than those in urban areas. Per capita income in 1975 (in 1979 prices), for example, was \$ 1,435 in urban areas but only \$ 361 in the countryside. Adult illiteracy is four times higher in rural areas (34%) than in urban areas (8%). Of every 1,000 students who enter first grade in rural public schools, only 272 complete the sixth, compared with 611 in urban areas. Electricity reaches 84.3% of urban dwellings but only 11.6% of rural dwellings. And whereas 72.8% of urban dwellings have sanitary facilities and 11.2% have a latrine, 86.8% of rural dwellings have neither.

With marginal lands, low levels of technology, lack of access to modern agricultural inputs and public services, and general alienation from the larger society, these families find that they are not able to provide for most of their basic human needs. In order to survive, they are often forced to migrate or otherwise sell their labor at extremely low wages in off-farm activities.

As discussed in the 1982 CDSS, Ecuador's rural poverty problem is concentrated within approximately 450,000 farm families, 73% of whom live

in the Sierra. Although many of these families can be classified as "near landless", truly landless rural families are few. The 1964 Agrarian Reform Law gave peones on haciendas in the Sierra the right to the small plots of land they traditionally worked. Today, many small farmers continue to work on the hacienda as well as maintain their own small plots.

The Ecuadorean small farm family typically produces enough food commodities for only partial subsistence, on a land base averaging less than two hectares. Production is often limited to basic cereal grains (barley, corn, wheat) intercropped with legumes (peas, broad beans, chocho, quinoa). Many grow potatoes or other tubers, and some supplement their family diets by raising small animals. Family labor, in relation to the land area, is available in surplus quantities. Capital and modern agricultural technology are at low levels, and the usually marginal land base is intensively utilized through a variety of intercropping systems. The efficiency of the small farm stated in terms of factor productivity could be improved by (1) rationalizing labor use, (2) gaining access to better land and/or improving the quality of the existing land base, and (3) receiving more capital inputs (e.g., fertilizers, pesticides, improved seeds, irrigation water, and improved managerial skills).

Increased efficiency, however, would not necessarily translate into improved economic welfare for the small farmer unless other constraints are addressed. A generally inefficient marketing system, for example, prohibits the small farmer from receiving reasonable economic benefits from his efforts. Limited access to health facilities, high infant mortality, and widespread malnutrition debilitate the population. Lack of access to education and training result in illiteracy and general lack of skills. Inadequate roads, irrigation, and public services reflect the country's poor infrastructural base. Consequently, production and productivity stagnate, and small farm incomes and quality of life continue to fall behind the rest of the economy. Small farm families have lived with low quality of land, droughts, erosion, and disease for such a long time that many of them suffer from fatalism and alienation from the rest of society. The word "problem", which indicates a possible solution, has little meaning for the rural poor.

Rural poverty is closely tied to the situation of agriculture in general, since the rural poor constitute over two thirds of the farm units, produce half the country's basic crops, and supply much of the labor force for other farm units. During the past seven years, the agricultural sector in Ecuador has fallen far short of its potential. Agriculture's contribution to gross domestic product has declined from 29% in 1970 to 19% in 1978. Rural population, on the other hand, has increased by about 2.4% per year, implying that the economic welfare of those who rely on agriculture for their livelihood has worsened relative to other sectors of the economy.

What is more disturbing, however, is that per capita food production in Ecuador has actually declined, food imports have increased, food prices

are in the vanguard of a dangerous price inflation, and the sector's ability to earn needed foreign exchange has deteriorated. At the same time, the sector's natural resource capacity to produce more has worsened, due to overgrazing, cultivation on steep slopes, misuse of water, drought, and deforestation. Large amounts of export earnings from petroleum sales are being diverted from capital formation to meeting Ecuador's food needs. Unless significant agricultural development measures are taken, Ecuador's agricultural sector will probably not be in a position to provide for the country's internal food and foreign exchange needs as petroleum exports phase down in the 1980's.

The problems of rural poverty and agriculture are indeed complex and multidimensional, and potential solutions cut across traditional sectoral boundaries. Increasing agricultural productivity and farm income is only a partial answer to addressing the multifaceted problems of Ecuador's rural poor. Increased off-farm employment opportunities and a variety of social services such as greater access to health, education, and potable water must also be part of the solution. The GOE is aware of these complexities and is proposing to utilize integrated rural development (IRD) projects to raise incomes and living standards among the rural poor.

Through IRD projects the GOE expects to bring together in a coherent whole a series of rural poverty interventions in agriculture, health, potable water, education, nutrition, and employment creation. In the past, each of these inputs has often been implemented in isolation and dispersed throughout the country with little or no coordination and linkage. It is expected that these IRD projects will be one of the major GOE mechanisms for achieving its broader goals of redistributing income, reducing underemployment, increasing the availability of food commodities, and in general providing for a greater participation of the poor in the benefits of economic growth.

C. Constraints to Addressing Rural Poverty

There are a host of economic, technological, and institutional factors which explain the situation described above. For the purpose of the following discussion, these constraints will be grouped under the headings: on-farm, market, employment, social service, and institutional constraints.

1. On-Farm Constraints

A fundamental constraint limiting the ability of the small farm unit to expand production and increase productivity is the land base, both in quality and quantity. The average small farm has less than two hectares of land, and 73% of them are located in the Sierra, where the soils are less productive, hail and frost more prevalent, and rainfall irregular and low.

In addition, small farmers have inadequate access to credit, irrigation water, infrastructure services, and technical assistance. For example, of the total credit available to the sector in 1976, only 11.4% was allocated to meeting the needs of farms with less than 10 hectares, while over 54% of the total went to units averaging over 100 hectares. The level of modern agricultural knowledge relevant for the small farmer is almost nonexistent; few small farmers know about soil analysis, the use of fertilizers, improved seeds, or proper cultural practices.

Rural areas cultivated by small farmers are also facing widespread environmental degradation and general misuse of natural resources. The GOE estimates that about half of the land used for crop production is affected by soil erosion, and in many areas desertification is underway. Ecuador's highland areas have been denuded of trees, and unsound agricultural practices are serious small farmer problems throughout the country.

In short, the land tenure system, coupled with increasing environmental degradation and lack of needed inputs (e.g., credit, appropriate technological packages, irrigation water, infrastructure, managerial skills, technical assistance) are farm-level constraints which will have to be addressed if small farmers are to develop their agricultural potential and begin their climb out of poverty.

2. Market Constraints

Small farmers generally do not have access to market price information, marketing cooperatives, or other marketing services. Inadequate on-farm storage, farm-to-market roads, and transportation facilities are other market constraints which limit small farmer development in Ecuador.

The demand for farm commodities produced in Ecuador has grown considerably faster than production. This implies that if small farmers were capable of producing a larger surplus, their incomes could substantially increase (unless, of course, costs have increased more). In the recent past, however, the GOE has intervened in agricultural markets in an attempt to stabilize and keep down the price of food. The impact of this policy has been to keep prices at levels which favor urban consumers and which act as a disincentive to agricultural production. Since over half of Ecuador's cereal grains and legumes are produced on farms with less than 10 hectares, agricultural price policies and inadequate marketing services constitute a major constraint to improving small farm production and incomes.

3. Employment Constraints

Another important consequence of Ecuador's generally deteriorating state of agriculture is the extreme underemployment that exists in rural areas. It is estimated that agricultural production could be maintained at its present levels under current technologies with only 50% of the economically active rural population. Also, 75% of Ecuador's rural

households are either landless or near landless (owning less than five hectares of land). Redundancy in the rural labor force has depressed rural income, increased rural to urban migration, and in general increased the socio-economic dualism that exists between rural and urban areas.

Most of Ecuador's small farmers find that they are not able to provide for their basic needs from agriculture alone. Likewise, it is clear that the problems of many of the Ecuadorean rural poor cannot be solved through a farming solution alone. The expansion of agroindustries, rural small enterprises, and other activities that can provide alternative employment opportunities must be a vital element of any strategy to deal with rural poverty in Ecuador.

4. Social Service Constraints

While the production, marketing, and employment constraints described above explain much of Ecuador's rural poverty, a lack of rural social services is also a key factor in maintaining the poverty cycle. The health status of the rural population is considerably worse than that of urban dwellers. For example, the infant mortality rate for rural populations is approximately twice that of urban areas. The leading causes of rural deaths -particularly diarrheal diseases, respiratory illnesses, measles, nutritional deficiencies, and pneumonia- are related to a lack of rural health services, potable water and poor environmental sanitation. Protein-calorie malnutrition among rural women and children is considered the most serious nutritional problem in the country.

Rural-urban disparities in education remain pronounced, despite recent progress. Only 66% of primary school age children are estimated to attend in rural areas, while in urban areas nearly all do. About 73% of all rural children are estimated to drop out of school by the 6th grade, compared with 39% in urban areas. The national education system has done little to consider the unique learning needs of the large cultural and linguistic minority groups. Within the indigenous cultures, schools are still widely viewed as alien institutions representing the values of the dominant Hispanic culture. Moreover, the curriculum for all rural residents remains urban-biased and does little to promote increased productivity in agriculture and other rural occupations.

5. Institutional Constraints

The historic inability of the GOE to deal with the constraints listed above can in large part be attributed to institutional, managerial, and planning weaknesses and to a lack of appropriate delivery systems that can direct resources and services to the rural poor. These institutional and technological constraints are discussed extensively in USAID's Rural Technology Transfer (Title XII) Project Paper and they will only be briefly summarized below.

Within the agricultural public sector, there are a number of weaknesses which hinder institutions from better serving the rural poor. These include (a) dispersion of service functions without coordination, (b) institutional orientation favoring larger farmers, (c) ineffective management and delivery systems, and (d) a weak human resource base and planning capacity. For example, each of MAG's autonomous agencies, zonal offices, and commodity programs has its own extension program, often duplicating efforts. In general, extension agents are poorly trained, underpaid, and lack incentives for working in isolated small farmer areas. Extension agents, therefore, typically work mainly with the better-off, larger farmers.

Similar problems exist in the area of generating and disseminating agricultural technologies appropriate for small farm use. Most research work has to date focused on the needs of larger farmers, although some progress is being made in developing research and dissemination activities that focus on small farm agriculture. However, financial and technical limitations, lack of professional staff, and lack of high level concern have limited INIAP's capacity to reach the small farmer.

Institutional barriers are likewise found throughout all the institutions mandated to provide services in rural areas, particularly the National Development Bank (BNF), the Agrarian Reform Institute (IERAC), the Water Resources Institute (INERHI), and the National Marketing and Storage Agency (ENAC). Serious weaknesses are also found in nonagricultural agencies. For example, the Public Works Ministry (MOP) and the Ecuadorean Sanitary Institute (IEOS) have excellent urban oriented engineering staffs, but concentrate very little of their efforts on the infrastructure needs of the rural poor. The Ministries of Health, Education, Social Welfare, and Labor have major problems expanding the coverage of their rural programs and designing projects that are appropriate to the needs of the rural poor. And institutional barriers are also found within those GOE agencies responsible for national policy and coordination.

In discussing the weak institutional system for serving the rural sector, the World Bank Country Study on Ecuador (July, 1979) concluded that, "This weakness is associated with the proliferation of public entities in agriculture, and the lack of an effective mechanism for overall planning and coordination as well as the absence of a comprehensive budget and the poor data base that has existed in the past".

Thus, the critical institutional constraints are both vertical and horizontal. In the vertical category, some agencies (e.g., INIAP, IEOS, MOP, BNF, INERHI) require a greater reorientation of their activities to the needs of the rural poor and the development of more appropriate technologies and delivery systems. Other agencies committed to dealing with the causes of rural poverty (e.g., IERAC) need to strengthen and expand their institutional capacity. And all agencies need to develop better approaches for extending their coverage in a more cost-effective and relevant manner.

However, even if individual agencies could suddenly reorient their activities to the needs of the poor, vertical improvement alone would probably not be sufficient. Because the constraints to dealing with rural poverty in Ecuador are multidimensional, horizontal mechanisms for improving the coordination of programs among different agencies--both within the agriculture and nonagriculture sectors-- must also be developed. Unless the inputs of a number of different agencies can be brought together, concentrated, and delivered to the rural poor in an integrated manner, the GOE believes that the efforts of any one agency or ministry alone will be limited. It is felt that a "critical mass" of resources and services--each designed to reinforce each other-- must be developed and delivered if Ecuador's centuries old rural poverty cycle is to be broken.

These institutional constraints obviously have important implications for the design of the GOE's integrated rural development strategy. The proposed strategy must be broad enough to include elements which address the critical production, marketing, employment, and social service constraints faced by the rural poor. In addition, vertical and horizontal institutional strengthening activities are necessary for improving the delivery of services to the target group.

D. Rural Development Strategies

The GOE recognizes the problems and constraints discussed above and has formulated a rural development strategy to address them. AID is proposing to assist the GOE in carrying out the strategy through a rural development program which combines building a GOE institutional mechanism for planning, coordinating, funding, and carrying out IRD projects with the implementation of model IRD projects designed to provide the inputs needed at the field level. The main objective is to leave upon termination of AID assistance an institutionalized capability -- at the national, regional, and local levels -- to deal with rural poverty problems in a sustained and cost-effective manner. Other donors also are working with the GOE on IRD projects. The GOE strategy, AID's proposed program, and other donor activities are discussed in the sections that follow.

1. GOE Rural Development Strategy

The GOE's new National Development Plan (1980-84) gives high priority to rural development and proposes three major actions for addressing the problems of the Ecuadorean rural sector. First, emphasis will be placed on developing new mechanisms for delivering resources and services to the rural poor in a more coherent, concentrated, and integrated manner. The Plan identifies seventeen specific integrated rural development projects that will be implemented through this mechanism. A second major program will place renewed emphasis on increasing agricultural production by expanding resource flows to the sector and by addressing more effectively technological, institutional, marketing, credit, and rural infrastructure bottlenecks.

And a third effort will initiate a decentralization program aimed at developing secondary cities into improved rural growth and service centers. Taken together, all of these programs represent a concerted GOE effort to begin reversing a 30 year policy of using rural areas to subsidize the growth of the country's urban-industrial sector. *

The GOE's rural development strategy contemplates actions at both the national and field levels. At the national level, GOE leaders consider building a strong rural development institutional base as a prerequisite for addressing the multidimensional problems of rural poverty and agriculture. To this end, the GOE intends to establish a Rural Development Secretariat (RDS), probably within the Presidency. The RDS is expected to plan and coordinate all rural development activities, with the various rural sector institutions (e.g., MAG, MOH, MOE, MOP, INIAP, INERHI, BNF, ENAC and the four regional development authorities - CREA, PREDESUR, CEDEGE, and CRM) implementing the activities. The RDS will administer a fund designed to pool national and international resources for priority IRD projects, as well as a rural transfer of technology fund. A rural training system will also be established within the RDS in order to increase participation of the rural poor, to promote campesino organization, to train small farmers, and to provide a better means for disseminating appropriate technologies to the rural sector.

In order to strengthen national level institutions, and to focus their efforts more directly on the problems of the rural poor, the GOE is contemplating an intensive effort to make available training, technical assistance, technology transfer mechanisms, and applied research support to the various rural development institutions. In addition, a key element of the GOE's strategy is to involve the institutions in a coordinated fashion in effective field level programs.

At the field level, the GOE is proposing the concept of integrated rural development as the fundamental mechanism for reaching the poor. The GOE intends, through the RDS, to identify the problems facing key geographic areas of the country and to develop appropriate sets of project interventions for each. For rural poverty areas, project activities are expected to include community organization development, appropriate agricultural and nonagricultural technology transfers, improvement in the natural resource base, improved availability of credit and other inputs, marketing services, training and skill improvement opportunities, better

* It should also be noted that Vice President Hurtado, who is President of CONADE, is one of Ecuador's leading development writers and researchers. His three books, Dos Mundos Superpuestos: Ensayo de Diagnóstico de la Realidad Ecuatoriana (1969), La Organización Popular en el Ecuador (1974), and El Poder Político (1978) are the classic works on Ecuadorian development. These books analyze Ecuador's dual economy, describe the importance of popular organizations (e.g., cooperatives, comunae, unions) for Ecuadorian social progress, trace the history of Ecuador's economic development, and strongly argue for greater GOE attention to rural development and the problems of the rural poor. The ideas and analyses contained in these books have emerged extensively in the GOE's new planning documents.

access to health facilities, improved nutrition, rural roads, more relevant education, and energy provision.

2. USAID Rural Development Program

USAID expects to assist the GOE in both levels of its rural development strategy. In order to strengthen the national level institutions, to better focus them on the problems of agriculture and rural poverty, and to provide them with improved institutional and technological bases necessary to deal with the fundamental sectoral problems, USAID is proposing a Rural Technology Transfer System Project, under Title XII of the Foreign Assistance Act. In addition, in order to help MAG's mid to upper-level managers better plan and manage development projects, USAID's Training for Development Project will have a special intensive pilot effort directed toward MAG personnel. And through a regional project with DSB/ED, USAID will support the GOE's new system for campesino training that will form one element of the integrated rural development mechanism.

In support of the field level strategy, USAID intends to assist the GOE in making operational its IRD planning, coordinating, financing, and implementing mechanism. An important part of building this mechanism will be the experience gained in planning and implementing model integrated rural development projects in several geographic regions of the country. The specifics of the GOE's integrated rural development mechanism will be presented in Part II below.

AID's proposed assistance reflects the GOE's wishes at the highest levels. When President-elect Roldós visited the United States in July 1979, he stated that integrated rural development would be one of the highest priorities in his government and that he would be looking for international assistance to help support it. In more recent meetings between Vice President Hurtado and the AID Representative, the Vice President specifically stated that integrated rural development was to be a priority area in which he would like AID to assist. In a series of meetings between USAID and officials from CONADE and other GOE ministries and agencies, the latter have further defined the type of model they would like to see established and have indicated that they are looking to AID not only for assistance in financing individual projects, but for assistance in establishing the proposed mechanism. Clearly, the GOE's integrated rural development program is directly in line with AID's policy of assisting host country efforts designed to meet the basic human needs of the poor majority.

3. Other Donor Activities

Since approximately 1977, the major donors to Ecuador have begun to move out of single subsectoral projects toward integrated rural development efforts of one form or another. These efforts, however, have all been directed in different ways and have been uncoordinated. It is the hope of the GOE and AID that one effective IRD mechanism can be established which all donors can work through; it is toward this end that the proposed Project is directed.

The World Bank (IBRD) during the early and mid-1970's financed a series of subsectoral projects in Ecuador in such areas as fisheries, irrigation, livestock, improved seeds, agricultural credit, and technical assistance to the Rural Development Planning Unit of the National Planning Council (JUMAPLA, now superceded by CONADE). In 1978 IBRD decided that only an integrated approach to rural development would be able to significantly improve conditions in rural areas, and it prepared the Tungurahua Rural Development Project, signed in May 1979. The \$ 30 million project, with an \$ 18 million IBRD loan, is to finance rehabilitation and expansion of irrigation systems, off-farm works, provision of credit and storage facilities, construction and improvement of rural roads and rural electrification, and provision of potable water, latrines, health facilities, and community centers.

IBRD recognized the weaknesses of the GOE institutional structure to carry out such a project and decided that the best solution was to bypass national level offices to the degree possible and deal with either the local offices of national entities or with local institutions. Consequently, while MAG nominally is coordinating the project through agreements with various implementing agencies (e.g., INERHI, IEOS), IBRD has established a Coordinating Board to supervise the execution of the project and an Advisory Board to coordinate the activities of the project implementing entities. Six of the 11 members of the Coordinating Board are local officials, as are all 10 of the members of the Advisory Board. In other words, though it has stated in its project documents that Ecuador needs an effective national IRD mechanism, IBRD has basically avoided the issue of institutional weaknesses and replicability by creating its own project and area-specific project implementing structure. This structure could well disappear after project completion.

The Interamerican Development Bank (IDB), Ecuador's largest donor, also followed a strategy until 1977 of financing subsectoral projects. Since then, the focus of its rural development program has also been area development projects. Its strategy has been to avoid MAG altogether and deal only with regional development authorities. Its 1978 \$ 16.9 million loan for an integrated rural development project in the Zamora-Nangaritza Valley of the Oriente was negotiated with PREDESUR. Its proposed \$ 18.5 million loan for an integrated project in the Palora-Gualaquiza area, also in the Oriente, is being negotiated with CREA. And its recently approved Daule-Peripa Project in the Guayas River Basin will be implemented through CEDEGE. The IDB approach has also avoided the issues of IRD project replicability.

The Organization of American States' Institute for Agricultural Sciences (IICA) has been supporting, through technical assistance and training, several of MAG's integrated agricultural projects (PIDAs). MAG established the PIDA model several years ago as a way to provide integrated services for small to medium farmers. Twenty-one PIDAs are either in function or in advanced stages of planning. Though it has been partially successful,

the PIDA concept has suffered from lack of coordination with the other entities charged with implementing various of the project elements. Consequently, MAG has tended to take upon itself irrigation, marketing, research, and other activities which should be carried out by the specialized agencies. This has caused MAG to spread itself thin and to carry out certain activities ineffectively or inefficiently. The PIDAs now functioning have also been marked by inadequate planning, objectives, and evaluation, and by problems of interacting effectively with small farmers. The IICA-assisted PIDAs, however, have been among the most successful, and the PIDA model has potential.

The United Nations, through its Development Program (UNDP) and its Food and Agriculture Organization (FAO), is also supporting the concept of integrated rural development. A \$ 1.0 million grant of technical assistance is in direct support of the RDS. A \$ 2.0 million agricultural project in the Provinces of Imbabura and Carchi involves primarily institutional support to the MAG zonal office, to improve its capacity to undertake area development projects. FAO is providing experts in a number of diverse fields to help the zonal office plan a series of coordinated project activities.

It is noteworthy that the four principal donors to the rural sector have all focused their efforts on integrated rural development activities. It is also noteworthy that the donors have chosen four separate models through which to carry these efforts out, although IBRD, FAO, and IICA have all expressed strong interest in working through the RDS once it is created and made operational. Given the institutional confusion and lack of any effective coordinating body under the previous Ecuadorean Government, it is understandable that this diverse effort among the donors took place. It is a promising sign that the new Government wishes to correct this dispersion and focus rural development efforts in a coordinated way through a national IRD mechanism.

E. USAID Goal, Purpose, and Strategy

USAID's sector goal is to increase production, employment, and incomes, and otherwise improve the well-being of the rural poor. This Project contributes to that goal by making operational an IRD mechanism and implementing model for integrated rural development projects which will provide those resources and services to the rural poor needed to achieve increased production, employment, incomes, and well-being.

This first in a series of IRD projects will focus mainly on the agricultural aspects of the rural poor's livelihood. Agriculture remains the economic base of the rural poor, providing a large proportion of real income and taking up much of the working hours of this group. However, as discussed above, because of small plots, poor soils, arid climatic conditions, lack of technical knowledge, lack of accessibility of credit, supplies, infrastructure, and services, a difficult marketing situation, and lack of effective organizations to serve their interests, the typical small farm

family is unable even to feed itself and is locked into a cycle of poverty which includes the need to migrate, the need to work off-farm for extremely low wages, malnutrition, and severe social problems. Taking agriculture in its broadest sense to include all activities performed on the farm, the Project proposed herein will attempt to improve the agricultural productivity and incomes of the rural poor in selected geographic areas.

Through a series of closely interrelated projects, time-phased over three fiscal years, USAID will provide follow-on assistance concentrated in part in the same geographic areas. By the end of FY-1982, IRD projects involving all proposed interventions should be in full implementation, although AID funding limitations could push this time table into FY-1983. Each AID project will be self-contained but will form one building block in support of a comprehensive GOE integrated rural development program.

The first and largest intervention, proposed in this PP for FY-1980 funding, will set the institutional and field level framework for the entire program. It will stress mainly agriculture and related activities, for the following reasons: (1) because of the importance of increasing the productivity of the rural poor, (2) the need to create an improved productive base within the selected IRD regions, and (3) the experience and readiness of agricultural sector institutions to participate in an integrated development approach. USAID also believes that the disaggregation of interventions and their time-phasing will help facilitate project planning and management, permit greater concentration on institutional improvements at the implementing agency and field levels, and help reduce the difficulties of what will undoubtedly be a complex program to implement (see Issues No. 3 and 4).

In FY-1981 three additional interventions (probably incrementally funded) will follow, through an AID Rural Health, Nutrition, and Potable Water Loan, a Family Planning Grant, and a Forestry and Soil Conservation Loan (see FY-1981 Congressional Presentation for further details). Through its FY-1981 HIG USAID may also attempt to direct some funding into rural housing within the proposed IRD regions. And in FY-1982 USAID hopes to round out its inputs into the IRD program with an agroindustry/rural enterprises loan and a rural education/skills training loan (see FY-1982 ABS for further details). These follow-on projects will be smaller than the initial AID interventions because they will be able to build upon and utilize community organizations, trained manpower, and physical infrastructure that are being provided through the first AID funded IRD project. Interventions which attack all major rural poverty constraints within the IRD regions should be in full implementation by FY-1982/83.

The proposed Project's purpose, therefore, is to make operational an IRD mechanism so that IRD projects can be replicated throughout Ecuador. One of the principal ways of institutionalizing the mechanism will be by undertaking two model integrated rural development projects, with interventions (starting in agriculture and moving into other sectors) which will have a significant impact on the productivity, incomes, and

well-being of the target group. The end of Project status is the successful institutionalization of the GOE's IRD mechanism and the initiation by the GOE of other integrated rural development projects using models developed through the AID Project but utilizing non-AID funding. The two subprojects selected for implementation with AID financing have end of subproject indicators on percent increase of real income, percent increase in factor productivities, percent decrease in migration, and percent decrease in malnutrition of beneficiaries compared with their situation before the subproject.

The IRD mechanism to be established is discussed in more detail in Part II below. Basically, it is conceptualized as a supply and demand model. On the supply side, the mechanism recognizes the need for adequate funding and greater coherence in the planning and implementation of IRD projects. It also recognizes the importance of coordinating the delivery of resources at both the national and local levels and of developing more cost-effective delivery systems that involve the participation of the poor. To these ends, IRD planning, monitoring, and evaluation units and a financial fund will be established within the RDS, not only to plan but to coordinate the actions at the national level of the various implementing institutions. Also, regional level organizations (e.g., regional development authorities, MAG zonal offices) will be strengthened to provide coordination of implementing institutions at the local level.

On the demand side, it is recognized that the rural poor must be organized and that procedures must be developed so that they can articulate what resources and services they most need and so that they can participate in their delivery. To these ends, target group liaison organizations will be strengthened, and methodologies developed to improve the linkages between such organizations and those responsible for the provision of services.

As indicated above, a fundamental part of institutionalizing the IRD mechanism will be the financing of two IRD subprojects, one in the Quimiag-Penipe area of Chimborazo Province and the other in the Salcedo area of Cotopaxi Province. The Project will also help the RDS plan at least one additional subproject listed in the National Development Plan, undertaking this planning activity through regional development entities.

Each of the components of this Project - (1) IRD Institutional Assistance, (2) Subproject Salcedo, (3) Subproject Quimiag-Penipe, and (4) Planning and Regional Development Assistance - are described and analyzed in the following sections.

II. DETAILED DESCRIPTION OF PROJECT COMPONENTS

A. IRD Institutional Mechanism

1. Existing Institutional Structure

Ecuador has utilized several IRD models to date in its attempt to address the problems of rural poverty. The most widespread has been the PIDA ("Proyecto Integrado de Desarrollo Agropecuario"). Though not a fully integrated rural development concept, the PIDA has attempted to address all aspects of agricultural production; on an ad hoc basis it has also gotten into interventions in health, education, and other sectors. There are some 21 PIDAs functioning or in advanced planning stages in Ecuador, and both the Salcedo and the Quimiag-Penipe projects have been PIDAs for several years. The PIDA model has been successful in getting a higher level of assistance to its target areas than otherwise would be the case. Its biggest weakness, however, has been its inability to get institutions other than MAG effectively involved. Consequently, MAG in most cases has ended up building irrigation systems, constructing roads, building schools and health posts, installing potable water systems, handling marketing of agricultural inputs, and trying to solve land tenure problems. Given its small budgets as well as lack of expertise in these areas, MAG has been relatively ineffective in providing these services, which by law are supposed to be provided by other institutions.

A second model in use in Ecuador has been IRD projects carried out by regional development authorities. The IDB projects with CREA, PRE-DESUR, and CEDEGE are examples, while two joint CREA-MAG PIDA projects are variations of both this and the PIDA model described above. The regional development authorities have been perhaps more successful than MAG in designing activities which are appropriate for the areas, but the projects have suffered from the same problem described earlier of not getting the necessary support from the other ministries and agencies involved in rural development activities. In response, the regional authorities have attempted to develop their own "in-house" extension, road building, irrigation, research, and health and education capabilities much like MAG in the PIDAs. This in turn has further accentuated the fragmentation, duplication, dispersion, and dilution of institutional efforts in the rural sector.

A third model is that of the Tungurahua IRD project being funded by the IBRD. In the design of the project MAG was designated as the lead institution, with other rural sector institutions given defined roles to play. Participating agencies include ENF, INERHI, MIEOS, the Ambato Electric Utility Cooperation, and the Provincial Government of Tungurahua Province. Coordination is to be effected by two committees at the local level. Though this system fulfills the objective of decentralizing IRD activities, experience has shown that it is difficult to get effective coordination among institutions without a strong national body able to apply pressure and provide guidance and funding. Implementation of the Tungurahua IRD project has been delayed by weaknesses within MAG and by difficulties of the coordination system being used for this project.

Clearly, a fully effective IRD model has not yet evolved in Ecuador. This Project will assist the GOE develop an improved institutional mechanism which can efficiently and effectively be used for all IRD projects. The mechanism will build on the strengths of the various models already in use, while addressing the weaknesses which those models have not been able to deal with. The following subsection describes the mechanism.

2. The IRD Model

a. Description

The IRD model is composed essentially of four levels. At the top is the Rural Development Secretariat, a supra-cabinet level institution which will provide the top level support needed for IRD projects, will assure coordination among all involved institutions, and will manage and assure the financial aspects. If a coordinated approach to rural development is to be successful in Ecuador, experience to date indicates that such coordination can only be brought about by a strong national organization that is not a part of any one functional ministry and which has the political "clout" to bring about coherent and coordinated responses at national, regional, and local levels.

At the next level are the participating institutions (e.g., MAG, INERHI, BNF, MOP, MOH, MOE), which will carry out IRD project components under agreement with the RDS. The next level is the participation of regional development authorities, the respective IRD Project Offices, and analogous organizations, which are needed to coordinate local actions and to bring a local perspective to planning and implementation. Finally, there are the beneficiaries themselves and their organizations, the latter being the essential vehicles for assuring that benefits reach the target group and that the target group is able to participate effectively in the programming and delivery of the development activities affecting them. Each of these levels of the model is discussed separately below.

b. The Rural Development Secretariat (RDS)

The RDS, which will operate either within the Presidency or as part of CONADE, will be the overall planning and coordinating mechanism for IRD. The RDS is also expected to house the Rural Technology Transfer System (RTTS) and the National Rural Training System. These two systems will be closely coordinated with the IRD system, although they will also carry out activities to benefit campesinos outside IRD project areas.

As related to IRD, the RDS will have four principal functions: mobilizing political support for IRD, planning IRD efforts, coordinating and monitoring the implementation of IRD projects, and obtaining and providing the financing for IRD activities. As to mobilizing

political support, the RDS will work closely with the President and his cabinet, and with rural sector institutions, to define priority areas for IRD projects. This will be closely combined with the planning process, for IRD activities will also have to fill economic and other criteria in order to be acceptable for financing. As to coordinating and monitoring the implementation of IRD projects, this will be done by utilizing signed agreements between the RDS and the appropriate implementing agencies, the regional development authorities, and local communities themselves. The financial arrangements will be conducted through an IRD Fund to be located in the Central Bank but to be controlled by the RDS. In addition to the above four functions, the RDS will be responsible for evaluating the national IRD program and for assuring that individual IRD projects are evaluated.

The RDS will be headed by an Executive Secretary, responsible for the Secretariat's actions and for interacting with the Cabinet on IRD policy. He will hold ministerial rank. An Executive Director will be named to direct the day-to-day operations of the Secretariat. A number of technicians (now estimated at about twenty-five), recruited from public sector agencies and assigned to the RDS, will provide technical support. An administrative team supported by RDS' own funds will complete the unit. For each IRD project, the RDS Executive Secretary will appoint a Project Director, who will have full responsibility for the planning, organization, programming, and implementation of the project at the field level. His responsibilities will also include establishing institutional agreements between the RDS and the participating agencies, the appropriate regional development authority, and the local communities.

The RDS will have two units exclusively concerned with IRD projects. One is an IRD planning and evaluation unit, which will establish a data base, analyze GOE policies as related to IRD, design and otherwise plan specific IRD projects, establish general procedures for IRD project monitoring, help in the evaluations of individual IRD projects, and carry out evaluations of the IRD program. The other unit will be directly involved in IRD project implementation and will establish and help monitor individual IRD project activities. Because of the large number of institutions involved and contractual arrangements required, this unit, for administrative purposes, will probably be divided into three subunits, one concerned with the productive aspects of the rural poor, one with social services, and one with supporting infrastructure. In addition to the two units exclusively concerned with IRD projects, two other units will be directly involved with IRD. One is the unit concerned with the national rural training system, which will provide all the training for IRD projects as well as other rural training activities. The other is a financial and administrative unit, which is also expected to support the RITS and other RDS activities. The above is charted graphically in Figure 1.

c. Implementing Institutions

At the IRD project level, a series of institutions will carry out specific activities. These will be spelled out in signed agree-

ments between the individual institutions and the RDS. In order to effectively administer these activities, each IRD project director will have various specialists assigned to the IRD project by the implementing institutions, based on signed agreements. Each local IRD Project Office will be staffed by a multidisciplinary team composed of officers from participating GOE agencies. It is expected that each team will initially include extension personnel from MAG, research specialists from INIAP, a land tenure expert from IERAC, irrigation specialists from INERHI, a marketing technician from ENAC, and a BNF credit officer. This core group will be based on an expansion of the already existing PIDA organizational structure. As complementary IRD components begin implementation, technical personnel from other ministries/agencies (e.g., MOH, IEOS, MOE, INN) will be added to the local IRD Project Office. These specialists will work with the target group through contact agents, as will be explained in detail below. The above is charted graphically in Figure 2.

d. Regional Institutions

Though the existence of a project director and of signed agreements between the RDS and implementing institutions should in theory assure local level coordination, in practice this will not be sufficient. Effective integrated rural development depends heavily on a consensus among all local interests and on having an organization with a vested stake in the area, i.e., on having an organization which both feels that the local people are its constituency and has sufficient structure, prestige, and political importance to deal with problems and delays when they arise. This will be the special role of the regional institutions, during both the design and execution of IRD projects.

As discussed later, Ecuador has several existing regional development authorities covering about half the country. The GOE intends to establish similar organizations in those areas where they do not exist. (The Project will assist in the establishment of one of these, in the central Sierra region where the two AID-financed IRD subprojects will take place). Until then, this role will be taken by the local provincial council ("Consejo Provincial") or by some other existing local body. Once established and/or strengthened, it is expected that the regional development authorities will gradually assume much of the responsibility for identifying and planning IRD projects and coordinating and monitoring local IRD activities, as is now being partially done by CREA, PREDESUR, CEDEGE, and CRM. This role is seen as crucial to the ultimate replication of IRD projects and will be formalized for each project by a written agreement between the RDS and the appropriate regional institution.

e. Local Level

At the local level, IRD projects will utilize a three-component approach to provide the project inputs to the target beneficiaries.

FIGURE 1

IRD AT THE NATIONAL LEVEL

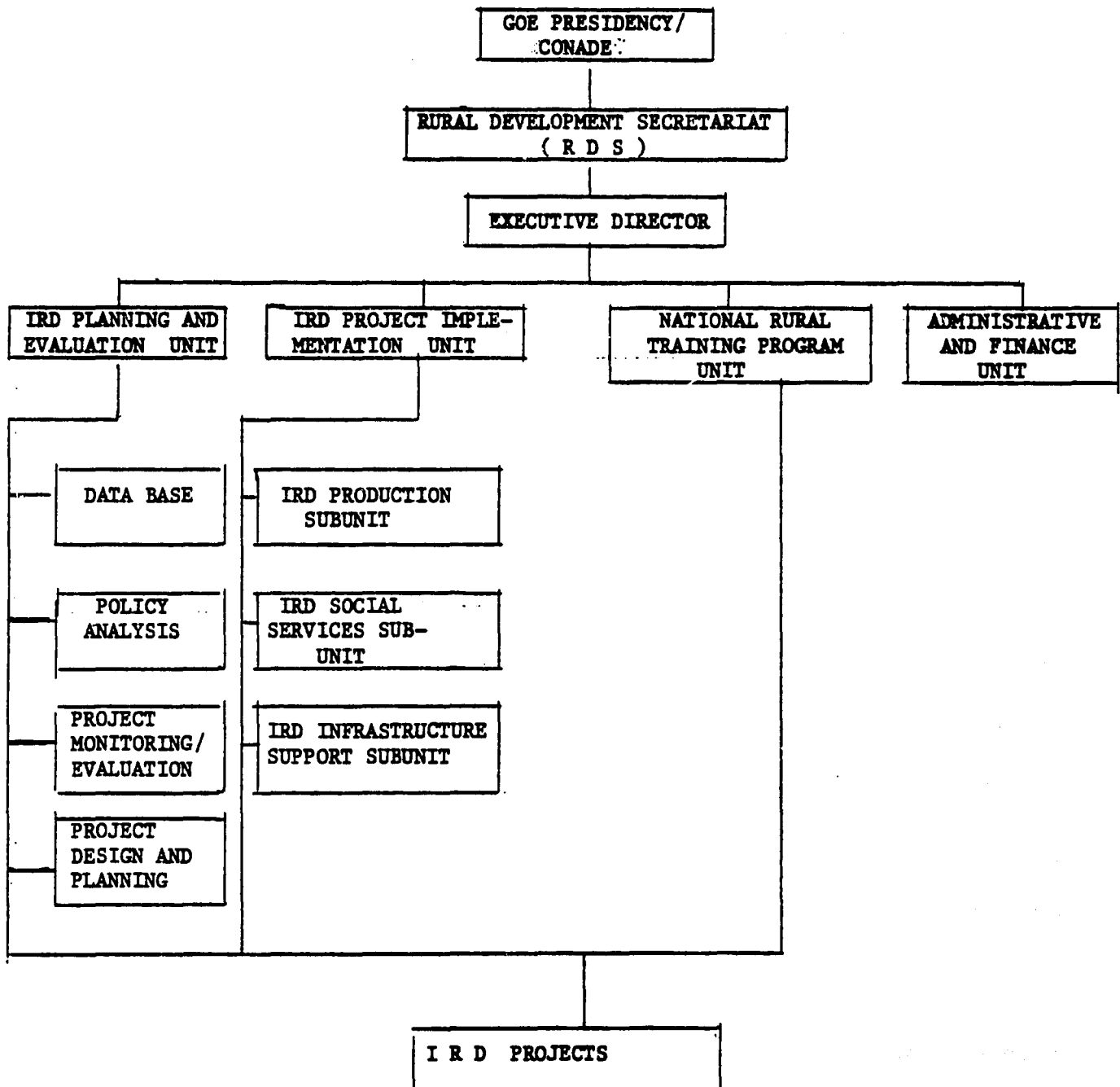
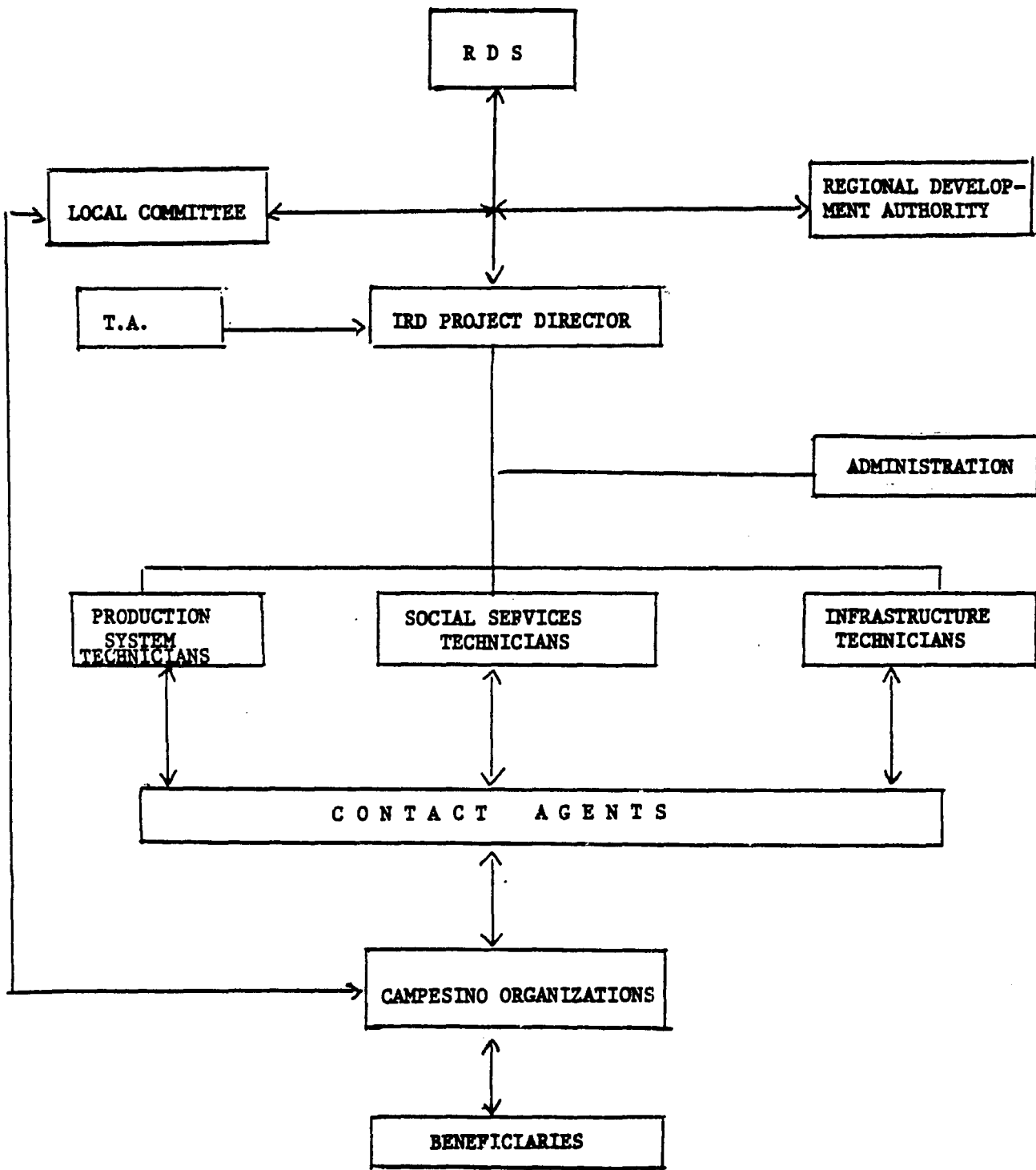


FIGURE 2

IRD AT THE PROJECT LEVEL



One component is the use of small farmer organizations. In most cases in the Sierra, this will be the comuna; while on the Coast, the cooperative or organized comunidad is expected to prevail. Second-level organizations such as associations or federations will also be used when appropriate.

A second component is the use of contact agents. These will usually not be the same as the professionally trained technicians assigned to an IRD project by the participating institutions, but will be lower level paraprofessional or semiprofessional personnel assigned to work directly with certain geographic segments of an IRD project area on all sectoral aspects of the project. The contact agent may work with his/her communities on irrigation, road construction, health services, small animal production, and many other activities, serving as liaison between the communities and the more skilled sectoral technicians. The contact agent may have training as high as the agrónomo or as low as an experienced farmer paraprofessional, depending on the particular project needs. However, whenever possible, all contact agents will be from the local communities being served by IRD projects.

The third component is the establishment of a formal feedback mechanism in each IRD project. The relationship of the contact agent with his/her communities will, of course, engender feedback, but a more formal mechanism is needed to assure organized campesino input into major decisions affecting them and to enable small farmers to voice complaints and receive information. This feedback mechanism will be centered around a local committee, composed of representatives of small farmer organizations (e.g., comuna presidents) as well as the local representatives of the various participating agencies. The IRD project director will attend the committee's meetings but will not be a member..

In addition, each comuna or comunidad being served by an IRD project will develop a formal evaluation system of the IRD actions being undertaken by individual technicians and/or participating agencies. Such a feedback system is already being utilized on a limited basis in several rural development programs that involve coordinated inputs from different GOE agencies and technicians. Through this system, local communities rate the performance of individual technicians or participating agencies on a monthly basis, and these ratings are posted at a central public location within the community (usually on the wall of the community center). With such reports, the IRD Project Director, through periodic inspection trips, can quickly capture the overall performance of the project staff and take corrective action. Such a feedback system, combined with regular consultations with comuna presidents and the selection of contact agents from local communities, should ensure adequate mechanisms of community participation in the planning, monitoring, and delivery of IRD project resources.

f. Linkages

The above four subsections describe the components of the IRD model which this Project expects to institutionalize. The model will be utilized in the two IRD subprojects to be financed under the Project, as well as made part of other subprojects to be planned. Essential, of course, to the working of the model is a series of linkages among its several components. These linkages should be self-evident from the above descriptions and from Figures 1 and 2. In summary, it is a fully integrated system. The RDS is linked from the highest GOE decision makers directly to the individual IRD projects. Also, as will be described in the following subsection, the RDS' IRD Planning and Evaluation Unit will interact directly with small farmer groups in the design of IRD projects.

At the IRD project level, linkages are present at all levels. The IRD project director and the IRD project support staff of technicians will interact with small farmer organizations through contact agents, and the organizations will feed back their desires and complaints through their contact agents, through the formal local committee, and through community evaluations of the project staff. The local regional development authorities will also have linkages with both the RDS and with the respective IRD project directors, so as to be able to effectively lend support to IRD projects under their jurisdiction.

g. Participatory Strategy

The IRD model establishes flows of goods and services from participating organizations to the small farmer target group, and for feed-back from the small farmer to the participating organizations. As described above, the crucial linkage for both of these to happen is that between contact agents and small farmer organizations. Also, the local committee will serve as a more formal mechanism for small farmer participation.

Two important means to effect maximum small farmer participation will be community participation in the planning process and the use of written community agreements, similar to those between the RDS and the participating institutions. During the planning stages of an IRD project, the design team will have a series of meetings with each small farmer group in the area, in each case with the small farmers encouraged to state their opinions and aspirations. In every such meeting, however, it will be made clear that there will be a limit on what can be provided and that local participation in the work and provision of resources for project activities will be required. At these meetings, the small farmers will be asked to elect representatives of their groups; these representatives will then participate with the design team on some of the more detailed aspects of planning for the project. A participatory process similar to but less extensive and formalized than the above was followed in the design of the two IRD projects to be financed under this Project; the process will be formalized as these IRD projects go into the final detailed design stage. The above process will also be followed in the various IRD projects yet to be designed.

Once an IRD project is fully designed, the IRD project director will enter into a signed agreement with the comuna, cooperative, or other community unit. The agreement will specify the responsibilities and resource commitments of the community to the project. It will also lay out in detail all project activities and targets. Community representatives will meet at least quarterly with the IRD project director and the participating institutions' technicians to review progress to date.

Though the use of written agreements may appear to make the IRD projects rigid, the intent is precisely the opposite. Both the GOE and USAID intend that the model be flexible and permit a number of innovative approaches to IRD. For example, in one IRD project the use of mid-level contact agents to work directly with beneficiary groups may be programmed; in another, higher level contact agents could be used, to be assisted by quickly trained local promoters. In one IRD project the consistency of the local committee could be different from that in another project. In one IRD project exemplary farmers could be hired as demonstration agents, while in another, more traditional methods might be used. In short, many variations of the details are possible, and it is expected that several different participatory models will be tested and evaluated to determine what works best, why, and under what conditions. The purpose of the agreements is to assure that there is a good understanding and concurrence by all parties about what will be taking place.

h. Training

Training will be an essential part of the IRD model. It will have three principal elements. One will be training project level technicians. Some of this training is expected to be in technical areas. For example, a person might be an expert in large scale production of a certain crop, but may have to learn the best techniques for producing the same product on a smaller, nonmechanized scale. Or a technician who is some years out of school may need to brush up on the latest techniques in his/her field. Other training will be to teach technicians how best to deal with small farmers. These may include communications techniques, the basics of community development theory, the indigenous language of the area, and the basics of rural sociology.

The second type of training will be directed toward the contact agents. Depending on their educational background (for this group may include individuals as disparate as experienced agrónomos versus uneducated local farmers), these individuals will have to be taught a variety of technical subjects (ranging from pruning fruit trees to rebuilding latrines). They will also be given orientation to the IRD model, their roles in it, and how to obtain technical expertise and other assistance in specialized subject areas beyond their personal expertise. The contact agents will also be trained in communications techniques, group

dynamics, and other subjects they will need to effectively deal with small farmer communities.

The third type of training will be directed toward the small farmer beneficiary himself. It is here that a number of different and innovative techniques will be used, including training manuals, videotape recordings, simple leaflets, radio broadcasts, posters, slide presentations, field demonstration days, community meetings, and one-to-one contacts. * Annex D provides additional details on this training.

The RDS Training Unit will design project-specific/training modules for each type of training within each IRD project. The modules will be based on specific need assessments to be conducted together with the group to be trained. As far as conducting the training, the Training Unit, in concert with implementing institutions, local universities, and TA advisors, will carry out the training for the technicians. The IRD project director and the technicians will train the contact agents. And the contact agents, together with the technicians, will conduct most of the campesino training. Some of the latter may also be done by the RDS Training Unit under some of its broader programs, such as campesino leadership training at organized training centers. Assistance to the RDS Training Unit will be provided through a DSB/ED regionally funded project, as described later, and in Annex D.

3. Implementation Details

a. Financial

The IRD Fund will be located in the Central Bank. Control of it will rest strictly with the RDS. It is expected that large expenditures, whether transfers (e.g., to INERHI to pay some of the costs of an irrigation canal) or cash expenditures (e.g., to an outside contractor), will be made only by the RDS. The project directors for individual IRD

* In the 1960s and early 1970s, USAID developed and implemented two grant projects whose primary purpose was to develop approaches or technologies for encouraging campesinos to define their own problems and to facilitate their participation in the solution of these problems. The Campesino Leadership Project and the Rural Non-formal Education Project were particularly successful in developing a series of innovative technologies for training campesinos and for working with "Community Facilitators" or contact agents. A number of excellent impact evaluations at the target group level exist on these projects, and they will be used for implementing the IRD Project. The success of these projects was limited because they focused almost exclusively on the demand side of the problem (i.e., helping campesinos to articulate their own problems), and they did not concern themselves with the supply side of the problem (i.e., delivery of resources and services). Evaluations indicate that these projects were very successful in getting campesinos to define their problems, but once defined, the supply system was not usually in a position to deliver resources and services. This often led to disillusionment and further alienation at the community level. The IRD Project proposed herein will deal with both the supply and demand side of the problem.

projects will be able to draw on the account for smaller expenditures (the amount to be determined on a case by case basis) within certain guidelines.

A number of accounting arrangements will have to be made given the nature of various institutions' financial requirements. For example, AID may disburse directly to a supplier and charge the amount against a subproject. Or one of the participating institutions may provide its counterpart contribution in-kind rather than through a monetary transaction.

The IRD Fund is expected to combine resources from many sources. AID, for example, plans to finance at least two IRD projects on a multi-phased basis by sectoral activity. The Project proposed herein will finance interventions closely related to agriculture. Follow-on projects will finance health, potable water, nutrition, forestry, soil conservation, nonagricultural employment, and educational activities in at least the same geographic areas. GOE counterpart will come from central government budget allocations as well as certain support from the participating institutions. Other donors desiring to finance IRD activities will be expected to do it through the IRD Fund.* In short, while being a firmly established financial mechanism, the IRD Fund must have procedures which allow it to operate among a variety of disparate financial sources contributing for different IRD activities. The establishment of the Fund and its operating procedures will be a condition precedent to first disbursement of assistance for this Project for all AID funding except technical assistance.

b. Administrative

Most administrative arrangements will be conducted and managed at the IRD project level, based on procedures developed at the central (RDS) level. The RDS will also have a basic oversight and auditing role to assure that the administration of the individual IRD projects is proceeding smoothly.

The RDS' Administrative and Finance Unit will prepare guidelines, procedural manuals, and the various forms to be used in IRD projects. Many of the procedures will be quite detailed. For example, all contact agents and field technical personnel will have detailed daily activity sheets, which will require the signatures of farmers visited or the heads of small farmer organizations worked with. The purpose of this procedure, however, is not to create unnecessary paperwork nor impose rigid and counterproductive controls on extension personnel. It is, rather, to assure that extension actions taken are as planned and meet with the approval and understanding of the beneficiary groups. Likewise, the Administrative and Finance Unit will try to assure that every procedure has a good reason behind it, thus keeping paperwork to a minimum.

*. GOE officials have informed USAID that the RDS will assume monitoring responsibility for all IRD projects currently under implementation in Ecuador.

Each IRD project will have its own local administrative staff, likely limited to several clerical and accounting level persons. They will take care of all day-to-day paperwork, plus will be in charge of disbursing for per diem and other small expenses at the project level. Most paperwork will remain at the project level, with a few monthly summaries being forwarded to the RDS.

c. Evaluation

The IRD Planning and Evaluation Unit in the RDS will conduct evaluations of the entire IRD program. These evaluations will use as data the results of individual IRD projects as well as other information. More details on these overall evaluations are presented in Section IV. B.

Each IRD project will be evaluated by the local project team, with the assistance of the Planning and Evaluation Unit. An objective is to utilize simplified data instruments which the rural poor can themselves use to collect and have at their disposal information which will be useful both for the project and for them. Two such instruments are contemplated. One is a system whereby farmers collect their own data on yield, production costs, and net income for selected individual crops and animal types. A second is to have mothers plot the weight-for-age of their pre-school children, thus monitoring their nutritional status on a monthly basis. Together these two instruments should allow the progress of the projects to be charted, plus have a distinct utility for the target group. The procedures for obtaining these measurements will be outlined in the agreements between RDS and the communities; and a considerable part of the contact agents' time is expected to be taken up in monitoring and assisting with this on-going evaluation procedure.

4. Technical Assistance

In order for the contemplated IRD system to work effectively, considerable TA for institution-building and strengthening will be required. As stated above, the basic purpose of this Project is to build a better institutional mechanism and system for serving the rural poor, and funding for TA costs will be vital for ensuring the success of this objective. Technical advisors, supporting studies, equipment, and other related inputs for assisting the GOE build its new IRD mechanism, for implementing the Quimiag-Penipe and Salcedo IRD subprojects, and for planning at least one other IRD project will require approximately \$2,548,000 in AID funding (See Table II.1). \$1,838,000 is proposed for grant funding (see Part III, Section E for a detailed justification for grant funding) and \$710,000 will be loan funded. In addition, supporting TA from other AID projects will deal with specific requirements. For example, the Rural Technology Transfer (Title XII) System Project will finance the development and testing of small farmer technological packages required within the IRD target zones. The Training for Development Grant will strengthen the management capacity of IRD implementing agencies. And a DSB/ED project will assist the RDS develop and implement its rural training system.

Technical assistance will be directed at three levels: the RDS, in order to enable it to effectively plan, monitor, and otherwise support IRD projects; the regional organizations, to enable them to properly carry out their unique supporting role; and the individual IRD projects themselves, so that successful implementation will lead to institutionalization of the model. Though directed at these three different levels, all TA will be coordinated by and channeled through the RDS.

a. Technical Assistance at the National Level

AID's technical assistance to the RDS will be coordinated closely with complementary assistance being provided by other donors. FAO has recently signed an agreement to provide limited assistance to the central IRD mechanism in IRD policy analysis, IRD project design and planning, technical aspects of crop production and marketing, and rural education. IBRD has had an on-going loan-funded TA project for some time with the Rural Planning Unit (UNDER) of the former National Planning Junta (JUNAPLA). UNDER has already passed to CONADE and is expected to be part of the RDS. The TA is also in IRD policy analysis and IRD project design and planning. AID intends, therefore, to concentrate its TA in aspects not covered by the other donors' assistance, particularly IRD management and evaluation.

A careful review of the RDS' technical assistance needs, taking into account the other donors' assistance, reveals the following gaps where AID assistance will be required: (1) in IRD administration and operations, including the preparation of operations manuals; two person-years of TA will be supplied under the Project; (2) in IRD information systems and data processing; two person-years of TA will be supplied under the Project, plus \$100,000 will be allocated for the purchase of a mini-computer data and word processing system; (3) in evaluation and monitoring systems for IRD; 2.5 person-years of TA will be supplied under the Project; and (4) in IRD financial administration; 1.5 person-years of TA will be supplied under the Project. Three hundred thousand dollars, loan funded, will be made available to the RDS from the Project for equipment and vehicles, including the mini-computer system mentioned above. Three hundred thousand dollars will also be made available for bringing in short-term consultants as needed, financing attendance at seminars, providing training for RDS personnel, and other similar activities. One hundred sixty thousand dollars will be made available to the RDS to help it carry out planning and evaluation activities, particularly of the two IRD projects to be financed under the Project. In total, \$1.4 million of AID funds will be made available for supporting TA activities to the RDS, including eight technician years of services and \$760,000 in other funds. In addition, approximately nine technician years of services will be provided the RDS from the AID centrally funded Rural Training Project, and up to 10 from the other AID projects making up the IRD Program.

b. TA at the Regional Level

The regional development organizations will play an important coordination and consensus achievement role during both the planning and implementation of IRD projects. They will be critical for ensuring IRD replicability. As indicated earlier, some regional development authorities already exist; one of these--CRM in Manabí--will be the subject of assistance in this Project as it is the regional authority for the area encompassed by the subproject to receive planning assistance under the Project. Some other areas of the country (e.g., the central Sierra) do not have regional development authorities, but their creation is being proposed. Until then, provincial councils are typically serving that role. The area within which the two IRD subprojects to be funded under the AID Project fall, i.e., the central Sierra, is an area which currently has no regional development authority. The GOE is proposing that the area--composed of four central Sierra provinces (Bolívar, Chimborazo, Cotopaxi, and Tungurahua) and currently designated Region 4--develop such an authority.

Under the Project, AID assistance will be provided to CRM and to the new Region 4 development authority once it is created. The assistance will be in administration, operations, project management systems, project identification, and project planning. This will total about 0.6 person-years of TA. The Project will also finance survey costs, certain local expenses, and some limited equipment and vehicles to these organizations. This assistance will be approximately \$128,000. Until the Region 4 development authority is created, or if it appears that it will not be created, some or all of the assistance planned for it may be channeled instead to provincial councils or to other organizations assuming the regional role.

The Jipijapa IRD project, to be planned by CRM under the guidance of the RDS, will require primarily survey and study costs. Also, a small amount of test interventions will be undertaken. The total amount of Project funds allocated for the entire planning activity is \$240,000, divided between loan and grant financing. The Project will also make available \$180,000 to the regional institutions for undertaking other IRD project planning.

c. TA at the Project Level

The TA needs have been carefully assessed for the two IRD projects to be financed under the Project. All such TA will be supplied to an individual IRD project through the RDS, though the technical advisors will interact on a daily basis with the respective project director or project planning director.

Each of the two projects to be financed will have a technical advisor for 2.5 person-years in project management, plus an irrigation specialist for about one year. The costs under the Project for these TA advisors will be approximately \$560,000. Each IRD project will also receive three person-years of TA services in training and community development under the centrally-funded AID rural education project. In addition, each IRD project will receive TA in specific sectoral areas as nutrition, health, potable water, rural enterprises, forestry, soil conservation, and rural education from other AID projects which will form part of the IRD program. Also, since some of the activities under the Rural Technology Transfer System (Title XII) Project are expected to be located in IRD areas, some TA will be obtained from this source. Vehicles, equipment, and materials for implementing the individual IRD projects are not included in this discussion and are described under the subproject descriptions.

TABLE II.1.
Technical Assistance and Related Items
(From Proposed Project Only)
(US\$ 000 except where specified)

<u>Item</u>	<u>AID Financing</u>		<u>Technician</u>	<u>GOE</u>
	<u>Grant</u>	<u>Loan</u>	<u>Years</u>	<u>Counterpart</u>
A. TA to the RDS:				
1. Administration, Project Management Systems	160		2.0	208
2. IRD Information Systems, Data Processing	160		2.0	208
3. Planning and Evaluation of IRD Projects	360		2.5	380
4. Financial Administration	120		1.5	350
5. Consulting Fund, Seminars, Short-term Training	50	250		190
6. Equipment and Vehicles		300		212
B. IRD Planning and Regional TA:				
1. Administration and Institutional Support	128		0.6	128
2. Planning of Jipijapa IRD Project	80	160		240
3. Planning of other IRD Projects	180			180
C. TA for Subproject Implementation:				
1. Project Management Advisors	400*		5.0*	
2. Irrigation Specialists	160*		2.0*	
3. Local Travel and Logistic Support	40*			
Totals	1,838	710	16.6	2,096
Totals excluding * Items	1,238	710	9.6	2,096

NOTE: The asterisked items (*) are also counted in the budgets for the individual subprojects, Section II. B. To avoid double counting, for those adding the tables together, use the total excluding asterisked items.

TABLE III. 10(A)
ESTIMATED PROJECT COMMITMENT/DISBURSEMENT PLAN
(U.S. \$000)

<u>Fiscal Years</u>	<u>RDS Assistance</u>			<u>IRD Planning</u>			<u>Salcedo</u>			<u>Quiniag-Penipe</u>		
	<u>AID</u>			<u>AID</u>			<u>AID</u>			<u>AID</u>		
	<u>Loan</u>	<u>Grant</u>	<u>GOE</u>	<u>Loan</u>	<u>Grant</u>	<u>GOE</u>	<u>Loan</u>	<u>Grant</u>	<u>GOE</u>	<u>Loan</u>	<u>Grant</u>	<u>GOE</u>
1980	--	50	100	--	---	---	--	25	---	--	25	---
1981	200	350	200	60	100	100	400	70	500	300	70	600
1982	250	350	400	100	188	200	700	70	900	1200	70	1200
1983	100	100	400	--	100	248	1100	70	1300	1500	70	1900
1984	--	--	448	--	--	--	788	65	1023	1151	65	2284
Total	550	850	1548	160	388	548	2988	300	3723	4151	300	5984

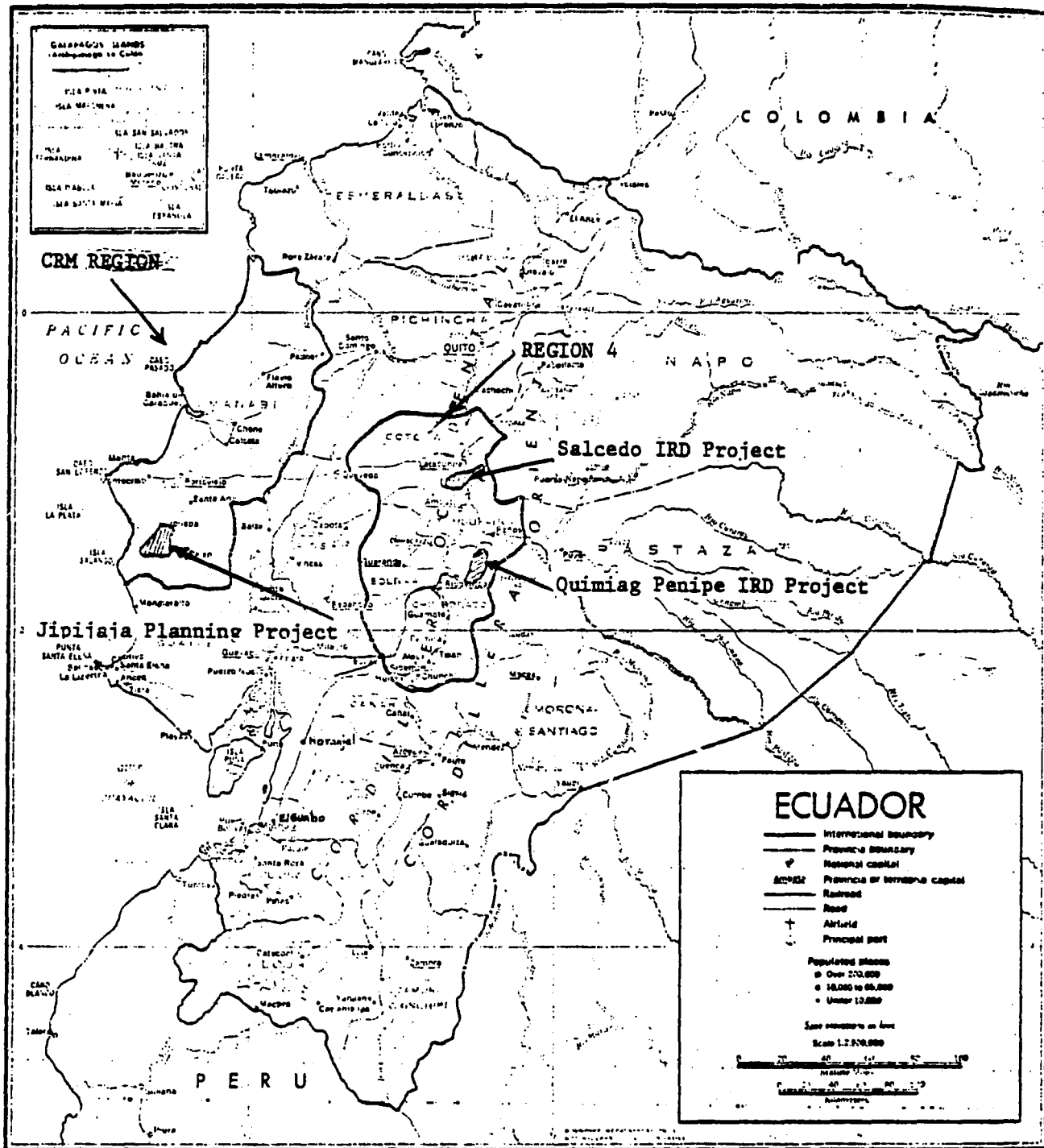
B. The IRD Field Level Activities

1. Introduction

An integral part of assisting the GOE build its new IRD mechanism will be the provision of financial and technical assistance for implementing two IRD projects located in the central Sierra (Region 4) and for planning one IRD project in Manabí (a coastal province). The projects and regions are shown on the map on the following page. The new IRD mechanism cannot be built as an abstract planning concept or copied from other countries--it must be learned and developed through implementation and planning under different Ecuadorean conditions. Thus, field level IRD implementation and planning activities should be seen as a fundamental part of the institution-building process being supported by AID.

The field level IRD projects being proposed for implementation under AID financing are high priority GOE efforts included in its National Development Plan. They were selected as a result of an intensive joint review with the GOE of some 17 IRD project sites in various stages of planning. The two sites selected--Salcedo in Cotopaxi Province and Quimiag-Penipe in Chimborazo Province--were chosen for several reasons. The most compelling reason was that they are unquestionably in one of the areas of Ecuador with concentrations of severe rural poverty. Another reason for selection was that both projects had been previously selected by MAG for its PIDA program and that the planning and data-gathering for the projects had already reached the advanced stage. Moreover, Ministry and IICA technicians familiar with the area could be mobilized quickly to form a team with USAID to complete the detailed planning necessary for the preparation of this Project Paper. A third reason for selection was the fact that the project areas were in different provinces in the same region, thus facilitating working towards the regional development model envisioned in the IRD model.

A fourth reason for selection was that while both sites were in the central Sierra, there were enough differences between them to expect distinct learning experiences for the purposes of RDS institution-building. The Salcedo area is more predominantly Indian than the Quimiag-Penipe area. The farmer and community organization methods and practices will have to be tailored carefully to these diverse cultural traditions. Another difference is that the population of Quimiag-Penipe is more occupied in farming for basic income generation than the people of Salcedo. Finally, the nature of the irrigation activities planned for each area differs. The Quimiag-Penipe project involves the more traditional INERHI emphasis on bringing more water into the area. The Salcedo project focuses to a greater extent on the management of the water within the system and the exploitation of small-scale systems using ground water.



The similarities and differences are further detailed in the description of the two IRD projects that follow below. As indicated in the CDSS and elsewhere in this Paper, the AID inputs provided under the Project are largely directed at increasing the agricultural production capacity of the target group through coordinated activities in irrigation, credit, extension and adaptive research, marketing, land titling, and road improvements. Assistance directed at farmer and community organization is also included. However, major inputs directed at provision of social services such as health and nutrition, protection of natural resources and reforestation, and promotion of rural enterprises must wait for future AID projects tentatively programmed for these purposes.

2. The Salcedo Integrated Rural Development Project

a. The Project Setting

The proposed Salcedo IRD project is located in the Cantón Salcedo of Cotopaxi Province. Located 110 Km. south of Quito on the Pan-american Highway, the cantón incorporates the town of Salcedo and the parishes of Cusubamba, Mulalillo, Holguín, Mulliquindil, and rural Salcedo. The total land area of the Salcedo cantón is estimated at 40,000 hectares. Within this area, the project's target population is over 98% of the total farm families working 9,036 hectares.

The cantón has a population of 35,400. Approximately 8% live in the town of Salcedo and can effectively be considered urban. The remaining population, living in small villages and on dispersed farms, are considered rural. Almost all of the rural families are involved in farming. Measured in terms of the economic and social welfare of the families residing in the project area, the area is socially and economically depressed. According to a recent USAID study on rural poverty in Ecuador, the project is located in one of the two poorest provinces of the country (the other being Chimborazo). Using such variables as income, degree of minifundio, infant mortality, availability of water, and availability of electricity, the Cantón Salcedo ranked among the lowest in Ecuador (90th out of 94 cantones studied).

As can be appreciated in Table II.2, the area is characterized by extreme minifundio. Although the average farm unit is about 2 Ha., a majority of the farms of under 5 Ha. actually have less than one hectare. Land tenure is relatively insecure for these smallest of farms. Thirty-one percent of the farms of less than one hectare are being worked under some form of rental or share cropping arrangement, and much of the owned land does not have clear title.

TABLE II.2.

Salcedo's Land Tenure Patterns

<u>Farm Size</u>	<u>Total N° Farms</u>	<u>% Land Owned</u>	<u>% Land Rented</u>	<u>% Land in Other Tenure</u>
0- 1	2,768	69	17	14
1- 5	2,162	89	5	6
5-10	409	97	1	2
10-20	36	87	6	7
20-50	22	96	3	1
50-100	14	93	1	6

Total 5,411

Total 0-10 Ha. = 5,339

SOURCE: Salcedo Diagnostico

The climate of the region is variable, depending on the altitude. In the lower areas of the Salcedo Cantón (2,600-2,800 meters), the climate is temperate and rainfall limited. The higher elevations are cooler and wetter, but with more natural limitations (frost, hail) for agricultural production. Soils are generally of volcanic origin. However, because of topography and land use patterns, soil conservation measures must be taken and soil fertility improved in order to fully exploit the area's agricultural potential. At present, improved pastures cover more than 4,000 Ha. of the Cantón, and natural pastures an even larger area. Barley, corn, and potatoes are the most important uses of cultivable land, with smaller areas being devoted to wheat, beans, and some vegetables and fruit trees. Peaches and apples are the most important fruits found in the project area.

Markets and market channels are simple, except for potatoes, which are graded before sale. Storage of other products is on the farm, and sales are made on an individual basis in nearby towns, where buyers gather on market days. Some pre-harvest sales are made to local buyers; otherwise, sales are made at harvest time for cash. In the absence of price information, small farmers are often forced to accept whatever prices are offered. Fruits produced in small quantities are sold mainly to outside buyers. Prices received for fruit are low because of poor packing, handling, grading, and varieties. Most barley is sold to local users for animal feed. Eighty percent of the area's milk production is sold to INDULAC (a large dairy products processor) and is picked up from

medium and larger farms by the corporation's trucks. Animals sold for meat are taken mainly to Quito, regional cities, or to the Coast.

Irrigation water is limited within a large part of the project area. Although INERHI has just completed with IDB financing the Latacunga-Salcedo-Ambato irrigation canal, which will serve a small part of the project area, most of the target group families do not have access to a secure source of water. Even the scarce water supplies which do exist in the area are not fully utilized because of unlined canals and ditches, inefficient diversion works, and an almost total absence of on-farm water infrastructure (e.g., leveling, interior drainage).

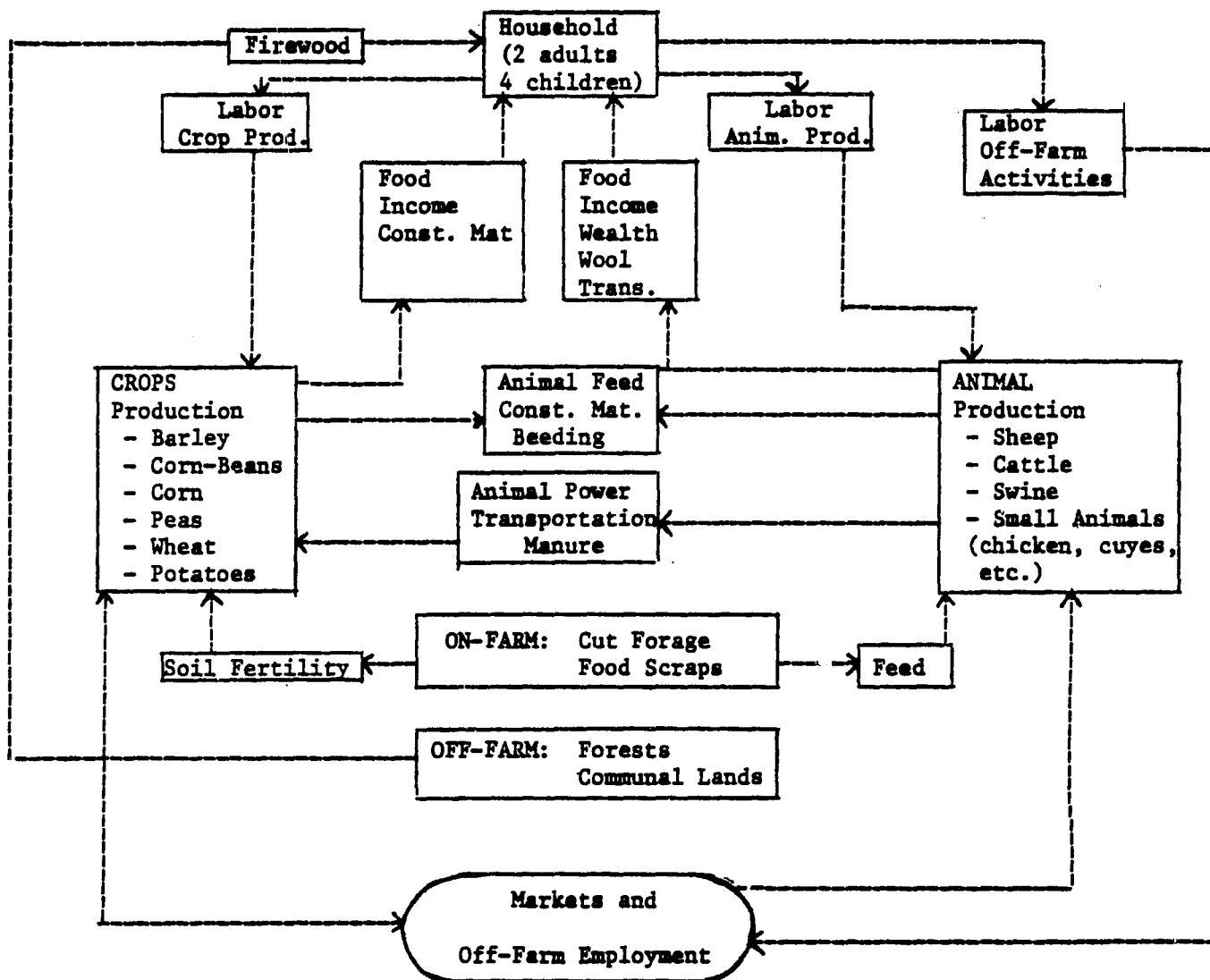
The physical and social services infrastructure is limited and in some areas nonexistent. Access roads are often closed because of landslides and mud during the rainy season and because of generally poor maintenance. In the area of health, no integrated programs of health delivery, including preventive health, exist in the Salcedo project area. The only services are 12 traditional subcenters and posts located in several comuna and parroquia centers. The number of doctors, nurses, and other medical personnel available is low compared with the size of the population. In the entire cantón there are only eight doctors and one nurse. Various parasite diseases, tuberculosis, dysentery, and typhoid are common. Potable water and sewer disposal facilities are lacking even in the more urbanized centers of the project area. Electricity is also limited. Salcedo is the only town within the cantón with a constant source of electrical power.

Within the project area there are 50 elementary schools and 4 secondary schools, serving approximately 6,260 elementary and 923 secondary level students. The high drop-out rate from primary schools in the area is typical of rural areas of Ecuador. Some adult education programs exist at the community level and reach 450 to 550 individuals. However, the percentage of illiteracy among the adult population is high. Communication services include a radio station. A community center (casa campesina) is operated in Salcedo by the ecclesiastical authorities and is aimed at assisting development in a social religious context.

b. Target Group Profile

There are a number of common features of the typical target group household in the Salcedo project area. As shown in Figure II.3, the profile is one of sub-subsistence farming. Over 90% of the total agricultural production is consumed on the farm. The area cultivated averages around 2 Has., with cultivation done by hand or animal power. Off-farm employment actually is the primary real source of family income. Men migrate on a weekly basis to Quito, Guayaquil, and to the neighboring small cities of Latacunga, Ambato, and Riobamba in the hopes of securing off-farm employment. The women and children are left behind to carry on the major on-farm tasks.

Figure II.3: Typical Target Group Profile in Salcedo Project Area



Within the cropping system found in Salcedo are such crops as barley, corn, beans, peas, wheat, and potatoes. Corn is the primary crop, but because of the time needed to reach maturity (nine months or more depending on variety and altitude), it is often intercropped with beans or peas. It is important to note that although such crop production does not take place in a commercial sense, it provides animal feed, food, and income and is critical to overall family survival.

Livestock on a typical farm might consist of a pig, two or three sheep, a cow, and a variety of small animals (e.g., chickens, rabbits, guinea pigs). The animal production aspect provides food, income, savings, wool, and transportation to the family household. Feed for the animals is obtained from cut forage (corn leaves), communal grazing lands, and food scraps.

Because of their high cost and/or lack of accessibility, modern inputs are not utilized. Animal and crop residues are the only source of improving soil fertility of the land. Topography is a limiting factor; nonetheless, terracing and other methods of soil conservation are not practiced. Indeed, soil erosion is a serious problem for the small farm family in Salcedo. And with increasing population pressures on the land, firewood for fuel is also a serious problem affecting the livelihood of the Salcedo small farm unit.

Women and children are involved in both livestock and cropping enterprises. As indicated in Table II.3, the share of total household labor actually utilized in farming is low. Those farm units with less than one hectare occupy only 2.7% of total family labor in farming. The rest is dedicated to other activities (both on farm and off). Although the labor utilization rate increases with farm size, the typical target group family (up to 10 hectares of land) utilizes only from 2.7% to 29.2% of household labor in maintaining its subsistence farm. In essence, farming for the target group is only a part-time occupation.

TABLE II.3.

Salcedo: Estimated Availability of Family Labor
and its On-farm Utilization

Annual Total*	Share of Annual Total Utilized %			
	0-1 Ha.	1-5 Ha.	5-10 Ha.	10-20 Ha.
<u>Labor Available</u>				
480 Person Days	2.7%	15%	29.2%	73.5%

* Assumes 200 available work days per person
Father 1; Mother .7; 2 Children x .35 = 2.4 x 200

An analysis of sources of income confirms this last assertion. In Table II.4, the levels and sources of income are given according to farm size. As can be appreciated, the family household with less than one hectare derives 88% of the total income from off-farm sources. In fact, off-farm income is significant for all farm units up to 10 hectares*.

TABLE II.4.

Estimated Sources of Per Capita Incomes for Target Group - Salcedo IRD
Project
(US\$ per capita)

Farm Size	F a r m I n c o m e				
	Total	Value of own Consumption	Livestock Income	Cash Crop Sales	Off-Farm Employment
	\$	\$	\$	\$	\$
0- 1	132	16.0	-	-	116.0
1- 5	170	34.2	27.1	43.0	67.7
5-10	190	60.0	40.0	54.0	36.0
10-20	350	25.0	170.0	140.0	15.0

SOURCE: Salcedo PIDA Documents.

The subsistence household in the Salcedo project area will continue to live in a state of perpetual poverty unless a rural development strategy is implemented taking into account the complexities described above. To make the Salcedo small farm viable, technological and institutional changes are necessary, with such changes, the small farm unit, has the potential for improving the nutritional standard of the household and at the same time for creating a marketable surplus. The crop and animal combination can be improved to increase production, income, and nutritional value. In the subsection that follows, those institutional, economic, and social constraints that will have to be overcome will be discussed.

c. Constraints to Production

In Part I of this PP a general overview of the on-farm, market, institutional, and social constraints affecting the rural poor in Ecuador was presented. The target group families of the Salcedo IRD project are among the poorest of the rural poor; the effect of farm size,

* Using the Congressional standard of US\$150 (1969 prices) converted to 1980 prices (US\$320), those farm families in the project area with up to 10 hectares fall well within the definition of poverty, including off-farm sources of income. Many families in the 10 to 20 hectare category also fall within the definition.

limited access to land, lack of credit, lack of irrigation water, inefficient marketing systems, inadequate access roads, institutional weaknesses, cultural insensitivities, and lack of social services are felt as much or more in Salcedo as in other areas of rural Ecuador. The following analysis will concentrate on the most critical factors affecting small farm development specifically in Salcedo.

Water is perhaps the most critical factor limiting small farm development in Salcedo. Rainfall is irregular, irrigation ditches do not satisfy total water needs, irrigation works above 3,600 meters elevation do not exist, ditches are unlined, reflow systems are seldom employed, and during the past few years the area has experienced unusual drought conditions. These factors not only affect the existing productivity of the small farmers but also limit their potential to intensify agricultural production. INERHI has irrigation plans for a part of the project area, concentrated in the valley portions on either side of the Panamerican Highway. Four INERHI projects overlap into this section of the target area. The first, Latacunga-Salcedo-Ambato, is an IDB financed project which is nearing completion. The Chaupi-Palama canal is in the early planning stages and will eventually cover a portion of the eastern valley. The third, Nagsiche, lies to the west and will cover approximately 1,500 Has. The Dávalos-Chiriboga canal is completed, but the distribution system is lacking. However, even with these projects, most target group farms lie outside the reach of secure water supplies, though some could be served from the above systems.

An equally important constraint is the utilization and distribution of the land base. The land tenure system in the project area influences the utilization of land, water, labor, and capital and has undoubtedly retarded the adoption of new, more productive inputs. The minifundia families which constitute the project's target group have had almost no access to additional land resources. This, coupled with lack of technical assistance, product markets, credit, and irrigation water, has resulted in the small farm problem described earlier. It has resulted in underemployment and out-migration among the labor force available in Salcedo.

The rural poverty problems in Salcedo must also be attributed to the institutions which are responsible for the provision of public services. In the area of agriculture, those institutions responsible for research and extension, for example, have not been effective in dealing with the small farm problem. Lack of institutional focus, lack of financial and human resources, and at times cultural indifference have all contributed to their inability to effectively deal with the multifaceted production problems of the small farmers.

Still another constraint affecting agricultural productivity in the Salcedo project is the managerial capacity of the small

farmer. For centuries the small farmer worked the land under the huasipungo system where he simply provided his labor for the right to till a piece of marginal land. Important production decisions were left to the patrón, and he simply obeyed. Since the abolishment of this system, the small farmer has been put in a position of having to make resource allocation decisions on his own without the necessary experience or information. Obviously, improvements or changes in agricultural production and productivity cannot be accomplished without the managerial skills to make appropriate decisions concerning the allocation of resources in agricultural production.

The above represent the most important constraints affecting small farmers in the Salcedo area. Addressing the constraints of lack of water, lack of access to land, lack of modern inputs, institutional weaknesses, and lack of technical information and managerial skills is the focus that the Salcedo IRD project must take.

d. Proposed Project Elements

There are two focuses of IRD project activities. First is on those interventions which will have an almost immediate impact on the productivity and incomes of the target group. The Project will emphasize this area, particularly as related to agricultural production. A proposed FY 1982 project will address the nonagricultural aspects of productivity and income while a proposed FY 1981 project will address forestry and soil conservation. The other focus is on those intervention which are considered "social", which have a short-run impact on the well-being of the target group but only a long-run, indirect impact on productivity and incomes. Only a small amount of these social interventions will be covered under this Project. Most will be covered under a FY 1981 Health, Potable Water, and Nutrition Project and under other future AID projects.

(1) Interventions Having a Productivity/Income Impact

The project will integrate interventions in irrigation, credit, technical assistance, marketing, land titling, and community organization. The objective is to get small farmers, male and female, to produce a mix of crops to bring them higher incomes and increased production.

Irrigation

The proposed irrigation works will address problems related to lack of water, poor utilization of water, and ineffective institutional arrangements for water distribution and management. To increase the water available to small farms, four major activities will

be undertaken. First, the project will finance the secondary distribution systems of the Dávalos-Chiriboga irrigation project of INERHI, to provide new irrigation water to some 495 Has. in the project area. It is estimated that 60% of this water will be used for irrigation of target group farms, the balance being used on larger farms. AID's financing of this project (\$168,000) will cover 60%, or the same proportion as is estimated to correspond to target group users. (An unattached annex, available in USAID and LAC/DR files, provides detailed plans of the distribution systems to be built by INERHI). In addition to the distribution systems of the Dávalos-Chiriboga Canal, project funding will be provided to INERHI to conduct the design and feasibility studies of a proposed irrigation canal which will tap water from the Nagsiche River. Once completed, this canal will provide 1,500 hectares of additional irrigation water to the project area.

Second, additional water supplies will be provided to the target group from small wells, tapping the available ground water supplies in the area. As indicated in the unattached Irrigation Annex, studies conducted in the project area indicate the existence of ground water beginning at 40-100 meters. This activity will, therefore, finance a series of pumps and on-farm irrigation distribution systems. Each system will have the capacity to irrigate 128 hectares and will cost approximately 72 thousand dollars. Depending on location and water flows, a simple system could cover the water needs of 50-75 small farms.*

Third, the water entering existing canals will be increased by improvements in the diversion and conveyance works. Diversion works will be improved, allowing for the capture of more water during low stream flow periods. Conveyance canals will be lined to reduce seepage losses. The net result of these improvements will be to increase the quantity of water available to the farms inside existing rudimentary water systems.

Finally, in some of the more outlying areas, efforts will be made to identify small stream sources where water has not yet been effectively diverted. While almost all water is currently claimed, efforts will be made to identify a few sources not fully owned and bring them into use. A total of 7,000 hectares of land is expected to benefit from small well systems, improvement of existing canals, and diversion of streams. The cost to AID will be about \$150 an hectare (\$1,050,000), to be supported by an almost equal amount of counterpart (\$995,200), which will be primarily INERHI supporting services.

As important as increasing the volume of water to the farm is the improvement of water use practices inside the farm. Farm level infrastructure (land leveling, ditches, portable plastic dams, drainage, and overland return conveyances), properly installed, can improve the efficiency of water use and increase the effective quantity of water on the farm. Irrigation practices (e.g., the frequency and depth of watering)

* See unattached annex mentioned above.

and related cultivation practices (e.g., water conserving orchard ground covers, water saving cultivation methods) will constitute an integral part of the technical assistance provided to project group members. In some areas where topography is particularly broken, pressurized systems utilizing low cost sprinkling equipment may be a practical solution, and will be tested and demonstrated. Credit will be made available for such on-farm irrigation works (\$442,800, or about \$63 per hectare for 7,000 hectares).

The institutional problems in irrigation will also be addressed. The project proposes assisting INERHI in establishing an institutional capability to identify, design, and implement nontraditional low cost irrigation systems. A small amount of funds has been budgeted for training and technical assistance to assist INERHI in building such an institutional capacity. Technicians from the Salcedo project area will be encouraged to be part of the training effort.

Technical Assistance and Credit

Technical assistance, combined with modest amounts of credit, will be focussed on improving the agricultural technology used on subsistence crops and animal systems; and technical assistance combined with more substantial credit will be focussed on expanding production to more market oriented crops. This credit will be in addition to the on-farm irrigation credit mentioned above. Since it is impractical to immediately change the crop mix of all farms toward market agriculture, one major focus of the project is to improve subsistence production in both crops and livestock in order to augment the food supply at the farm household level. This process involves providing production credit and technical assistance for basic grains, beans, and small animals. The credit will be oriented to financing improved seed, fertilizers, and other modern inputs oriented at improving yields. Yields in these crops currently are low. By making modern inputs accessible and minor adjustments in cultural and sanitary practices, crop and animal yields can be increased significantly, thus preparing the small farmers for later, more intensive agricultural production and crop mix changes.

For farmers with access to water, the project expects to move at least part of their production into income producing cash crops. Three cash crops for which the area has great potential are fruit trees, vegetables, and potatoes. In the cases of vegetables and potatoes, credit will play an important role in financing the relatively high cost of fertilizers, seeds, and pesticides. Fruit trees will require medium-term credit to allow farmers to wait the four to five years before the trees begin to produce.

Technical assistance will be given both on the subsistence and on the cash crops. Consultations between project personnel and INIAP will define the most appropriate technologies. Trials and demonstrations

will be set up by the project technicians, with further dissemination being provided through the contact agents. Vehicles, supplies, and equipment will be financed under the project to support their efforts.

Marketing

Marketing under the Salcedo project will have two components: getting inputs to the farmers, and making sure their cash crops bring sufficient return. As to the former, there are three actions which will take place under the project. First, a nursery will be established by MAG for the reproduction and distribution of improved fruit stock. Secondly, a small animal reproduction center will be established by MAG to make available improved breeds in rabbits, guinea pigs, chickens, pigs, bees, and other small animals. Third, MAG and the BNF will jointly establish an input supply center, primarily for the distribution of improved seeds. An objective of the project is to eventually have the project beneficiaries run the center through a federation of their comunas.

As to marketing production, the project will establish under MAG and ENAC supervision a small, well equipped marketing center in Salcedo for potatoes and fruit. This will require an extremely close working relationship with the comunas. At the centers, the potatoes and fruit will be graded and weighed for bulk sales to buyers. While project beneficiaries will be free to sell to whomever they choose, having a center in the area with correct scales and current marketing prices posted will serve as a check to keeping prices in the whole area fair for the sellers. Annex D further describes these facilities.

Essential to both aspects of marketing is to have good roads throughout the area. There are many trucks for hire in the Salcedo area, and with acceptable roads comunas or individuals will be able to find reasonably priced transportation for bringing inputs in and sending production out. Since road maintenance is a major problem in the area, the project will help improve approximately 50 Km. of roads through cobblestoning or by giving the roads a more acceptable gravel base and providing adequate water run-off. Road maintenance equipment (one grader, one loader, and two dump trucks) will also be provided the Provincial Council to maintain these and other roads. In all improvement works and some maintenance works, the traditional minga system of community labor will be used.

Land Tenure

Of the serious constraints in the Salcedo area, land is perhaps the most difficult and sensitive to deal with. While one option would appear to be expropriation of some of the large haciendas in the area, most have been legally judged to be efficient enough so as to exempt them from expropriation.

In USAID's view, progress in dealing with the land constraint must be an evolutionary process that reflects local Ecuadorean sensitivities and realities. A solution cannot be imposed from the outside, although an outside agency can provide resources that serve as a catalyst for change. Thus, the strategy for dealing with the land constraint will involve several different courses of action.

First, the main agricultural strategy in the Project area will be to intensify agricultural production on existing small farms through improving production of traditional crops, providing secure sources of irrigation water, changing crop mixes, and introducing new technologies and modern inputs. Small farms in the Salcedo area with a secure water supply, access to modern inputs and technical information, and producing fruits and vegetables could generate not only enough income for cost recuperation and family maintenance, but also provide the motor for future development. Through the proposed project such viable small farms will be created throughout the Salcedo IRD area. More intensification of agricultural production on small farms will also provide additional employment opportunities for the large Salcedo population that is now only part-time farmers.

Second, to promote the above strategy, assistance will be provided to IERAC to assist individual farmers and comunas in legalizing their land titles. Lack of clear title to land is a constraint to obtaining credit and access to water, which are the key elements in the proposed agricultural strategy. Vehicles and other technical advisory support will be provided to IERAC for an intensive land titling program in the project area.

Third, along with the land titling program, AID assistance will be provided to establish a campesino legal aid system in the project area through IERAC. The legal aid society will provide counselling to campesinos and comunas on their legal rights under existing land and water access laws. Technical advisory support will be provided for this effort.

Fourth, funding will be provided to assist IERAC undertake a continuing assessment of land tenure conditions in the project area. IERAC personnel, through the local IRD Project Office, will carry out continuing evaluations of the land constraints and will stand ready to respond and take appropriate actions on land tenure disputes. Technical advisory assistance will be provided for these studies and evaluations.

Finally, and perhaps most significant for long-run changes in the area, the project will promote a process of community organization and participation, including target group analysis and evaluation of its local problems. Local groups will be strengthened and tied into a GOE mechanism for supplying resources and services. The entire IRD development process will stimulate a target group training and organization process that will lead to a greater awareness of local problems and to a greater group solidarity in dealing with these problems.

While USAID recognizes that the above strategy is not ideal, it represents one of the most significant land access programs being supported by any international agency within Ecuador IRD projects. USAID believes experience indicates that once GOE/AID resources begin to flow into the Salcedo region, particularly for community organization, training, target group analysis of local problems, and campesino legal aid, a dynamic change process will be initiated that cannot now be fully planned for or anticipated.*

Erosion and Natural Resource Conservation

Interventions in natural resources conservation have been planned for the Salcedo area, though they will be funded under the FY 1981 Forestry and Soil Conservation Project. They will include replanting on a large scale 400 Ha. of hilly land between a good part of the project area and the páramo, and planting 160 Ha. of trees inside individual small farms. The establishment of nurseries and TA will be part of the effort. In the project proposed herein, however, some natural resource conservation TA will be given as part of the on-farm irrigation elements and as part of the technical crop packages.

(2) Interventions in the Social Sectors

Community Training

Though most social interactions will be financed under other AID projects making up the IRD Program, community training is so intimately a part of the production improvement process that certain elements of it will be financed under this Project. Training is a major aspect of the TA elements and was discussed in detail in Section II.A. Much of the support for the training efforts will come from a centrally funded AID Rural Training Project. What are needed to complement these efforts are places for the training to take place, and where the comunas can meet for other project purposes. Project funds will therefore pay for the construction of community participation centers in 28 comunas and renovation of such centers in 28 other comunas. These are simple

* In the late 1960s and early 1970s, USAID supported in the southern Guayas Basin one of the most significant programs in Ecuador for dealing with land tenure problems. AID technical assistance promoted the formation of campesino organizations (rice cooperatives). This project also facilitated greater access to technical and other local assistance from IERAC and supported campesino leadership training and greater access to public sector resources and services. These campesino groups then pressured GOE institutions and the private sector for significant changes in land tenure patterns that are still taking place. See M.R. Redclift, Agrarian Reform and Peasant Organization in the Ecuadorian Coast (1978) for further details about this change process and the AID role in promoting it.

facilities, costing about \$10,500 each (with the communities participating with labor), which will be used for training courses, community meetings, and places for the contact agents to conduct their work.

Health, Potable Water, Sanitation, and Nutrition

Under a proposed FY 1981 project, some 28 comuna water systems will be constructed in the project area, over 5,300 latrines financed, and an integrated health delivery system established. This will include building six additional health posts and one additional subcenter, and training paraprofessional community health workers to provide health and nutrition training and services to the communities.

Other Employment Opportunities

A projected FY 1982 AID project will provide vocational education opportunities, small business credits, and other inputs to enable persons from the project area to find employment in nonagricultural activities. Though the specific inputs for the project area have not yet been well defined, an estimated amount for this activity has been budgeted.

(3) Budget

Table II.5 presents the budget for the Salcedo subproject.

e. Project Technical Analysis

Production technology for this project is based on existing knowledge. Modifications and trials will be carried out by INIAP in the project area under the Rural Technology Transfer (Title XII) Project. In general, potato cultivation at technological levels currently achieved by farmers inside the target area will be expanded to cover additional hectareage. Fruit trees will be expanded by replicating varieties already commercially grown and proven but not widely distributed inside the target area. Pruning, irrigation, and fertilization practices are common on better farms and will require little new research or experimentation. Farmers in the area have indicated repeatedly their desire for an expanded fruit area and have consistently exhausted the availability of new fruit trees for that purpose. It is unlikely that in the expansion of either potato or fruit production that there will be a promotion problem to generate willingness on the part of target group farmers to make these expansions.

In the case of the improvement of technology and yields in subsistence grains and associated crops (corn-beans-barley), appropriate technical packages have existed for some years and have been proven in small farms throughout the Sierra. The yield increases projected for this project are modest when compared even with the current national

Table II. 5

Salcedo Project Budget

(US\$ 000)

	<u>A I D</u>		<u>GOE</u>	<u>Total</u>
	<u>This</u>	<u>Other</u>		
	<u>Project</u>	<u>Projects</u>		
A. Productivity Interventions:				
1. Irrigation				
a. Dávalos-Chiriboga Distr. System	168.0		112.0	280.0
b. Nagsiche Study, INERHI Training	90.0		60.0	150.0
c. Small Well Systems, Improvement of Existing Canals, Diversion of Small Streams	1,050.0		995.2	2,045.2
2. Credit				
a. On-farm Irrigation	442.8			442.8
b. Medium-term Investment Credit	280.0			280.0
c. Short-term Production Credit			1,458.0	1,458.0
3. Technical Assistance				
a. To Project	280.0 ^{1/}	240.0 ^{3/}		520.0
b. Personnel (including contact agents), Per Diem, Materials			652.8	652.8
c. Vehicles, Equipment	90.0 ^{2/}			90.0
4. Marketing				
a. Fruit Tree Nursery	177.0			177.0
b. Small Animal Reproduction Center	18.0			18.0
c. Input Supply Center and Marketing Center	157.0		19.0	176.0
d. Road Improvement and Maintenance	226.0		174.0	400.0
5. Land Tenure (Land Titling, Legal Aid, and Studies)	71.0		140.2	211.2
6. Forestry and Resource Conservation		191.5 ^{4/}	89.5	281.0
B. Social Interventions:				
1. Community Participation Centers	238.0		112.0	350.0
2. Health, Nutrition, Potable Water		554.0 ^{5/}	230.8	784.8
3. Other Employment Opportunities		450.0 ^{6/}	350.0	800.0
Totals	3,287.8	1,435.5	4,393.5	9,116.8

^{1/} This is for TA to the project, grant funded, as described in Section II.A.

^{2/} \$20,000 of this is for grant funded vehicle and equipment support for the TA advisors to the project, as described in Section II.A.

^{3/} From AID centrally funded (DS Bureau) Rural Training Project.

^{4/} From proposed FY 1981 AID Forestry and Soil Conservation Project.

^{5/} From proposed FY 1981 AID Health, Potable Water, and Nutrition Project.

^{6/} From proposed FY 1982 AID Rural Employment Project.

average. For corn, the current yield of 8qq per hectare is only half the national average. During the life of the project this yield is expected to increase to 15qq, still less than the national average. In the case of beans and barley, the same is expected.

The technical feasibility of the project is also demonstrated by the expected manner in which potential input supply bottlenecks will be handled. For example, the supply of high quality fruit trees is likely to be the largest single technical bottleneck in the expansion of fruit trees in the area. The Salcedo PIDA already has had some experience with fruit tree nursery reproduction, and the project will finance a major expansion of this activity in order that the supply of trees will not result in a bottleneck. A similar case exists with animal improvement. The availability of improved genetic stock in both small animals and in cattle is a serious limitation. The feasibility of improving this situation only through technical assistance would be questionable. However, the project will make direct investments in a reproduction center for the small animals and through the on-going MAG artificial insemination program will intervene directly in the genetic quality of the cattle stock.

Modern input supplies, as to both physical availability and the ability of small farmers to afford them, have been limited in the project area. Without improvement in both of these aspects, it is unlikely that either the crop mix changes or the yield improvements will be technically feasible. Project interventions in credit will facilitate the purchase of fertilizers, improved seeds, and other costs of improved technology, and the project-financed input storage facility will assure the physical availability of these inputs at the times that they are needed in the field. An unattached Technical Annex contains detailed descriptions of the crop by crop technological packages which have been utilized widely in the Sierra and will be utilized directly in the project area. Annex D contains technical information on the input storage facility and the fruit tree nursery.

Irrigation is not new to the project area. It is estimated that at least 4,000 Ha. of land in the cantón are irrigated at varying levels of water security. The technical processes for small farm irrigation are well known; practices of contour irrigation to avoid erosion, lining ditches and canals to reduce seepage loss, and many other practices are to be adapted rather than researched. Engineering supervision of the on-going program will be provided by this project to assure that appropriate technical considerations are integrated in all water activities. On-farm water management practices may involve some pilot trials and demonstrations before widespread application to the balance of the entire project area. These technologies may include low cost sprinkler irrigation, drip irrigation of fruit trees to conserve the scarce water availabilities in the target area, and pilot implementation of group water irrigation supplies. None of these involves experimentation in the research sense and consequently does not raise serious questions of technical feasibility. In regard to the distribution system for the Dávalos-Chiriboga irrigation canal, INERHI

has built such systems elsewhere in Ecuador. The only question requiring further details in the financing of this system is the land ownership patterns in the affected area, which will be required as a condition precedent to disbursement of funds for this activity.

The soils of Salcedo are subject to serious erosion in one area of the project; while this does not constitute an overall threat to the future of the project area, it is of enough concern to warrant including technical assistance in soil conservation as part of the production technologies to be expanded. Reforestation is technically feasible in this area. There has already been some reforestation in the Cantón, and the target population has exhibited interest in reforesting small areas inside their farms.

The technical feasibility of the sanitation infrastructure (28 village water systems and 5,350 latrines) appears to be of no problem as IEOS (the Ecuadorean Sanitation Works Institute) will be extending known engineering and construction techniques rather than experimenting with new ones. Likewise, the construction of health posts and subcenters will be accomplished in accordance with well established plans which have been carried out in many locations by the Ministry of Health. Those health posts which already exist in the project area will be incorporated into the project's health delivery system. Further analysis of this component of the project will be included in the Project Paper for the FY 1981 project.

The resurfacing and maintenance of existing roads in the project area involves well known, and in the case of cobblestone, traditional techniques. There is little doubt that these efforts are technically feasible, the only possible limitation being the availability of machinery to transport the necessary material and to grade the gravel on site. The project will be providing such machinery. The technical competence of the Provincial Council, in coordination with the Ministry of Public Works, to supervise this process is clear from its widespread experience in this regard.

The community participation centers, which are to be the focal point of project activities, are based on existing designs. Information is included in Annex D. Several comunas have already constructed facilities similar to those contemplated in the project, materials are available locally, and the technical capacity of the Ministry of Agriculture to supervise the process has been demonstrated widely throughout the Sierra. The communities indicate that they are willing to provide the required labor.

f. Project Economic Feasibility Analysis

To evaluate the economic feasibility of the project, a traditional benefit/cost analysis was used. Representative farm models were drawn up by project personnel, based on Salcedo field data gathered over the last two years. Based on these representative farms, a projection was made year by year of the changes that could be expected as a result of

project activities and investments. It was assumed that it would take two years before measurable incremental income would occur. This assumption was made to allow for the reproduction of fruit stock, the improvement of small-scale irrigation systems, and other improvements which require lead times for implementation.

The time horizon of 15 years was chosen to allow for the maturation of fruit trees planted in years 2 and 3, though there is available sufficient irrigated area in Salcedo to get started on fruit plantings as soon as stock is available. The availability of this rudimentary irrigation at the start of the project allows farmers to be incorporated from the first in the improvement of their crop mix and on-farm water practices.

Table II.6 outlines the estimated impact of the project on farm incomes of the target group. These estimates are in real terms and are projected at the end of the tenth year of project activity. The project will result in a 250% increase in farm incomes for the smallest farms and 420% increase for those families in the 5 to 10 hectare category.

Table II.6

Estimated Income* Impact at the Farm Level: Salcedo

Farm Size	% of Target Group	Average Net Income "Without" Project US\$ Per Capita	Estimated Net Income in 10th Year "With" Project US\$ Per Capita	Incremental Factor
0- 1 Ha.	52%	\$ 92	\$ 234	2.5
1- 5 Ha.	41%	119	352	2.9
5-10 Ha.	7%	152	638	4.2
All Target Farms	100%	\$ 108	\$ 310	2.8

* The definition of net income for the purposes of this table and for the cost/benefit computations is: The value of farm production minus cash costs and minus family labor valued at the market wage.

Table II.7 evaluates the economic feasibility of the project as a whole, comparing project benefits with project costs. Income benefits for each farm type were projected over a 15 year time horizon. The total income with the project was subtracted from the income without the project to estimate the net incremental income resulting from the project. Benefits accruing to the project beneficiaries were discounted at an estimated opportunity cost of capital (discount rate) of 15%. Costs were taken to

Table 11.7.

SALCEDO IRD PROJECT
B/C ANALYSIS SUMMARY

YEARS	PROJECT COSTS							NET PROJECT BENEFITS ⁵								
	1 Irrigat. Infrast.	2 Irrigat. Credit	3 Agrarian Reform	4 Produc- tive Infrast.	Invest- ment Credit	Techn. Assist.	Total Project Costs	Subsist- ance Grops	Potatoes	Veget- ables	Exist- ing Fruits	Barley	Forage	New Fruit	Net Increr. Income with Project	Net Cash Flow
Before Project	-	-	-	-	-	-	-	420.7	407.8	5.6	8.8	142.8	51.1	-	-	-
0	433.2	105.7	105.6	637.6	0	250.7	1,532.8	-	-	-	-	-	-	-	0	-1,532.8
1	433.2	105.7	105.6	-	154	250.7	1,049.2	-	-	-	-	-	-	-	0	-1,043.2
2	433.2	105.7	-	-	21	250.7	810.6	478.1	502.6	19.8	10.9	138.7	68.1	-	190.2	- 620.4
3	433.2	105.7	-	-	35	250.7	823.6	578.4	604.7	54.0	52.4	133.2	82.4	-	477.2	- 346.4
4	-	-	-	-	35	95.0	130.0	781.9	865.9	117.8	92.7	119.0	149.6	-	1,098.9	968.9
5	-	-	-	-	35	95.0	130.0	781.9	865.9	117.8	92.7	119.0	171.0	-	1,120.3	990.3
6	-	-	-	-	35	95.0	130.0	781.9	865.9	117.8	92.7	119.0	192.4	202.0	1,343.8	1,213.8
7	-	-	-	-	-	95.0	95.0	781.9	865.9	117.8	92.7	119.0	192.4	244.6	1,386.3	1,291.3
8	-	-	-	-	-	95.0	95.0	781.9	865.9	117.8	92.7	119.0	192.4	401.3	1,543.0	1,448.0
9	-	-	-	-	-	95.0	95.0	781.9	865.9	117.8	92.7	119.0	192.4	566.5	1,728.2	1,633.2
10	-	-	-	-	-	95.0	95.0	781.9	865.9	117.8	92.7	119.0	192.4	727.9	1,869.6	1,774.6
11	-	-	-	-	-	95.0	95.0	781.9	865.9	117.8	92.7	119.0	192.4	743.9	1,885.6	1,790.6
12	-	-	-	-	-	95.0	95.0	781.9	865.9	117.8	92.7	119.0	192.4	743.9	1,885.6	1,790.6
13	-	-	-	-	-	95.0	95.0	781.9	865.9	117.8	92.7	119.0	192.4	743.9	1,885.6	1,790.6
14	-	-	-	-	-	95.0	95.0	781.9	865.9	117.8	92.7	119.0	192.4	743.9	1,885.6	1,790.6
15	-	-	-	-	-	95.0	95.0	781.9	865.9	117.8	92.7	119.0	192.4	743.9	1,885.6	1,790.6

MVPC = \$ 3,285.9

MVPA = \$ 5,765.3

B/C = 1.75

1. Irrigation infrastructure includes investments in distribution system, canal lining, conveyance structures, groundwater development, etc.
2. Credit for on-farm water improvement projects.
3. Studies and land titling..
4. Includes such things as fruit tree nurseries, input storage facilities, production centers, etc.
5. Total value of production minus operating costs.

include irrigation, roads, productive infrastructure (e.g., nurseries), fruit investment, and technical assistance (AID, RDS, and the IRD project team). Labor in the project was shadow priced at 82% of the market wage to take account of the fact that family labor (particularly women and children) is currently unutilized at least 40% of the time. Table II.7 indicates that using these assumptions the benefit/cost ratio for the project is 1.75. The internal Rate of Return (IRR) is 23.06%.

The benefit/cost results were submitted to a sensitivity analysis to estimate the sensitivity of the ratios to an increase in the real cost of project inputs, and to a decrease in the size of expected benefits. Table II.8 outlines the results of the sensitivity analysis. It would appear from the Table that the project is more sensitive to decreased benefits than to increased costs. Yet under both assumptions, the B/C ratio is still significantly above 1.0, assuming a 15% discount rate, and the IRR is significantly above the discount rate. This implies that the project is satisfactorily robust with reference to significant negative changes in either cost or benefit projections.

Table II.8

Sensitivity Analysis Results

	Benefit/Cost Ratio	Internal Rate of Return
Basic Computation	1.75	23.06%
Increase costs by 20%	1.46	19.24%
Decrease Benefit by 20%	1.40	18.45%

3. The Quimiag-Penipe Integrated Rural Development Project

a. The Project Setting

The Quimiag-Penipe project is located in the northern part of Chimborazo Province. The area includes over 2,200 small farms and landless families representing over 90% of the area's total population of 13,000. The area is characterized by small farms interspersed among a scattering of haciendas on the steep slopes of the Cordillera Oriental, some 10 to 50 Km. east of the city of Riobamba. The area is semi-arid, with the slopes devoid of natural cover and subject in certain places to erosion.

The project area encompasses some 31,954 hectares, of which over half is páramo, not suited for agriculture. Some 5,040 Has. are farmed by the target group, and 10,000 Has. by larger farmers. The project area covers parts of the cantones (counties) of Riobamba and Guano and is divided into six parishes and 33 comunas. A recent study prepared by USAID used eight different indicators to rank 94 of Ecuador's cantones. The cantones of Riobamba and Guano ranked well towards the poorest end of the list at the 84th and 66th positions respectively.

Small farms are planted mostly in subsistence crops such as corn and beans (grown as multiple crops), potatoes, barley, and broad beans. Yields are significantly below national averages. Generally, potatoes and some dairy products are the only marketable surpluses despite acceptable access by road to commercial centers. An exception is in and around Bayushig parish in Penipe, where a favorable microclimate has made apple production possible. Table II.9. shows the predominant crop and animal products for the area.

Health facilities in Quimiag-Penipe are inadequate, typical of poor rural areas in Ecuador. There is one doctor for each 3,300 inhabitants. There are two health subcenters, three dispensaries belonging to the Campesino Social Security Service, and five small health posts. There are no sewer systems, and only 17% of the families have latrines. Few communities have potable water.

There are 31 primary schools, of which ten have only one room. Two secondary schools provide education up to the eighth grade. Although first grade enrollment is high, the drop out rate is close to 50% by the sixth grade. The student/teacher ratio ranges from 28:1 for those primary schools located in the parish centers to 47:1 for the schools in the comunas.

The road network has a total of 152 kilometers of packed dirt access roads. Some of the roads have been poorly constructed and become impassable during the rainy season of the year, which corresponds to the principal agricultural seasons.

Table N° II.9

Quimiag - Penipe Project
Predominant Crops and Animal Species

P R O D U C T	Q U I M I A G			P E N I P E			T O T A L		
	N° Farms	AREA (Has.)	PRODUCT. (Hund. lbs)	N° Farms	AREA (Has.)	PRODUCT. (Hund. lbs)	N° Farms	AREA (Has.)	PRODUCT. (Hund. lbs)
I. AGRICULTURE									
Potatoes	1010	170	30215	918	204	35579	1928	374	65794
Barley	398	89	1563	-	-	-	398	89	1563
Broad bean	274	42	496	-	-	-	274	42	496
Corn 1/	1010	564	8018	1017	1261	12846	2027	1825	20864
Bean 2/	723	279	493	1166	644	2169	1889	923	2662
Apple 3/	-	-	-	556	149	16125 4/	556	149	16125
Pasture	901	742	-	1017	857	-	1918	1599	-
Other Land	-	80	-	-	118	-	-	198	-
	N° Farms	N° Animals	PRODUCT. (Thous. Units)	N° Farms	N° Animals	PRODUCT. (Thous. Units)	N° Farms	N° Animals	PRODUCT. (Thous. Units)
II. ANIMALS									
Bovines-Milk (liters)	901	2078	2051.9	1166	1835	1679.7	2067	3913	3731.6
Pigs-meat (lbs)	287	702	74.8	1017	1910	262.9	1304	2612	337.7
Sheep-wool (lbs)			10.6			14.1			24.7
Sheep-meat (lbs)	997	3607	33.3	1166	3357	12.4	2163	6964	45.7
Chicken-eggs (N°)	1010	3664	565.4	1017	5860	667.1	2027	9524	1232.5
Guinea pigs-meat (lbs)	5/	5/	5/	118	2240	2.8	118	2240	2.8

1/ Includes the area planted with corn associated with beans and corn intercropped with apples.

2/ Refers to the production of beans associated with corn.

3/ Refers to the production of apples intercropped with corn.

4/ 50 Pound boxes.

5/ Insufficient data.

b. Target Group Profile

The intended beneficiaries of the project are campesino families whose per capita income is less than US\$ 320 a year.* This includes all families holding or working farms of up to 10 hectares. About 70 families working farms larger than 10 hectares also meet the income criteria and are included in the target group. The categories of farmers in the area are stated in Table II.10, while income and source of income for families holding up to 10 Has. are presented in Table II.11.

Table II.10.

Land Holdings in Project Area

<u>Category</u>	<u>Size of Holdings (Has.)</u>	<u>Number of Families</u>	<u>Area Held (Has.)</u>
Landless	0 - 0.5	646	1,142
Near landless	0.5 - 2.0	807	1,817
Minifundia	2.0 - 5.0	605	1,168
Small Scale	5.0 - 10.0	171	1,168
Medium (in target group)	10.0 - 20.0	67	913
Large (outside target group)	10.0 +	82	9,986
		2,378	15,046

All farmland is individually owned, except for small communal holdings in two comunas. Land titles, however, are not clearly held in many if not most cases; and sharecropping and other similar arrangements for working the land are common.

The population of the Penipe area is over 95% mestizo. In Quimiag there is an important Indian minority of about a third of the population. Six of Quimiag's 13 comunas are entirely or heavily Indian. In general, the Indian groups suffer more from illiteracy, poor health, nutritional problems, land exploitation, and the other ills of poverty than the mestizo majority. With most Indian women monolingual in Quechua, and with many Indian men working off the farm, it has been difficult for public institutions to provide services to this group.

* Poverty standard of \$150 per capita in 1969 prices adjusted to 1980 prices.

Table II. 11

Net Income ^{1/} And Sources of Income (US Dollars)

SIZE OF FARM (HAS.)	NUMBER OF FARMS	TOTAL NET INCOME PER FAMILY	TOTAL NET INCOME PER CAPITA	I N C O M E S O U R C E S			
				Agriculture	Livestock	Employment	Other ^{2/}
0 - 2.0	1453	499.8	94.3	34.9%	27.8%	15.4%	21.9%
2.0 - 5.0	605	997.2	188.2	46.1%	35.7%	3.2%	15.0%
5.0 -10.0	171	1249.6	235.8	42.9%	50.8%	0.2%	6.4%
Average				43.1	33.3		23.6

1/ Net income means value of production minus cash costs.

2/ Other incomes are principally derived from renting work animals, renting land or pasture, and sale of charcoal, firewood, and handicrafts.

Though not as widespread as in Salcedo, there is significant off-farm employment, particularly for the smallest units. In many cases this results in the campesino wife assuming responsibilities as the head of household and exercising decision making authority over farm production, at least during part of the year while the husband is away working.

Diseases deriving from nutritional deficiencies (e.g., anemia, malnutrition) are prevalent among the target group population, especially among children. The nutritional deficiencies are the outcome of an unbalanced diet, consisting mainly of carbohydrates, the main agricultural products of the subsistence farmer. Endemic goiter is one of the most critical problems, particularly in the Penipe area. Among 411 women examined in 1970, 59% were affected by the disease, as were 44% of 511 men.

c. Constraints to Development

The constraints which limit target group welfare in Quimiag-Penipe are similar to those for Salcedo and those described in Part I of this PP for Ecuador's rural poor in general. There are three principal constraints to increased productivity and incomes in the area: water, land and limited off-farm employment opportunities. These impact differently on different sized groups. Table III.12 attempts to rank these and other constraints for the project area to illustrate their relative degrees of importance for different groups. The very idea of integrated rural development is that constraints are interdependent, and therefore all are important to the solution of the overall problem. The ranking is simply to give a sense of the relative urgency of different limiting factors.

TABLE III.12

Relative Constraint Priorities in Quimiag-Penipe IRD Area

<u>Constraint Types</u>	<u>Landless 0-0.5 Ha.</u>	<u>Near Landless 0.5 - 2 Ha.</u>	<u>Minifundia 2-5 Ha.</u>	<u>Small Scale 5-10 Ha.</u>
<u>Economic Constraints</u>				
Land Constraint		1	2	4
Water Constraint		2	1	1
Subsistence Tech. (Yields)		3	3	3
Subsistence Crop Mix		3	2	2
Lack of Off-Farm Employment	1	2	3	5
Erosion		5	5	5
Roads		5	5	5
<u>Social Services Constraints</u>				
Nutrition-Food Availability	1	1	3	3
Sanitation Constraint	2	2	1	1
Education Constraint	4	4	4	4
Health & Nutrition Services	3	3	2	2

Unavailability of off-farm employment is a constraint on farms of up to five hectares. As shown in Table III.13, less than 30% of available family labor is used for on-farm activities. And less than 15% of the potential labor of this group is employed off the farm. This is due to a scarcity of jobs in the area; most larger farms use their land for livestock or for extensive crops, and unskilled jobs in Riobamba are scarce. The scarcity of marketable surpluses has discouraged the establishment of agro-industries that might provide off-farm jobs, and the limited and sporadic efforts of Government and private agencies have been inadequate in terms of developing any significant artisan or cottage industries that could provide employment. Hence there is a great gap between the supply and demand of the labor force, resulting in high under-employment, seasonal migrations to the Coast, and permanent migration to urban areas.

TABLE III.13.

Employment Patterns in Quimiag-Penipe

<u>Farm Size</u>	<u>Number of Farms</u>	<u>% of Labor Utilized in Farm</u>	<u>% of Labor Worked Off-Farm</u>	<u>Total % of Labor Utilized</u>	<u>% of Labor Under Utilization</u>
0 - 2	1,453	25.4	16.0	41.4%	58.6%
2 - 5	605	29.0	13.0	42.0%	58.0%
5 - 10	171	100.0	0	100.0%	0%
Total/ Average	2,229	32.1	14.0	46.1%	53.9%

The land distribution was described earlier. Approximately 82 large farms in the area, with per capita incomes beyond the IRD target group, occupy two thirds of the total farmland. These holdings are mainly in livestock and dairy, with some grains (principally barley) being grown. Averaging about 125 hectares, these farms are not large by Ecuadorian hacienda standards, and most are in the lands just below the páramo, rather than in the valley bottom. Furthermore, all are being farmed at least efficiently enough to have obtained a IERAC ruling that they are exempt from expropriation under the Agrarian Reform Law. To date, opportunities for small farmers to increase the sizes of their farms have been limited.

There is also a serious land titling problem. It is estimated that the majority of the farms of up to 10 hectares do not have clear titles.

This is due in part to the failure of owners to register acquisitions, which now may have occurred decades ago. Also, division of land among heirs often has gone unregistered. Consequently, the owners lack valid titles. Also, several hundred small farms are being held and worked under sharecropping arrangements, some of which are illegal under the Agrarian Reform Law. Many of the holders have potentially valid claims to the land. All of these land tenure problems cause the holders to be reluctant to make investments on the land, plus they create difficulties in obtaining agricultural credit, which as a result hardly exists among small farms in the area.

Another major constraint on the area's production potential is lack of irrigation. There are 53.5 miles of rudimentary irrigation canals and ditches in the area, covering 464 Has. of the target area as well as another 360 Has. of large land holdings. The irrigated area accounts for only 9.2% of the land the target population holds, and the level of security of the water for even that area is low. The rudimentary unlined canals and ditches, inadequate diversion works, and almost nonexistent farm level irrigation infrastructure contribute to the inefficient use of even the small quantities of water now available.

Target group farms face difficult economic futures without assured supplies of irrigation water. Little change in crop mix and only limited yield improvements in subsistence crops can be accomplished without improved and increased irrigation. Small farmers in the area have evolved a great variety of production systems and associated technologies. The predominant characteristics of this technology are its low risk, subsistence nature (little of the production is marketed), and extremely low yields. Of the basic crop mix of corn and beans, yields in both are less than half the national average. The subsistence technology constraint is also the result of the interaction of other constraints such as the lack of credit, the lack of effective extension services, and the lack of knowledge of improved technical practices.

Forestry resources have been almost completely depleted in the area as a result of fuelwood gathering and the making of charcoal for market. With the hillsides denuded of trees, erosion in certain zones has become a problem.

The constraint of food availability and the debilitary effects of inadequate diet on nutrition and health are readily apparent in the project area, particularly among rural children. Health services are the most frequently asked for social service by target group members when approached about their needs. Increased production of foodstuffs alone will not necessarily overcome the malnutrition or health problems.

d. Proposed Project Elements

As with Salcedo, the principal AID inputs provided under this project address the need to stimulate agricultural production in the project

area and through such efforts raise the income of the small scale farmers (male and female) and increase the demand for agricultural labor. The activities funded hereunder will be coordinated with a Rural Training Project financed under AID central funding. Future USAID projects will finance complementary activities in health and nutrition, forestry and natural resources conservation, and nonagricultural employment generation.

The overall strategy for Quimiag-Penipe is to intensify small scale agriculture by making it possible to grow fruits and vegetables through coordinated efforts in irrigation, credit, extension, marketing, and community organization. Such a change in crop mix for the area will increase the incomes of those participating as well as increase the demand for agricultural labor. At the same time, the construction of irrigation works and the improvement of farm to market roads will provide increased off-farm employment opportunities during project implementation. The reforestation activities under the future AID project will also furnish jobs, as will the projected Rural Employment Generation Project. The simultaneous improvement in health care, sanitation facilities, and nutrition levels resulting from follow-on AID interventions should further increase target group welfare and encourage them not to leave the project area.

(1). Interventions Having a Productivity/Income Impact

-Irrigation

Approximately 50% of the AID funds allocated to the Quimiag-Penipe subproject will be used to expand and improve irrigation facilities. There are two separate projects. The major one is the construction of a 19 km. long canal from the Río Blanco to the Quimiag area. The water will be taken from the river at an altitude of 3,405 meters, and a tunnel of 2.3 km. must be excavated. INERHI has already started the work. The budget estimate for the remaining work, including secondary canals, is \$3,430,800; and the proposed construction period is two and one half years.* When completed, the project will irrigate 1,900 hectares. Approximately 50% of the land to be irrigated belongs to the target group. AID financing of this component will be limited to 50%.

The Penipe project area will benefit from the completion of a principal canal of 6.5 km. and two secondary canals, one of 4 kms. and the other of 6 kms. INERHI has completed some 65% of the intake structure work and much of the canal work. The remaining work on the system is estimated to cost US\$ 396,400, of which AID will also finance 50%. Approximately 18 months are necessary to complete construction. When finished, the system will irrigate 450 hectares, all of which are in AID's target group. The project will also finance distribution, (terciary) canals for both the Quimiag and the Penipe irrigation systems.

Maps indicating the location of the principal canals and the approximate areas to be irrigated for both irrigation projects are

*The cost estimates were submitted by INERHI in its letter of May 21, 1980, update the original estimates and reflect recent actual experience. This

included in Annex D. Also included are cross sections of the canals and typical structures from which cost estimates were calculated. The Project Agreement will require as a condition precedent to disbursement for this activity the final plans and specifications for all canals to be constructed, including secondary and distribution canals, and identification of the farms to be irrigated, including the size of each parcel. The Project Agreement will also require AID approval of the construction arrangements.

-Credit

Credit will be channelled for investment in on-farm irrigation facilities and for agricultural production. A total of \$ 1,148,600 of AID funds, 26% of the AID amount allocated for Quimiag-Penipe, is earmarked for credit, which will be used for medium-term investment and on-farm irrigation credits. The AID funds for credit will be supplemented by \$ 2,259,300 of local contributions, which is almost entirely BNF funds for short-term production credit, plus a small contribution from participating farmers in additional labor. The on-farm irrigation credit will be for both the 464 hectares now irrigated and the target group land to be brought under irrigation. The remaining credit will vary by allocation. At first, medium-term credits will be limited to fruit tree rehabilitation and new plantings in areas currently irrigated. Short-term production credit will go for vegetables in those same areas plus for improved traditional crops in nonirrigated areas. As new irrigation comes on stream, more medium-term credit will be offered for new fruit plantings, and more of the short-term credit will be directed toward vegetable rather than traditional crop production.

The general credit delivery mechanism will be as in other IRD projects. The RDS will prepare and negotiate an interinstitutional agreement with the BNF to create a credit fund jointly financed by AID and BNF. The agreement will stipulate the requirements for granting, supervising, and repaying loans, including interest charges. Likewise, the IRD Project Director for Quimiag-Penipe will develop written agreements and operating procedures with each comuna participating in the credit program. These procedures will include that the comuna as a whole will guarantee the credit allocated to the community, that the comuna through a campesino committee will administer the credit, and that individual credit proposals will be approved or rejected by the comuna's governing body (the cabildo). A fee will be included in the cost of the credit to reimburse the comuna for expenses incurred in fulfilling its functions. As principal and interest are repaid to the BNF, BNF will maintain the funds for the exclusive use of the project until such time as AID and the IRD Project Director agree otherwise. AID approval of the agreements with the BNF and the operating regulations detailing the responsibilities of the comunas will be a condition precedent to disbursement for credit.

-Technical Assistance

MAG currently has a PIDA staff of about a dozen technical and support personnel assigned to the Quimiag-Penipe area. Under the IRD

* same information included a water availability plan. The loan agreement will provide that the GOE will cover any cost overruns through increasing its contribution to the project.

program the number will increase to about 30, including technicians detailed from implementing agencies and contact agents. All will be under the direct supervision of the IRD Project Director. Crucial to the TA effort will be coordination with INIAP. Agricultural specialists will be assigned to carry out trials and demonstrations in the project area based on and in some cases financed out of the Rural Technology Transfer (Title XII) Project. Also crucial will be coordination with the efforts of the Rural Training Project.

The TA efforts will be directed first at two types of technological change: (a) increasing the productivity of traditional crops, recognizing existing water constraints, and (b) for the areas where target group members currently receive adequate irrigation, the introduction, rehabilitation, or improvement of fruit trees and of intensive vegetable cultivation. A number of practices can be adopted by farmers to improve their incomes even before irrigation becomes available. These include introduction of varieties of corn of a shorter growing cycle, and introduction of appropriate varieties of beans and of other complementary crops to be grown in association with corn; seed inoculation for beans; utilization of certified potato seed, and of adequate seed selection and storage practices; fertilization of a variety of crops; pest control; introduction of improved administration and management techniques; and introduction of improved breeds and management, feeding, and sanitary practices for the various species of animals being raised. These and other improved practices will be tested and demonstrated on individual farms. The farms will be selected based on the owners' progressiveness, willingness to change, and standing in the community. The IRD project will enter into agreements outlining the responsibilities of the farmers, the comunas, and the project for this activity, and will spell out what protection will be provided to the farmers, if any, against loss.

In areas where irrigation exists, several types of activities will take place. Where fruit trees are now grown, actions will include renovating and rehabilitating orchards, introduction of new varieties, and introduction of improved pruning, fertilization, and water use techniques. Where vegetables are now grown, similar improvement activities will be undertaken, in close collaboration with INIAP. Where irrigation exists but traditional crops are still grown, efforts will be made to move farmers into higher income crops appropriate for their zones. As new irrigation comes on stream in the later years of the project, these efforts will be expanded to those areas.

The project will use a variety of training and communications techniques to try to effect the intended changes. These will include individual and group contacts with contact agents and technicians, comuna meetings, field days, use of simple brochures, posters and pamphlets, use of radio broadcasts in both Spanish and Quechua, and use of other training aids.

-Marketing

As in the Salcedo project, marketing interventions will deal both with getting inputs to farmers and with helping them sell their production at fair prices. As to inputs, three activities will be undertaken. First, fruit tree nurseries will be set up, first in Penipe and later in Quimiag, to provide good stock. Farmers having water available will be able to purchase the trees at a price covering operating costs. Secondly, MAG will construct and operate breeding facilities for sheep, pigs, guinea pigs, rabbits, poultry, and bees in both Quimiag and Penipe. The facilities will sell the improved stock to the campesinos at cost and will also provide locations for training them in improved animal care practices. Third, input supply stores will be established, to provide a distribution point for improved seeds as well as to provide fertilizers and other inputs at reasonable prices, unadulterated, and correctly weighed. Since a strong comuna system exists in the area, an effort will be made to establish these stores at the comuna level, to be owned and managed by the comunas themselves. The BNF will give credit for stock, and the project will provide TA. Where comuna stores are not possible, MAG and the BNF will jointly establish stores, with the expectation that these can eventually be turned over to groupings of comunas.

As to marketing of production, several activities will be undertaken. First, TA will be given to an existing small apple producers' cooperative, having 27 members (in Bayushig, near Penipe). Assistance will be given for improving sorting, packing, and storage operations, for locating the best markets, and for obtaining transportation at reasonable prices. As new areas enter into fruit production, this experience will be built upon and similar cooperative marketing activities encouraged. Second, a similar group marketing effort will be tested for vegetables in a community (Llucud, near Quimiag) where small farmers are already producing a substantial quantity and variety of vegetables. Technical assistance will be obtained from the Vegetable Growers' Association of Chimborazo or other similar sources to help in appropriate sorting and packing procedures and in placing the produce in the Riobamba and other markets. Again, as new areas enter into vegetable production, this experience will be built on and expanded.

Third, comuna level marketing efforts will be established for potatoes. Following successful experiences elsewhere in the Sierra, campesinos will bring their production to a common site where they are cleaned, sorted, and packed into standard sized sacks. Arrangements are made for transportation, and proceeds are divided equally. The project will provide scales, sacks, other similar equipment, and TA. But for the effort to work, a close relationship between the comuna and the project team, and a complete understanding of the process by the comuna are necessary. The ideal will be for the comunas to completely run this operation, with TA from MAG, ENAC, and other participating agencies. At first, however, it may be necessary for the project to set-up and run these operations, with the close collaboration of the comuna.

Two other marketing activities will take place under the project. One will be the reporting of market prices throughout the area. Several reporting systems will be tested, such as posting prices at strategic locations or broadcasting over radio. Second will be a study on marketing, with an attempt to learn from the above experiences and design optimal marketing strategies for this and similar areas. Social as well as market and technical factors will be taken into account.

As in Salcedo, good roads are a prerequisite to getting inputs in and bringing production out. Almost all of the project area is covered by roads. The system will be completed by the construction of 10 km. of new dirt roads and four small bridges. In addition, 50 km. of dirt roads in poor condition will be improved. All work will be carried out by the Provincial Council in coordination with the Ministry of Public Works, with local community donation of labor through the minga system. Once the roads are in good condition, the Provincial Council appears capable of maintaining them; other roads in the project area are well maintained. Details on the new roads to be built, the bridges, and the roads to be improved are in Annex D.

-Land Tenure

As in Salcedo, water and land are two of the most important constraints limiting small farm development in Quimiag-Penipe. The strategy for dealing with the land constraint will be similar to the one being followed in Salcedo. Since many of the large landholdings in the area have been judged to be efficient enough to be exempt from expropriation under the Agrarian Reform Law, expropriation actions by IERAC appear limited at this time. However, the project will support several activities.

First, the proposed agricultural strategy will intensify agricultural production on existing small farms to increase incomes and expand employment opportunities. Second, IERAC will undertake a major land titling program to obtain clear and legal titles for all small land holdings in the area. This will include surveying properties, helping in the registration process and preparing legal procedures to enable sharecroppers to obtain the rights to land they have been working. AID resources will be used to support this effect. Third, along with the land titling program, AID assistance will provide for the establishment of a campesino legal aid system through IERAC. The legal aid society will provide counselling to campesinos and comunas on their legal rights under existing land and water access laws. Technical advisory support will be provided for this effort.

As a fourth land tenure activity under the project, IERAC will undertake an extensive study on the land tenure situation in the area, with the viewpoint of seeing what alternatives exist for helping

small landholders increase their holdings. The study will look at optimal sizes for land holding, at whether there are possibilities for readjusting larger holdings, at the relationship between water rights and land, at the advantages of certain changes in the Agrarian Reform Law, and at the possibility of establishing a credit fund for the purchase of plots from the larger holdings.

Finally, as in Salcedo, the project will promote a process of community organization and participation, target group analysis and evaluation of its local problems, and campesino training. The entire IRD development process will stimulate a target group training and organization process that will lead to a greater awareness of local problems and a greater group solidarity in dealing with these problems.

-Erosion and Natural Resource Conservation

An identified need in the area is reforestation 2,000 hectares of land and protecting three watersheds. Under the proposed FY 1981 Forestry and Soil Conservation Project, nurseries will be established and this work will be begun. An estimated \$ 631,600 in AID funds from that project will be required, plus an equivalent or somewhat larger counterpart contribution.

(2) Interventions in the Social Sectors

-Community Training

As in the Salcedo project, community participation centers will be financed under this project so as to provide places for training to take place and for commas to meet for various project purposes. Thirteen new centers will be built. In the 20 communities where similar centers now exist, they will be improved to bring them to the standards of the new centers. The designs will be standard MAG designs (see Annex D), total cost per newly constructed unit is approximately \$ 10,500, and community participation with free labor during construction will be a requirement.

-Health, Potable Water, Sanitation, and Nutrition

Tentative interventions, to begin under the proposed FY 1981 AID project, are construction of seven potable water systems, expansion of one existing system, construction of 1,000 latrines, and construction of sewers in three towns. In addition, there will be actions to incorporate existing as well as new health facilities into an integrated health delivery system for the area, utilizing paraprofessional community health workers to provide health and nutrition training and services to the communities as a complement to the more formal services offered.

Other Employment Opportunities

The projected FY 1982 AID project will provide vocational education opportunities, small rural enterprise credits, TA for establishing such enterprises, and other inputs to enable persons from the project area to find employment in nonagricultural activities. The specific inputs for the project area have not been as well defined as for other project components, but an estimated amount for this activity has been budgeted.

(3) Budget

Table II.14. presents the budget for the Quimiag-Penipe subproject.

Table II. 14
Quimiag-Penipe Project Budget
(US\$ 000)

	<u>AID</u>		<u>COE</u>	<u>Total</u>
	<u>This Project</u>	<u>Other Projects</u>		
A. Productivity Interventions:				
1. Irrigation				
a. Quimiag System	1,715.4		1,715.4	3,430.8
b. Penipe System	198.2		198.2	396.4
c. Distribution (Tertiary Canals), INERHI Training	328.6		328.6	657.2
2. Credit				
a. On-farm Irrigation	122.8			122.8
b. Investment Credit	1,035.8			1,035.8
c. Short-term Production Credit			2,259.3	2,259.3
3. Technical Assistance				
a. To Project	280.0 ^{1/}	240.0 ^{3/}		520.0
b. Personnel (Incl. Contact Agents), Per Diem, Materials			652.8	652.8
c. Vehicles, Equipment	67.0 ^{2/}			67.0
4. Marketing				
a. Nurseries, Marketing Centers	276.0		260.0	536.0
b. Road Improvement	240.0		400.0	640.0
5. Land Tenure (Land Titling, Legal Aid, and Studies)	74.0		82.6	156.6
6. Forestry and Resource Conservation		631.6 ^{4/}	672.4	1,304.0
B. Social Interventions:				
1. Community Participation Centers	113.0		87.0	200.0
2. Health, Nutrition, Potable Water		187.4 ^{5/}	430.0	617.4
3. Other Employment Opportunities		356.0 ^{6/}	741.2	1,097.2
Totals	4,450.8	1,415.0	7,827.5	13,693.3

- ^{1/} This is for TA to the project, grant funded, as described in Section II. A.
^{2/} \$ 20,000 of this is for grant funded vehicle and equipment support for the TA advisors to the project, as described in Section II. A.
^{3/} From AID centrally funded (DS Bureau) Rural Training Project.
^{4/} From proposed FY 1981 AID Forestry and Soil Conservation Project.
^{5/} From proposed FY 1981 AID Health, Potable Water, and Nutrition Project.
^{6/} From proposed FY 1982 AID Rural Employment Project.

e. Project Technical Analysis

The technical analysis for this project is virtually identical to that of the Salcedo project, and for that reason will not be repeated here. The technical specifications for all structures to be built (e.g., irrigation, roads, bridges, community centers) can be found in Annex D.

f. Project Economic Feasibility Analysis

In order to examine the economic feasibility of the project, a traditional benefit/cost framework was used. Based on data obtained in the project area by MAG personnel, the actual status of farms before the project was estimated, based on representative farm models. The internal changes due to the project were then projected for each of the different farm sizes and crop types. An example of the detailed farm projections is given in an unattached annex available in USAID and LAC/DR files. A table in the annex illustrates farms without the project interventions, and a second table indicates the changes that are expected in these average representative farms with the project after five years.

Given the fact that fruit trees are to be planted throughout the project's life, a 20 year time horizon was chosen to evaluate benefits, to allow for the production of the orchards. Each year for twenty years an estimate was made of the number of farms included in the project activities. Since even the first of the irrigation projects undertaken will not provide water for the first two years, with the largest irrigation project effectively not providing water for four years, the project will only slowly incorporate farmers into more intensive crops. Thus the projections show a conservative rate for farms entering the program. During the first year only 10% of target group farms enter the production improvement program, and it is not until the major irrigation project begins to provide water (year 4) that 90% of the farms are included. The 20 years of projections at the farm and project levels are shown in Table II.16, and are discussed below. The difference between what the farms earn with project support and what they earn without is counted as the project benefit.

Table II.15 presents the estimated incomes of representative farms in the project area, after 20 years of project activity. The projections are made in real terms, with inflation taken out. As Table II.15 indicates, the net incomes of target group farms is estimated to rise by more than five times in real terms over the 20 year life of the project investments. Actually, the definition of income in Table II.15 underestimates actual family welfare, because it subtracts family labor at the average wage rate and therefore does not include the value of family labor as income. When family labor is added into the computation, this projection would move even the smallest of the beneficiaries out of AID's target category of less than \$ 350 income. When this increase is compared with the modest increases in real terms that campesinos in Ecuador have made in the last 20 years, the project impact appears truly significant.

Table II.15

Estimated Income Impact at the Farm Level in Quimiag-Panipe

Farm Size	% of Target Group	Average Per Capita Net Income* Without Project	Estimated Per Capita Net Income* in 21st Year With Project	Incremental Factor
0.1- 2 Ha.	65%	\$ 45	\$ 257	5.72
2- 5 Ha.	27%	120	686	5.70
5-10 Ha.	8%	185	976	5.28
All Farms	100%	\$ 76	\$ 428	5.62

* Net income is defined for this table as value of farm production minus cash costs and minus family labor valued at \$2.00 per day, which is a reasonable estimate of actual market values. This definition is not the same as that used for estimating total per capita incomes for defining target group limits in Table II.11.

The benefit/cost analysis conducted on the project was conservative in that it included only direct benefits to the target population and did not count indirect benefits. The opportunity cost of capital was assumed to be 15%, the rate used to discount cost and benefit flows over the 21 year period. To maintain the benefit/cost analysis' conservative nature, labor was shadow priced at 75% of market value instead of approximately 50%, which would be indicated by the current underutilization rate of labor (an estimated 53% rate of underutilization). In part this higher shadow price was chosen because of the long time horizon of the project and the assumption that as the project proceeds the outside employment opportunities for target group families might increase.

Costs of the project were taken to include all AID and GOE investments in production activities (e.g., long term credit for trees, roads, irrigation). In addition, the technical assistance provided to the target group through the project was counted as a cost. This includes all AID funded technical assistance, the total costs of the GOE project team, and technical assistance provided from the central RDS IRD mechanisms. These projected flows can be seen in Table II.16. The benefit/cost ratio for the project is estimated at 1.40 and the internal rate of return (IRR) at 19.5%.

BENEFIT/COST COMPUTATION QUIMIAC-PENIPE IAD PROJECT

1 PROJECT COSTS							2 NET PROJECT BENEFITS						
Year	Irrigation	Production Infrastruc.	Intermediate Credit	Agrarian Reform	Technical Assistance	Total Costs	Increment- al Income	Inc. on Prod. Credit	Adjusted Interest Income	3 Labor Shadow Factor	Labor Adjusted Net Increment- al Income	Incremental Benefits	Net Cash Flow
0	672.6	394.8	173.8	78.3	250.7	1,559.8	0	0				0.0	-1,559.8
1	672.6	86.6	231.7	78.3	250.7	1,319.9	61.8	54.0	7.8	12.7	20.5	20.5	-1,299.4
2	448.5	206.2	289.6	-	250.7	1,195.0	196.6	188.4	8.2	38.1	46.3	46.3	-1,148.7
3	448.5	40.9	463.6	-	250.7	1,203.7	402.7	270.0	132.7	75.3	208.0	208.0	-85.3
4	-	-	-	-	75.0	75.0	619.7	351.5	268.2	112.9	381.1	381.1	310.1
5	-	-	-	-	75.0	75.0	1,442.9	351.5	1,091.4	153.7	1,245.1	1,245.1	1,166.1
6	-	-	-	-	75.0	75.0	1,512.0	351.5	1,160.5	154.2	1,314.7	1,314.7	1,239.7
7	-	-	-	-	75.0	75.0	1,593.1	351.5	1,241.6	155.6	1,397.2	1,397.2	1,322.2
8	-	-	-	-	75.0	75.0	1,735.8	351.5	1,384.3	158.1	1,542.4	1,542.4	1,467.4
9	-	-	-	-	75.0	75.0	1,935.7	351.5	1,584.2	161.3	1,745.5	1,745.5	1,670.5
10	-	-	-	-	75.0	75.0	2,168.9	351.5	1,817.4	164.3	1,981.7	1,981.7	1,906.7
11	-	-	-	-	75.0	75.0	2,335.0	351.5	1,983.5	166.1	2,149.6	2,149.6	2,074.6
12	-	-	-	-	75.0	75.0	2,504.4	351.5	2,152.9	168.2	2,321.1	2,321.1	2,248.1
13	-	-	-	-	75.0	75.0	2,668.4	351.5	2,316.9	170.4	2,487.4	2,487.4	2,412.4
14	-	-	-	-	75.0	75.0	2,819.3	351.5	2,467.8	172.9	2,640.7	2,640.7	2,565.7
15	-	-	-	-	75.0	75.0	3,016.8	351.5	2,665.3	174.5	2,839.8	2,839.8	2,764.8
16	-	-	-	-	75.0	75.0	3,153.4	351.5	2,801.9	175.5	2,977.4	2,977.4	2,902.4
17	-	-	-	-	75.0	75.0	3,283.3	351.5	2,931.8	176.2	3,108.0	3,108.0	3,033.0
18	-	-	-	-	75.0	75.0	3,363.5	351.5	3,012.0	177.3	3,189.3	3,189.3	3,114.3
19	-	-	-	-	75.0	75.0	3,450.4	351.5	3,098.9	178.1	3,277.0	3,277.0	3,202.0
20	-	-	-	-	75.0	75.0	3,553.1	351.5	3,301.6	178.9	3,480.5	3,480.5	3,405.5

NPVB = 6,033.4
NPVC = 4,305.9 B/C = 1.40

1. Defined as on page 50.
2. Net project benefits equals total value production minus operating costs.
3. In the original cost calculations, family labor was valued at market wage rates. A more appropriate valuation for family labor is a shadow wage rate equivalent to 75% of the market rate. Since total costs are thus overestimated, this column reduces the original cost figures by 25%. It is reported in this manner to facilitate comparisons with material in the Annexes.

The benefit/cost computations were submitted to a sensitivity analysis to estimate the sensitivity of the ratios to increases in expected real costs and decreases in expected real benefits. Since inflation has already been accounted for, the increases in costs would have to be the result of increases in input prices above inflation rates, or increases in the physical quantities of inputs required. Decreases in expected benefits could be the result of failure to reach technical targets in crop mix change yields or in the number of beneficiaries included in the project. Decreases could also indicate the sensitivity of the ratios to possible decreases in market prices for agricultural outputs.

Table II.17 outlines the results of the sensitivity analysis. From this analysis it would appear that the project is more sensitive to decreases in the expected benefits than it is to increased costs. In the case of increased costs, the B/C ratio continues above the break even point of 1.0 (when discounted at 15%). The conservative nature of the projections, which estimate that it will take five years to begin working with 90% of the target group, should make these levels acceptable. Though decreased benefits bring the ratio closer to 1.0, the level of 1.12 should be acceptable since benefits are the most conservative part of the projections and so should pose less of a risk than increased costs. In summary, the project appears to have a satisfactory B/C ratio, even if decreases in benefits or increases in costs were to occur.

Table II.17

Sensitivity Analysis for Benefit/Cost Ratio for Quimiag-Penipe Project

	<u>Benefit/Cost Ratio</u>	<u>Internal Rate of Return</u>
Basic Computation	1.40	19.5%
Increased Costs 20%	1.17	16.3%
Decreased Benefits 20%	1.12	15.6%

C. IRD Project Planning

1. The Regional Development Context

In order to institutionalize the IRD model presented earlier, both USAID and the GOE believe it important not only to finance under the Project IRD projects which were already designed, but to finance the design of at least one IRD project now only in the earliest design stages. In this way, the RDS and other institutions will gain early experience in all phases of the IRD model planning as well as execution.

In addition, to date most IRD projects developed by the GOE and other donors have been prepared by consulting firms or by GOE officials located in Government offices in Quito. They have often been prepared as theoretical-paper planning exercises with little direct involvement in the socio-economic reality of the country. There has been little consultation with target groups and even less target group participation in the planning process itself. IRD planning has been characterized by the top-down approach so often found in previous GOE programs. As discussed in Section I above, the new GOE policy is to maximize the participation of the rural poor in both IRD implementation and planning. This component of the Project will assist the GOE develop a methodological approach that facilitates target group participation in the planning process. While the end product will be one IRD project prepared, it is hoped that a participatory planning process will be institutionalized in the RDS that can then be replicated in other similar projects.

Both USAID and the GOE also believe it important that AID concentrate its efforts in a limited number of areas of the country. There are several reasons for that: in-depth familiarity with the problems of small areas leads to greater project effectiveness, administrative and logistical problems are lessened, and close working relationships can be developed with a small number of regional organizations. Also, this concentration will fit in with the GOE strategy of using IRD to support regional development.

In order to decentralize the planning and coordination of activities, the GOE's strategy is to have strong regional authorities coordinating with technically strong national sectoral or subsectoral implementing agencies. The GOE intends to divide the country up into eight such regions, four of which currently have regional development authorities. Table II.18 presents the eight proposed regions.

The four existing regional development authorities* have all evolved in different manners and at different times, and therefore their scopes of activities and manners of operation vary considerably. To effect some standardization, the GOE National Development Plan states:

"It is considered necessary to organize a system of regional development planning which will coordinate the development activities developed at the national, regional, and local levels. To accomplish this, CONADE will undertake to standardize the scopes of work for those regional development agencies already in existence (CEDEGE, CRM, CREA, and PREDESUR)."

* INCRAE, the Institute for the Development of the Amazonic Region of Ecuador, has in many ways served as a regional development authority for the Oriente. In the GOE Plan, however, the Oriente will be divided among four other regional authorities, and INCRAE will serve as a service agency.

Table II.18

ECUADOR PLANNING AND DEVELOPMENT REGIONS

Regions	Regional Development	Urban Population	Rural Population	Total Population	% of National Population
REGION 1	To be Created	200,918	422,236	643,154	8.23
Carchí (Sierra)		44,226	94,486	138,712	1.78
Esmeraldas (Costa)		93,950	161,172	255,122	3.26
Imbabura (Sierra)		82,742	166,578	249,320	3.19
REGION 2	To be Created	826,041	479,483	1,305,524	16.71
Napo (Oriente)		5,695	75,645	81,340	1.04
Pichincha (Quito-Sierra)		820,346	403,838	1,224,184	15.67
REGION 3	CRM	270,388	693,895	964,283	12.34
Manabí (Costa)		270,388	693,895	964,283	12.34
REGION 4	To be Created	267,326	847,509	1,114,835	14.27
Bolívar (Sierra)		21,134	141,413	162,547	2.08
Chimborazo (Sierra)		88,982	253,429	342,411	4.38
Cotopaxi (Sierra)		38,440	228,972	267,412	3.42
Pastaza (Oriente)		7,167	18,905	26,072	0.34
Tungurahua (Sierra)		111,603	204,790	316,393	4.05
REGION 5	CEDEGE	1,319,705	1,037,216	2,356,921	30.16
Guayas (Costa-Guayaquil)		1,192,931	687,165	1,880,096	24.06
Los Ríos (Costa)		126,774	350,051	476,825	6.10
REGION 6	CREA	178,539	476,741	655,280	8.38
Azuay (Sierra)		143,320	277,124	420,444	5.38
Cañar (Sierra)		22,493	147,389	169,882	2.17
Morona Santiago (Oriente)		12,726	52,228	64,956	0.83
REGION 7	PREDESUR	259,776	509,126	768,902	9.84
El Oro (Costa)		165,690	162,303	327,993	4.20
Loja (Sierra)		88,956	304,819	393,775	5.04
Zamora Chinchipe (Oriente)		5,130	42,004	47,134	0.60
REGION 8	To be Created	-	5,101	5,101	0.07
Galápagos		-	5,101	5,101	0.07
TOTAL		3,342,693	4,471,307	7,814,000	100.00

SOURCE: Instituto Nacional de Estadística - Population estimates of Ecuador in urban and rural areas.

As for those areas where regional authorities do not exist, the Plan speaks of their creation. But it realizes that such creation is a long process, with both technical and political difficulties. So, for the interim, it states that:

" . . . CONADE will undertake to coordinate programming in those regions where regional development agencies do not yet exist, until it is decided to create them. Both national and regional government agencies will participate in this programming."

In the design of this Project, USAID wished to limit its activities to no more than two regions of the country, but it also wanted a Sierra-Coast mix, concentration in areas of high rural poverty, and to work both where a regional development authority already existed and where one did not exist but would likely be created. The selection process worked out well on all criteria. Two IRD projects in the latest stages of design (Quimiag-Penipe and Salcedo) were in the same region (Region 4), were in the Sierra, were in what is probably the area of Ecuador with the highest concentration of rural poverty, and were in a region which as yet does not have an established regional development authority. On the other hand, the Coastal region with the highest concentration of rural poverty is Manabí, it has an existing regional development authority, and it also has two of the 17 priority IRD projects in its area, both in the earliest stages of design. USAID, therefore, with the guidance of the GOE, has decided to finance the execution of the two IRD projects in Region 4, to assist in the creation of the Region 4 regional development authority, to finance the design of one of the two Manabí IRD projects, and to strengthen the ability of the regional authority in Manabí (CRM) to do IRD project planning and coordination with the participatory process described previously.

Section A above mentioned that approximately 1.6 person/years of TA plus a small amount of funds for other inputs will be provided CRM and the emerging Region 4 development authority to directly assist them in developing their IRD planning and coordination roles. In addition, funds for studies and other activities will be provided for the planning of one IRD project in the Manabí region - the Jipijapa IRD Project. That project is described in the following subsection.

2. The Jipijapa IRD Project

The Jipijapa project area includes all the area within the cantón (county) of the same name. The population and area of this IRD Project are large, over 150,000 people and more than 50,000 Ha. of productive land. The target group in the area is among the poorest in the country, ranked in the lowest income group by the World Hunger Program. In relative terms of socio-economic poverty status, Cantón Jipijapa ranks 66th poorest out of 94 cantones ranked, in the same position as Guano.

The direct beneficiaries of the project would be about 8,000 families having current per capita incomes under \$200. Nearly 6,000 of these families work less than 2 Ha. each. Production is typically subsistence, combined with a small amount of coffee for export. The Ministry of Agriculture's coffee program provides limited technical and economic assistance to coffee producers. In addition to MAG, other agencies working in the area are IERAC and CRM. IERAC's personnel have the responsibility to continue the process of legalizing land holdings and designing other agrarian reform activities for the project area. The agencies working in the area have identified unpredictable rainfall patterns as a major factor in the low yields characteristic in the area. Other constraints on incomes are said to be related to coffee handling, storage, and other marketing problems that are a function of small volumes originating on small farms.

The over-all project is in its initial planning stages, and AID financing is proposed to conduct necessary surveys, to investigate pre-project organizational arrangements, facilitate target group participation in the planning process, and to help prepare program documentation suitable for future decisions on internal and external financing. The main line of possible development activity for the IRD project involves improved farm practices, supplemental irrigation, improved coffee buying, storing, and marketing methods, increased rural electrification, and improved potable water supplies.

The population of Jipijapa consists primarily of native coastal farmers of mestizo origin. Most of the population has by tradition been principally involved in small subsistence farming activities and fishing, and there is little information available concerning the social structure and characteristics of these people. Approximately 19 rural based organizations have been created to date within the project area, the majority of which are rural community (comunidad) organizations. The general standard of living in the area is extremely low.

Table II.19 shows land tenure and estimated income in the project area. Though the data are less than complete, they suggest families holding up to 10 Ha. (possibly 20 Ha.) of productive land have average per capita incomes of under \$200. Therefore, the number of target families includes all those holding 10 Ha. or less (7,251) and most of those holding up to 20 Ha., for a total of 8,100 families. The many landless plantation workers and the poor in the several towns may also benefit from some of the project activities.

Table II.19

Income and Land Tenure in the Jipijapa Project Area

Farm Size	Distribution of Crop and Pasture Land				Income in Project Area	
	No. of Families	%	Area in Production	%	Net per Ha.	Per Capita Income
0-1	1,540	17.4	914	1.8		
1-2	1,580	17.9	2,048	3.9		
2-5	2,669	30.2	7,452	14.3		
5-10	1,462	16.6	8,241	15.8	\$ 139	\$ 134*
10-20	855	9.7	8,601	16.5		
20-50	481	5.4	8,316	16.0		
50-1,000	234	2.7	13,959	26.8		
+ 1,000	5	0.1	2,509	4.9		
	8,826		52,040			

* Excludes off-farm income

Little is known concerning employment levels and structure, income levels, social beliefs and infrastructure, and other important data about the project region. This points out the need for survey-based information to support the planning of the IRD project.

AID will provide approximately \$240,000 under the Project for the planning effort. The planning will be coordinated by the RDS, but CRM will play a major role in the conduct of the surveys and in the participatory planning process. The AID funds will be used as indicated in Table II.20.

Table II.20

Breakdown of AID TA Funds for Planning Jipijapa IRD Project

Participatory needs assessment; Target group economic and social profile; Inventory of project area resources	\$ 50,000
Economic and social constraints analysis; Identification of project interventions	25,000
Design and feasibility analysis of selected project interventions	60,000
Preparation of final funding submission document	25,000
Small scale activities to encourage community participation in the planning process (e.g., community centers, SDA-type activities to test interventions)	80,000
	<hr/>
	\$ 240,000

III. PROJECT ANALYSES

Annex 1-A includes additional project analyses as follows:

(A) Economic Analysis Summary; (B) Technical Analysis Summary, (C) Social Soundness Analysis, (D) Institutional and Administrative Feasibility and (E) Financial Analysis and Plan.

IV. IMPLEMENTATION DETAILS

A. Monitoring

The main monitoring instrument, on the part of both AID and the RDS, will be a series of reports, based on the two types of written agreements within the IRD projects. These reports will be complemented by site visits, frequent contacts with the TA advisors, and other less formal means of determining how the Project and its components are going.

As discussed earlier, each community will have an agreement with the project office, detailing the responsibilities of each. The agreement will include or will further be elaborated into a workplan for each community, with detailed plans and targets. During every visit of a technician or contact agent to a community, he/she will be required to fill out a report, not only detailing what he/she accomplished by the visit but also how the community is proceeding toward the objectives of its workplan. A community representative will be encouraged to countersign the report, putting his/her own comments in as well. Furthermore, the contact agent and at least one representative from the project office will meet formally with the assembled community every three months to together assess progress toward the workplan's targets. A report will be filed on the meetings.

Each technician and contact agent will be required also to fill out a monthly control form, detailing how he/she spent each day. In addition to columns detailing location and tasks, the form will have spaces for narrative comments.

The project office will compile the above reports and cross-check them against each other. The project office will then issue a quarterly report to the RDS. The reports will be expected to be specific and frank. All relevant indicators will be compared with targets (e.g., meters of a specific canal built, hectares of a certain crop planted, persons trained using a certain technique. In addition, the reports will indicate problems and delays, proposed actions to remedy the problems and delays, and any changes from the plan expected during the next quarter. The reports should give the RDS a good picture of field activities, to be corroborated by the close contacts its IRD Project Implementation Unit is expected to have with the field.

USAID will receive copies of the project office reports. In addition, the RDS will be required to prepare a similar quarterly report for AID, detailing its actions (e.g., progress in planning IRD projects, ongoing projects assisted) and also the delays and problems it is incurring. The RDS reports will also have a detailed summary of the financial status of the Project. USAID will also require quarterly reports from each contractor paid from AID funds. From all these sources, plus field visits,

informal contacts, and audits, USAID should be able to adequately monitor all aspects of the Project. Also, joint progress reviews with the RDS will be held twice annually, once in time to impact upon the next year's GOE budget allocations.

B. Evaluation

Periodic evaluations will be an important tool for both AID and the RDS in measuring Project progress and in determining what modifications might be made in the Project's components. The evaluations will attempt to measure progress toward the main objective of the Project: the establishment of a workable IRD institutional mechanism,* top to bottom, through the undertaking of replicable IRD projects which impact on the health and well-being of small farmers.

To evaluate the impact of the IRD projects, data from the monitoring instruments discussed above will be compiled and studied. For example, each of the two IRD projects during its planning stage was judged to be economically sound through a benefit/cost analysis based on certain projections and assumptions about such factors as acceptance of new technologies by farmers and number of hectares to be planted in certain crops. These projections and assumptions will be tested, and reasons for their success and failure will be analyzed.

This will give a macro view of whether an IRD project is achieving its macro objectives and is truly a positive investment from the GOE standpoint. However, it is also important to measure the effect of the projects on individual farmers, to see if income and well-being objectives are truly being met. To that end, three measurement instruments will be used. One is measurement of income from a single crop, another is measurement of income or value added from production of a single type of livestock, and the third is measurement of weight-for-age for children. These will be measured in a way that will be useful not only for IRD project personnel but also for the participants themselves.

For each IRD project area, a sample of farms will be selected, with an attempt made to be as representative as possible (i.e., not just farms adopting new technologies). The farmers will be asked to participate in filling out a simple form to measure the activities and inputs for each crop produced. The form has been designed so that even illiterate farmers can make the proper notations. From the information noted on the form, calculations can be made on production costs, yields, and net income. A similar form will be used for each animal type on the farm, allowing calculations to be made on vegetative growth of the stock, costs of production, total income and value, and net income.

The contact agents will train farmers to use the forms and will make the quarterly calculations from the farmers' notations. Also, particularly in order to assure that some farms in adjoining areas are used as

* Indicators of EGP institutional success will be (i) operation of a well-staffed unit, (ii) existence of an IRD fund receiving budget allocations from the GOE, (iii) proven track record to tie together national, regional and local organizations for IRD projects, (iv) existence of effective participation from local grass-roots organizations.

controls, some school teachers will be trained to carry out the same role. (The teachers will be paid a small fee out of Project funds for each properly filled out form each quarter.) The contact agents and teachers will explain to the farmers the meaning of the calculations, so that the farmers will have an understanding of their progress in a financial sense.

The third measurement is to be weight-for-age of preschool children, the most vulnerable group to nutritional inadequacies. The measurement will be made utilizing a simple spring pocket scale and will be noted on a simple graph. Each child will be measured monthly in the presence of its mother, and one copy of the graph will remain with the mother to enable her to follow the child's progress. The measurements will be carried out by the local health auxiliary, by the contact agent, or by a local teacher.

The above information will be summarized each quarter by the IRD project office as an on-going evaluation tool. In addition, the information will be used in measuring subproject progress for the annual evaluations. When compared with the other more "macro" indicators described above, a fairly complete picture of an IRD project's progress will emerge, which will permit analysis of what is and is not working well at the IRD project level.

As for evaluation of the Project's overall planning and coordination mechanism, the procedure will have to be somewhat more subjective. While there will be indicators such as number of projects planned and amount of assistance given to IRD projects, the true measure of the RDS's success will be its ability to achieve interinstitutional coordination. Therefore the evaluation methodology will involve not only looking at all indicators but also observing RDS operations and having frank discussions with its personnel.

Part of the TA to the RDS is to establish an effective evaluation capability. As a condition precedent to first disbursement of funds for other than TA, the RDS will be asked to submit an evaluation plan for the Project. The plan, however, will be expected to be preliminary, with modifications to be made based on the interaction of the TA advisor with the RDS's Planning and Evaluation Unit.

C. Implementation Timetable and Project Implementation Plan

The projected schedule of key implementation dates for the Project is provided below.

- Loan Authorization	July 25, 1980
- Loan Agreement Signature	September 5, 1980
- Initial Conditions Precedent to Disbursement Fulfilled	October 31, 1980
- First Year Operating Plan Approved	January 15, 1981
- Resident Advisors (3) for RDS, and IRD Projects Contracted	January 31, 1981

- Agreements with BNF, INERHI, and INIAP Signed	February 15, 1981
- Final Plans for Irrigation Activities approved	March 15, 1981
- Initial Loan Disbursement to IRD Fund	March 31, 1981
- First Year Evaluation and Progress Review	October 31, 1981
- Second Year Operating Plan Approved	January 15, 1982
- Second Year Evaluation and Progress Review	October 31, 1982

Thereafter, each January 15 the yearly operating plan will be expected to be approved, and each October 31 the annual evaluation and progress review will be completed.

All other details of the Project were described in earlier sections of this PP. Contracting details were discussed at length in Section III.D. Financial details were covered in III.E. Institutional relationships were discussed in II.A.

The project's implementation plan is presented in Table IV.I. The time period for each activity is shown.

D. Conditions and Covenants

In addition to standard conditions and covenants, the following are the conditions precedent which USAID believes are essential to the proper initiation of the Project and its activities. They will be incorporated in the Project Agreement.

1. As a condition precedent to first disbursement of Project funds, that the RDS be formally established, with an Executive Secretary named and on board.

2. As a condition precedent to first disbursement of Project funds other than for technical assistance, studies, and related items to be provided the RDS and/or regional organizations, that (a) the operating procedures for the RDS be established, including appropriate regulations and operating manuals, (b) the IRD Fund be established, including accounting and operating procedures, and (c) the RDS have a plan for evaluating the IRD program as a whole.

3. As a condition precedent to first disbursement of funds which will be used to implement any of the activities in either the Salcedo IRD project or the Quimiag-Penipe IRD project, except for technical assistance and studies, that for such project the RDS submit to AID an implementation plan. The implementation plan must include signed agreements with INIAP,

Table IV.1

Project Implementation Plan

	Year 1	Year 2	Year 3	Year 4	Year 5
TA to RDS					
Admin. and IRD Mgmt.	X		X		
Info. and Data Systems		X		X	
Planning and Evaluation	X		X	X	
Financial Admin.	X		X		
Salcedo IRD Project					
Irrigation Constr. & Imprv.	X				
On-Farm Irrigation Works	X		X		
Road Improvement	X				
Community Center Constr.	X		X		
Agricultural Credit	X				
Marketing	X	X			
Land Titling	X	X			
TA to Farmers	X				
TA to Project	X		X		
Quimiag-Penipe IRD Project					
Irrigation Constr.	X				
On-Farm Irrigation Works	X		X		
Road Improvement	X				
Community Center Constr.	X		X		
Agricultural Credit	X				
Marketing	X	X			
Land Titling	X		X		
TA to Farmers	X				
TA to Project	X		X		
Regional TA and IRD Planning					
TA to CRM	X	X	X		
TA to Region 4		X	X	X	
Jipijapa Project Developm.	X	X	X		
Other IRD Studies.		X		X	

————— = intensive activity
 - - - - - = occasional activity

INERHI, IERAC, BNF, MAG, and all other participating institutions, each such agreement to include detailed technical plans of all activities to be undertaken. In particular, the agreement with INERHI must include detailed plans for all irrigation works to be carried out, including distribution canals and identification of all parcels to benefit. The implementation plan must also include a complete first year operating plan, including activities proposed, objectives, and budget. The implementation plan must also detail the evaluation plan for the project, including baseline data or detailed arrangements on how baseline data will be collected.

4. As a condition precedent to first disbursement of Project funds for planning the Jipijapa IRD project or for planning any other IRD project, that an agreement between the RDS and the respective regional cooperating organization be presented to AID, such agreement to include a detailed description of the proposed study.

5. A covenant will be included stipulating that INERHI, consistent with GOE legislation, will establish and enforce water rate charges in the IRD project areas adequate to recover the costs of irrigation facilities and to operate and maintain the system.

E. Source and Origin Waiver Request for Technical Assistance Services

It is expected that up to \$1.0 million in AID grant funded technical assistance advisors will come from Latin American countries other than Ecuador. Field level technical assistance advisors for the Salcedo and Quimiag Penipe projects will be Latin Americans from the Institute for Inter-American Agricultural Sciences (IICA) for a total of at least \$500,000. It is also expected that up to \$500,000 of technical assistance for the GOEs Rural Development Secretariat (RDS) will also be Latin Americans possibly provided through IICA or FAO. USAID therefore requests a source/origin waiver so that up to \$1.0 million in grant funded technical assistance services may be procured from either the United States, the Cooperating Country (Ecuador) or from other Latin American countries. The reasons for this request are as follows:

-- First, the Institute for Inter-American Agricultural Sciences (IICA), an agricultural technical assistance agency of the OAS, has played a major role in assisting the GOE and USAID plan the project proposed in this Project Paper. IICA is staffed by a large number of highly qualified Latin American agricultural technicians. In order to maintain project continuity, USAID believes that it is important to continue IICA involvement in project implementation at the RDS and field levels. A number of highly qualified IICA technicians are already in Ecuador, and if selected, they could be contracted with no disruptions in project implementation. Their unique knowledge of the project and its objectives are vital for ensuring its success. The expense for contracting these technicians will also be less than bringing new technicians into the country.

-- Second, as now anticipated, USAID/Ecuador will have a relatively small USDEH staff. In order to do more with no major increase in USDEH, USAID's strategy is to draw on technical assistance services already in country from IICA, FAO and other agencies. However, in order to continue this process into project implementation will require contracting through these agencies Latin American Technical personnel.

-- And third, the field level implementation of the Salcedo and Quimiag-Penipe projects will involve very sensitive issues at the local level in such activities as campesino training, community organization and land tenure problems. In many cases, technicians from other Latin American countries with similar conditions and experiences can better facilitate these sensitive activities rather than U.S. advisors.

F. Procurement Plan

The Rural Development secretariat and where relevant individual COE participating agencies under RDS supervision will be the action agents for all procurement under the Project. The goods and services needed, source region, contract mode and disbursement procedures are outlined in the table that follows. The mission will work with the RDS and participating agencies to familiarize them with AID procurement regulations. At the same time, the mission will be backstopped by the Regional Contract officer in Panama, AID/W procurement specialists and the Regional Legal Officer in Peru. The mission will work with the RDS to make sure that procurement is accomplished in a timely manner. The following table identifies more details of the procurement actions.

MARY OF PROCUREMENT ^{1/}
PLAN
AID FINANCING

<u>Description of Goods & Services</u>	<u>Estimated Cost</u>	<u>Origin Source</u>	<u>Contract Work</u>	<u>% Loan Financed</u>	<u>Loan/Grant Disbursement Procedure</u>
1. Vehicles & Equipment	507	000	IFB	92%	GOE Financed letter of Credit
2. Construction Services for Irrigation Activities	3,550	HC	Force Account/Bid	100%	GOE Reimbursement
3. Construction Services for Input and marketing centers and Nurseries	257	HC	Force Account/Bid	100%	GOE Reimbursement
4. Equipment for input/marketing Centers and Nurseries	371	000 941 HC	IFB	100%	GOE Financed letter of Credit
5. Road Improvement Equipment	466	000	IFB	100%	GOE Financed letter of Credit
6. T.A. to IRD Projects	560	000 941 HC	RFP		AID Financed letter of Credit
7. T.A. to RDS	1,188	100 941 HC	RFP		AID Financed letter of Credit
8. Studies and Evaluations	555	000 941 HC	RFP		AID Financed letter of Credit
9. Construction Services for Community Participation Services	351	HC	Force Account/ Bid		GOE Reimbursement

10. Local Currency (Credit)	1.882
11. Contingencies and Inflation	2.113
TOTAL	11.800

1/ See Annex D for detailed list of equipment/vehicles, and Implementation plan for timing of procurement actions.

ANNEXES

- 1 -

PROJECT ANALYSES**A. Economic Analysis Summary****1. Economic Impact of the Project at the Farm Level**

The Project includes two major direct IRD subprojects, Salcedo and Quimiag-Penipe. The combined interventions in the two subprojects are estimated to result in the income impacts indicated in Table III.1.

TABLE III.1.

Projected Economic Impacts for Quimiag-Penipe
and Salcedo IRD Projects

Farm Size	No. of Families	Est. Average Net 1/ Income Before (US\$/Cap.)	Est. Average Net 1/ Income After (US\$/Cap.)	Incremental Factor
SALCEDO				
0 - 1 Ha.	2,768	\$ 96	\$ 234 ²	2.5
1 - 5 Ha.	2,162	119	352	2.9
5 -10 Ha.	409	152	638	4.2
All Farms	5,339	108	310	2.8
QUIMIAG-PENIPE				
0.1-2 Ha.	1,453	\$ 45	257 ³	5.7
2 - 5 Ha.	605	120	686	5.7
5 -10 Ha.	171	185	976	5.3
All Farms	2,229	76	428	5.6

1/ Net income is equal to value of farm production minus cash inputs and costs, and minus the value of family labor priced at the market wage.

2/ After 10 years with project

3/ After 20 years with project

Table III.1. indicates that the potential income benefit is large from both projects, though the magnitudes are not exactly comparable. Salcedo benefits are estimated at the end of 15 years, the Quimiag-Penipe benefits at the

end of 20 years. In total, 7,568 farm families and about another 800 landless families will benefit from the projects.

2. Costs per Beneficiary

a. Selection of AID Financed Subprojects

Part of the strategy for IRD is to engage in multi-sectorial interventions to increase the combined impact on the rural household. Often this strategy can result in high costs per beneficiary due to the proliferation of interventions focused on a small population. If IRD projects are to be useful and replicable models, they must be low cost. One of the USAID's objectives in the Ecuador IRD program is to engage in low cost programs which have the potential of wide replication. Within the portfolio of Ecuador's IRD projects USAID has attempted to select with this low cost model in mind. This is not to say that the other projects are of lesser value. But several are colonization projects in which the investment in land clearing, roads, and basic infrastructure will be high per initial beneficiary. Others are projects in areas in Ecuador where water is the principal limiting factor and where local small scale irrigation projects cannot hope to obtain sufficient water for irrigation. In these arid areas large scale and expensive irrigation infrastructure may be the only long run answer.

b. Comparison of AID financed to Other GOE IRD Projects

USAID's preference of low cost per beneficiary projects therefore limits selection to those areas where the population is already in place (so that large land clearing and road investments are not necessary) and where sufficient rainfall exists and/or rudimentary irrigation or major canals are already at least partly in place so that relatively low cost irrigation expansions and improvements are possible. To compare the two IRD projects selected for AID financing with the balance of the Ecuadorean IRD portfolio in investment costs per beneficiary is therefore mainly an illustration of this choice of AID role in IRD in Ecuador. Nonetheless, a review of the cost per beneficiary in the various projects helps to put the two selected projects in their proper context as part of the larger GOE IRD policy.

The National Plan outlines 17 IRD projects. Eleven of these are at some stage of implementation or final feasibility analysis, enabling the GOE to estimate costs with at least some level of precision. Of these 11, no costs can be properly estimated for one (Tanicuchf) because it is being financed not by the Government but by private sources, and considerable changes are being made. Another of the 11 (Valdivia) is also not included in the analysis below because it is so small as to be an exception to the general project pattern (\$352,000).

It is difficult to compare costs per beneficiary for the remaining nine projects because of the difference inherent in the way AID defines the target group and the unavailability of detailed data on some of the projects. After considerable effort to obtain comparable figures on "total costs" and on "target group beneficiaries", it appeared better to use the CONADE figures, which are at least consistent for all projects. Before discussing the next table, however, a few points must be made about the CONADE methodology. The term "investment costs" means those expenditures for project activities of an "investment" type, which exclude the operating costs of ministries and other institutions involved. These figures are not, therefore, comparable to the "total cost" figures used in this PP to describe the costs (including all counterpart and technical assistance) for the two subprojects to be financed by the Project. It is also true that CONADE's estimates are preliminary. The IBRD's Tungurahua Project, for example, has a final estimated total cost of \$30,000,00, as compared to \$17,168,000 estimated in the National Plan. Part of this difference, however, could be one of definition, as the \$30 million is "total cost" from the IBRD loan document, whereas CONADE utilizes only "investment cost". In the case of Salcedo (estimated by CONADE as a \$1.7 million investment), the final project plan has about \$2.5 million of what may be considered "investment". The figures presented in Tabla III.2. are therefore most useful as comparisons between projects at one point in the planning process, done with the same methodology and based on common assumptions.

TABLE III.2

Comparison of the Costs per Beneficiary for
Ecuadorean IRD Projects

Project Area & Zonal Type	Project Area Population	Est. Invest- ment Total (US\$ 000)	Invest- ment per/ Capita	Investment Cost Index Ave. = 100
Zamora (Oriente)	18,000	\$20,036	\$1,113	270
Puerto Ila-Chone (Coast)	20,000	13,424	671	162
Quinindé (Coastal Colonization)	20,000	10,036	502	121
Santa Isabel (Sierra-Coast Transi- tion)	21,000	10,128	482	116
Morona Santiago (Oriente)	27,000	9,904	367	89
Tungurahua (Sierra)	63,000	17,168	272	66
Cañar (Sierra)	23,000	3,844	167	40
Quimiag-Panipe (Sierra)	13,000	1,007	78	19
Salcedo (Sierra)	24,000	1,680	70	17
			\$414	100

SOURCE: National Plan, Table 2, CONADE.

It should be no surprise that most of the low cost projects are in the Sierra, where population densities are high, and where land is cleared and road infrastructure is already in place. AID's selection of the Salcedo and Quimiag-Penipe projects is an attempt to support a low "investment" cost model of IRD. However, while the investment cost is low in these projects, it should be remembered that the broader range of technical and social services in the AID-financed IRD projects results in total costs which are not accurately reflected in Table III.2.

c. Total Costs per AID Beneficiary

Three ways are used to estimate cost per beneficiary for the two AID-financed IRD projects. The first is to count only the costs included in AID's IRD "Project". The second includes the costs in all the AID's IRD FY 1980-82 "Program" (including the centrally funded support for Rural Training, the proposed FY 1981 Health, Potable Water, and Nutrition Project, the proposed FY 1981 Forestry and Natural Resources Conservation Project, and the proposed FY 1982 Rural Employment Project). The third method includes all GOE counterpart under the entire AID-financed IRD Program. Table III.3. contains these three estimates, which USAID considers favorable compared to other IRD projects in Ecuador.

TABLE III.3

Total Costs per Target Group Beneficiary in AID's IRD Projects

Project	Including only AID IRD Project Costs	Including all AID IRD Program Costs	Including all Counterpart Costs
(US\$ of Cost per Beneficiary)			
Salcedo	\$137	\$197	\$ 380
Quimiag-Penipe	342	451	1,053

3. Benefit/Cost Analysis Summary

The two IRD subprojects were analyzed using a traditional benefit cost framework; Table III.4. outlines the ratios obtained in this analysis. A fuller description of both of these computations is contained in the Economic Analysis sections of the two project descriptions. Complete statistical outlines of the projections used are available in USAID files. Both of the projects have B/C ratios of more than one, even with the inclusion of technical assistance costs, and both seem acceptably resilient with reference to either increased costs or decreased benefits.

TABLE III.4.

Benefit Cost Estimates for Quimiag-Penipe and Salcedo
IRD Projects

	Benefit/Cost Ratio	Internal Rate of Return
Quimiag-Penipe:		
Basic Computations	1.40	19.5%
Sensitivity Analysis:		
Increase Costs 20%	1.17	16.3%
Decrease Benefits 20%	1.12	15.6%
Salcedo:		
Basic Computation	1.75	23.1%
Sensitivity Analysis:		
Increase Costs 20%	1.46	19.2%
Decrease Benefits 20%	1.40	18.5%

4. Other Economic Feasibility Factors

Economic feasibility for the IRD projects is estimated in the benefit cost analysis, yet there are important questions of economic feasibility not addressed which are dealt with in this section. The first deals with financial feasibility at the farm level. It is possible that a project may be feasible when subjected to economic benefit/cost analysis, and yet the private financial rates of return to the farmer may be so low that the farmer may not be willing to make the changes implied in the project plan. The second is market demand for the products resulting from the projects.

a. Financial Feasibility at the Farm Level

For farmers who wish to engage in IRD project activities, there must be an attractive rate of return to them after interest is paid back to the development bank and costs for inputs and other factors deducted. Table III.5. outlines the percent return to the farmer from making the expenditures and taking the risks implied by the improved technology and changed crop and livestock patterns anticipated under the projects. From Table III.5. it is apparent that farmers would be earning an attractive financial return on their added expenditures. While the rates of return appear high, it should be remembered that many of these investments and expenditures are perceived by the average Sierra farmer as high risk; it may take expected returns as high as those shown to induce them to

change. The security of long-term credit, however, will be an important factor in inducing farmers to forego current income in favor of long-term investments like fruit trees.

TABLE III.5.

Farm Level Return to Farmer

Salcedo

	Farm Size	
	0 - 5 Ha.	5 - 10 Ha.
Central Zone		
1. Irrig. w/o Fruit	31%	X
2. Irrig. with Fruit	73%	57%
3. W/O Irrigation	X	19%
Eastern Zone		
4. Over 3,000 Meters	54%	31%
5. Under 3,000 Meters	42%	73%
Western Zone		
6. With Irrigation	49%	37%
7. Without Irrigation	38%	35%
8. W. Irrigation over 3,000 m.	35%	44%
9. W/O Irrig. under 3,000 mts.	29%	39%

SOURCE: Salcedo Project, Pages 177-179.

Farm Level Return to Farmer

Quimiag - Penipe

Crop Mix	Farm Size		
	0 - 1 Ha.	2 - 5 Ha.	5 - 10 Ha.
Quimiag			
Crop Type 2	66%	67%	79%
Crop Type 3	58%	66%	68%
Penipe			
Crop Type 1	62%	77%	—
Crop Type 2	71%	80%	73%
Crop Type 3	68%	—	77%

SOURCE: Costs of Production and Net Income from Table 18, Proyecto de Desarrollo Integral Quimiag-Penipe. Opportunity Cost of Capital assumed at 20%.

b. Market Demand for Production Created by the Projects

Estimating the demand for agricultural products is difficult at best. Often market analyses of geographic areas which represent less than a few percent of the total production of a product are based on the assumption that the particular product faces unlimited demand. This section attempts to extend beyond this assumption and examine market demand issues for the specific products for which there is expected to be expanded production under the two IRD projects.

In the aggregate, food demand is a function of income growth, population growth, and the propensity to spend increased income on food. Income in Ecuador grew during the decade of the 1970's at approximately 8% per capita per year. Population is growing at about 3.4% per year. Simply from income and population growth it would appear that demand for food products in Ecuador is growing annually at least 10%. This would imply that by the time the two IRD projects reach most of their production targets, the aggregated demand for food products in Ecuador will have approximately doubled. To this general pattern should be added the fact that the projects represent a very small proportion of the total production in any of the products (even apples) for the country as a whole.

As for cereals, the projects will result in a substantial increase in production due mostly to increased yields. Most of this increase will be consumed by the farm families themselves. For example, in Salcedo it is estimated that only 10% of the total cereals produced will be available for sale outside the project area. The small increment that does leave the project area is not likely to have difficulty finding a market since Ecuador is a substantial importer of food grains; in 1978 253,000 metric tons were imported.

As for deciduous fruits (apples, pears, and peaches), Ecuador imports large quantities, principally from Chile. Most of these are apples. There is also substantial domestic production, which has grown at an annual rate of approximately 6.6% during the last decade. The two projects together would increase the total Ecuadorean production area during a 20 year period by about 8%, using the current production area as a base. If the last 15 years' growth rate continued for the next 20 years, these two projects would account for less than 2-3% of the total increase. Wholesale prices for Ecuadorean apples in Quito have risen at an annual rate of 32% in the last three years, and it would appear that even a 6.6% area increase in production would not glut the markets. Another piece of evidence of the carrying capacity of the deciduous fruit market is the fact that imports have not dropped as domestic production has risen. In part this could be explained by quality differences between the Chilean fruit and domestic production, but there appears to be room in the market both for expanded domestic production and stable imports. To add to the above factors, the income elasticity for fresh fruit products is usually positive and above 1; this means that when per capita incomes increase, as they are doing in

Ecuador, the demand for fruit goes up faster than the population increase plus the income increase.

As for vegetable crops, the market should be divided into two groups, tubers and others. Tubers (particularly potatoes) are traditionally faced with delicate markets, subject to wide price fluctuations depending on supply and demand situations which vary widely from year to year. Because of their importance to the projects, potato markets will be discussed separately below. The market picture for the other vegetable crops is considerably less risky than potatoes. A review of price trends in major Ecuadorean markets over the past several years indicates steady price increases for most vegetables. Area in vegetable crops for the projects together will grow slowly over the first five years, reaching a total market share in national production of less than 5%. The only supply and demand study available indicates that there is an annual deficit of over 150,000 metric tons in vegetable crops. This deficit is calculated, however, on the basis of nutritional needs, and not on demand expressed at the market place. Fresh vegetables (excluding tubers) usually have positive income elasticities, but on average would not exceed 1.0. This would imply that the annual growth in demand is probably between 6-8%. Project increases are not likely to affect prices in any observable way.

Potato markets are almost impossible to predict with any confidence in South American countries. On the one hand there are many examples where increased production has virtually destroyed prices, yet on the other, potatoes continue to be a high income product with net income yields per hectare so far above cereals that large numbers of farmers are continually entering the markets and then leaving them, in a pattern which makes analysis difficult. What can be said about potatoes is that they are unstable; but that is not the same as saying that they are unattractive. Part of the instability comes from the fact that the income elasticity is low if not negative, potatoes being the poor man's food. This implies that they do not have the same strong push that comes from increases in per capita income, which is the case with fruits, other vegetables, and livestock products. That they are consumed by the poor implies that the project areas themselves will consume significant quantities of their own increased production. For example, in Salcedo it is estimated that approximately half of the increased production will be consumed directly inside the project area. Though project families will be experiencing increased incomes, even with a low average income elasticity large additional quantities are usually demanded at low family income levels.

Potato markets have the advantage that they are large; five to eight times as much area is harvested in potatoes in Ecuador as in all other vegetables combined. In the project areas potatoes are expected to increase more rapidly than other vegetable crops because the technology for potatoes is more widely known by the target group than any other, and the target group perceives the market risks as lower in potatoes than in

the other more specialized vegetable crops. This perception is largely due to the size of the potato market itself. To suggest that the target group not enter potatoes because the markets are unstable is to deny them of the one intensive crop which they can enter quickly with the technology they have, and it is to deny them of a significant chance to increase their incomes rapidly. In summary, the potato market is risky. Yet, the small farmer, who is usually averse to risk and is aware of the dangers in potatoes, is still likely to be ready to accept the risk if he can get credit and water. The IRD projects should probably proceed in encouraging increased production, which will be only a tiny proportion of national production.

Finally, as to livestock and milk products, there should be no market problems. High income elasticities and rapidly growing demand characterize these markets. Also, the production coming from the project areas will be only a tiny proportion of national production. In summary, except for potatoes, there are not likely to be important demand factors which would question the feasibility of production targets outlined in the IRD projects.

5. Credit Analysis

Credit for production and investment purposes is an important component of the IRD project efforts in Salcedo and Quimiag- Penipe. Almost \$1.9 million dollars in AID funding will be provided to small farmers through the BNF in the form of credit to increase agricultural production and net income. Principal types and uses of the credit will be (a) short-term production credit to promote increased yields through the application of improved crop and livestock technologies, (b) both short-term and medium term credits to allow farmers to alter the mix of crops cultivated on the farm by substituting higher value per land unit crops for lower value subsistence crops, and (c) medium-term investment credits for on-farm irrigation improvements so that the small farmer will be able to use his scarce water resources efficiently and effectively.

Credit availability, however, is not sufficient to fulfill the objectives of the IRD projects. Agricultural technology must be available and must be proven to be technically and economically viable within the small farmer eco-system. Sources of input supply and markets for output absorption must be reliable and efficient. And as far as credit itself is concerned, institutions must be willing to lend to the small farmer on attractive terms. And, perhaps most importantly, the small farmer must be willing to borrow, invest, and repay the credit.

This discussion of feasibility of the credit component of the IRD Program will consider first the presence or absence of these conditions, and second the reasonableness of the methodology employed to arrive at aggregate demand for credit in both IRD Projects.

From the viewpoint of demand for credit by individual small farmers, the farmer's willingness to borrow will depend on a host of socio-economic and cultural as well as strictly economic factors. Most important to the farmer's decision to borrow, however, are the interest rate structure, transaction costs, perceived risks, and expected returns associated with the investment.

With regard to the latter point, it was noted above that the expected financial returns to the proposed production alternatives are high. Depending on the size of the farm unit and water availability, the estimated return in Salcedo varies from a low of 19% to a high of 73%, and from 58% to 80% in Quimiag-Penipe. Although the proposed changes in production practices might be considered risky by the small farmers because of the subsistence nature of farming in both projects, the expected high returns should compensate for the risk involved. Equally important is that the agricultural technologies which will form the basis for the farm level improvements are not new to either project areas, and most already have been proven to be technically and economically viable for the small farm crop-animal system. The question of market feasibility has been discussed above, and marketing should not be a constraint to the expected return of the agricultural innovations.

An important variable in the small farmer's decision to borrow is the credit terms upon which production and investment credit will be made. Under the Project, both production and investment credit will be provided at BNF's highest rates (12% per annum). Production credit will be for up to one year and investment credit with repayment due in 5-7 years. These conditions should not present any disincentive to borrow, when compared to the expected rates of return to the agricultural innovations.

The cost to the small farmer of obtaining credit (transaction cost) can be an obstacle to an effective credit demand. The various trips which must be made from the comunas to the regional bank office, the numerous forms which must be filled out, and the likelihood of being refused credit for lack of legal land title are aspects of transaction cost which could affect the farmer's willingness to borrow. However, the group credit arrangements described elsewhere in this PP will keep the individual's transaction cost at a minimum. In summary, willingness to borrow by the individual farmer should not be a bottleneck to the agricultural credit program.

The reasonableness of the methodology for projecting aggregate credit demand depends on the acceptability of the adoption rates assumed and on the accuracy of the production costs and investment costs upon which the credit projections are made. As indicated in the discussion of the technical feasibility of the adoption rates (see Section III.B below), the rates assumed are at best modest and reasonable for both

projects. With regard to the issue of accuracy of the credit projections, the following step-by-step process was used. Surveys in the project areas were conducted to determine profiles of small farm units. The surveys revealed information on farm size, production technologies, crop livestock mixes, location in terms of altitude, costs of production, and socio-demographic characteristics. These data were analyzed, and typical farm profiles were constructed, with the primary discriminating variable being farm size. Group I included those farm units with up to 2.0 ha. of land; Group II categorized those units with 2.1 to 5 ha. of land; and Group III included those farms with 5.1 to 10 hectares. Once these profiles were constructed, farm budgets were analyzed by considering production objectives and the necessary inputs to meet these objectives. These results were then aggregated to the project level by taking into account the total number of farms expected to be included during the project years. The complete results are in an unattached annex titled Farm Budget Analysis of Model Farms and Credit Demand for the Quimiag-Penipe and Salcedo IRD Projects, available in USAID and LAC/DR files. The summary results are reflected in the budgets for the two individual IRD projects. As can be seen in those budgets, AID funds will be financing medium-term investment credits, while BNF counterpart funds will be financing short-term production credits.

6. Section 611(b) Compliance

Section 101 of the Foreign Assistance and Related Programs Appropriations Act, 1979, requires that A.I.D. apply to certain water and related land resource construction projects that it supports, the standards and criteria used in determining the feasibility of similar, federally funded projects in the United States. Section 611(b) of the FAA, as amended, requires the application, insofar as practicable of the Principles and Standards (1973) of the Water Resources Council.

The Mission believes that these requirements have been met in substance. The cost-benefit analyses prepared for the two sub-projects which involve construction show that discounted total benefits are greater than discounted total costs. The form and result of the analyses constitute accomplishment of the substantive economic analysis requirements of Section 611(b). Environmental considerations in project concept and general design have been addressed in the Initial Environmental Examination and will be fully integrated in the detailed planning and implementation of sub-project construction activities. This constitutes fulfillment of the substance of the environmental concerns portion of Principles and Standards.

The Mission concludes that the principles embodied in the applicable legislation have been met.

B. Technical Analysis Summary

Technical analyses of project components are included in the descriptions of the Salcedo and Quimiag-Penipe projects. The purpose of this summary is to deal with questions of technical feasibility common to both projects, and to examine the technical feasibility of the Project as a whole, including the functioning of the central RDS mechanism. Major questions to be considered are: (1) Do technologies to be used exist or must they be developed and tested?; (2) What is the feasibility of adoption of project recommended practices and technologies at the rates proposed?; (3) How feasible are the technological change targets?; (4) Are the marketing arrangements technically sound?; (5) Are the engineering plans for infrastructure construction technically sound, and are institutional capacities adequate?; and (6) Are the IRD management and technical support systems technically sound?

1. Feasibility of Production Technology

The production technology base of this Project is relatively modest; there are no packages to be developed nor new technologies to be introduced to these regions which do not already exist there in at least modest versions. Improvements in these technologies will be developed under the Rural Technology Transfer (Title XII) System Project. The main objectives in a technological sense therefore are to move more farmers to the levels at which the better small farmers in the areas or adjoining areas already are producing. In that sense the IRD projects are relatively unadventurous. The technical issues center around the rates at which this technological diffusion can take place.

While the production technologies exist, the rates at which they can be diffused is seriously limited by the availability of water. The technology of water use is therefore important to all other technological improvements. There are two basic technological models used in the Project for irrigation expansion and improvement. The first involves well known and applied INERHI irrigation technology; this basic approach will be followed in four irrigation areas: Quimiag-Penipe, Dávalos-Chiriboga, and the feasibility study of Nagsiche. The second approach involves the improvement of existing rudimentary irrigation systems complemented by farm level irrigation techniques for target group small farmers. This technology will require some adjustment in INERHI's approach, which has traditionally been large scale new irrigation schemes. INERHI has more than 50 agronomists trained by FAO in farm level irrigation technologies; this cadre will require some additional training and assistance to provide the necessary support to the small farm irrigation systems. The Project therefore will provide project-specific technical assistance in small farm irrigation systems to INERHI, and also project-specific training funds for INERHI personnel to leave Ecuador for short courses and field visits to see this type of technology in action.

2. Technical Feasibility of Adoption Rates

There are two separate technical issues with reference to technological change. The first relates to how fast farms can be expected to adopt the changes, the second to the distance they can be expected to go (i.e., how much yield increase can be expected to be obtained, or the degree to which the crop mix may alter). This subsection deals with the feasibility of the rapidity with which target group farms are expected to enter the respective IRD project and make the proposed yield and crop mix changes. The following subsection deals with the distance issue.

The two IRD project development teams approached this issue from different perspectives and developed projections based on two different approaches. The Quimiag-Penipe team projected a gradual inclusion of target group farms into the project, assuming that the conservative nature of this inclusion rate will take into account the normal reticence of traditional farmers to adopt new cultivation patterns and practices. Therefore, in Quimiag-Penipe it is projected to take five years to include 90% of the target group in project activities. In Salcedo the projections assume that full inclusion of the target group into the project will happen in three years, but the projections are given a conservative bias by assuming that no changes will occur during the first two years of this activity. In addition the Salcedo team assumed that the results of the inclusion will be less than full adoption (58%); yield targets have been reduced in the income tables to account for this.

Thus the two projects have approached the problems of inclusion and adoption rates differently. Quimiag-Penipe assumes a slow inclusion rate which never reaches more than 90% of the target group, but assumes full

adoption inside these targets. Salcedo assumes a more rapid and complete inclusion rate, but assumes two dead years without any adoption, and then only partial adoption and yield response for all target group farms. Table III.6. contains the projected inclusion and adoption rates for the two subprojects.

TABLE III.6.
Inclusion and Adoption Rates for Technologies in IRD Subprojects
(% of target group farms)

<u>Project Year</u>	<u>Quimiag-Penipe</u>		<u>Salcedo</u>	
	<u>Inclusion</u>	<u>Adoption</u>	<u>Inclusion</u>	<u>Adoption</u>
1	10%	100%	21%	0
2	30%	100%	42%	0
3	60%	100%	100%	42%
4	90%	100%	100%	52%
5	100%	100%	100%	58%

3. Feasibility of Technological Change Targets

Both of the projects expect two types of changes in the target group farms. These are changes in production practices (leading to yield increases per Ha.) and changes in production patterns (changing the mix of crops they produce).

Quimiag-Penipe yield targets are presented in Table III.7. for crops and in Table III.8. for livestock. Table III.7. takes into account the mixes of crops proposed under the project and different environmental conditions. With yields beginning at levels which are in most cases less than half the national current average, it would appear that the yield targets are reasonable, especially when the rate at which they occur is as slow as projected.

Table III. 7.

Yield Improvement Targets
Quimiag-Penipe IRD Project
in QQ/Ha.

Products	Present	Executed	% increase
<u>Quimiag</u>			
1. Group II			
Potatoes	213	350	64
Corn-Beans:			
Corn	13	23	77
Beans	2	5	150
Corn (alone)	14	24	71
Barley	22	32	45
Broad Beans	13	17	31
2. Group III			
Potatoes	162	312	92
Corn (alone)	13	23	77
Barley	12	20	67
Broad Beans	11	17	55
<u>Penipe</u>			
1. Group I			
Potatoes	295	350	19
Corn-Beans:			
Corn	14	24	71
Beans	7	7	0
Corn (alone)	10	20	100
2. Group II			
Potatoes	160	310	94
Corn-Beans:			
Corn	10	20	100
Beans	3	7	133
Corn (alone)	11	21	91
Corn-Apple:			
Corn	11	20	82
Apples	108	220	104
3. Group III			
Potatoes	177	327	85
Corn-Beans:			
Corn	10	20	100
Beans	4	7	75
Corn (alone)	7	17	143

Group I: Farm units located between 2,500-2,800 meters above sea level.
Group II: Farm units located between 2,800-3,000 meters above sea level.
Group III: Farm units located between 3,000-3,200 meters above sea level.

TABLE III.8.
Quimiag-Penipe Yield Target
for Livestock

Livestock Type	Yields		Increasing Percentage
	Present	Expected	
Cattle Milk (Liters/animal/year)	3.5	5.0	70.0
Hogs-meat (pounds/animal year)	165.0	200.0	82.0
Sheep-meat (pounds/animal/year)	52.1	70.0	74.1
Sheep-wool (pound./animal/year)	3.4	4.0	85.1
Guinea pigs-meat (pounds/animal/year)	1.3	1.5	86.0
Poultry (eggs/hen/year)	120	180	67.1

Salcedo yield targets are more integrated with assumptions about inclusion and adoption. It is assumed that 100% of the target group will be included and that all will achieve some level of adoption. Since all will not adopt fully, the yield targets are presented in two forms: the targets which would be achievable if all target group farms adopted the complete technology package, and the adjusted yield targets which are assumed to represent the average level of adoption. Experience in the Salcedo zone with small farmers indicates that the full adoption target yields are feasible; yet the adjustments for partial adoption would appear more realistic given the natural reticence of local farmers to change. Table III.9. presents these two types of targets.

TABLE III.9.
Salcedo Yield Increase Targets

Crop	Traditional Yield	Yield Target at full Adoption		Average adop. Yield Levels Used in Projections	
		QQ/Ha.	% Incr.	QQ/Ha.	% Incr.
Barley	13	20	54%	13	0%
Corn/Beans	15/8	15/10	0/25%	15/10	0/25%
Potatoes	250	400	60%	350	40%
Wheat	18	24	33%	18	0%
Fruit	0	480Box.		480Box.	

4. Marketing Feasibility

The issue of demand for project outputs was discussed in the Economic Analysis Section above. The issue for technical feasibility is the marketing technology, including transport feasibility and technical ability to manage the process.

Both of the IRD projects have a reasonably good distribution of internal access roads. Just 10 kilometers of extensions are needed to complete the systems. Maintenance and improvements are necessary to make the existing roads dependable in bad weather, and the projects contain the necessary funding for these improvements. Both projects are entered by major highways (Salcedo is dissected by the paved Pan-American highway; Quimiag-Penipe is entered by a major road from Riobamba). Within an hour from almost any production area in either of the projects, products can be in a major market center. From these market centers, paved highways connect with the principal population centers of Ecuador. Therefore, both projects would appear to face few difficulties with regard to internal transportation, proximity to intermediate urban marketing centers, and proximity to major urban market demand.

As to marketing technologies, technologies for post harvest handling, packing, and storage exist in Ecuador, but target group farmers are currently far from having a working knowledge of them. Considerable technical assistance and financial support is planned for this effort. The establishment of small-scale packing centers for fruits and vegetables in Quimiag-Penipe is planned, and in Salcedo a more centralized fruit and vegetable marketing system is contemplated. Little difficulty in marketing grains and livestock products is foreseen.

5. Engineering Plans and Engineering Capacity of Implementing Agencies

The construction of various types of infrastructure is contemplated in both projects. The technical issues are whether there are technically sound plans for the construction and whether the implementing agencies have the necessary engineering and construction supervisory capacity to carry out final design and construction.

As to irrigation, INERHI is the Ecuadorean institutions charged with the responsibility for development and construction of all such infrastructure. There are four irrigation activities planned for this Project. INERHI has designed and constructed millions of dollars worth of these types of projects and has widely demonstrated its technical and engineering capacity to administer the process. This is not to say that INERHI has not had its problems, but it is the judgement of USAID (as well as irrigation project teams of IBRD, IDB, and others) that INERHI does not need engineering technical assistance. There is need (as has

been earlier explained) for technical assistance in the improvement of rudimentary small farm irrigation systems. This assistance, however, is not in engineering (the engineering is simple, requiring no more sophisticated abilities than exist in abundance in INERHI), but in extension, in training, and in being willing to come down a notch in technical sophistication to address the appropriate technology of low cost small scale improvements.

The plans for the INERHI construction activities to be included in this Project are voluminous. Annex D contains excerpts from these planning and design documents for the Quimiag-Penipe Project, and an unattached annex available in USAID and LAC/DR files contains the complete analysis of the irrigation systems proposed for Salcedo. In addition to the existing plans, a condition precedent will require presentation to and review by AID of completed final plans, designs, and construction specifications prior to disbursement of irrigation construction funds.

As to roads, most of the activities under the projects are to provide new surfaces and continuing maintenance on existing access roads. The provincial councils with the assistance of the MOP and MAG have built and maintained the existing access roads in the projects. While many of these roads need improvement, there are segments which are currently both properly constructed and adequately maintained. These segments were visited by the project development team, and it is the team's judgement that the responsible institutions are technically capable of undertaking the road improvement, maintenance and minor construction activities outlined in the Project. Details on this component of the projects are included in Annex D.

The principal type of building construction under the Project will be simple community centers which are to be constructed under the direction of MAG, with the collaboration of members of the local communities. The Ministry has constructed many of these casas comunales in other areas and appears to have had little difficulty. Details on these centers are included in Annex D. Construction of input, storage, marketing and other facilities will use the same simple construction methods, which is also outlined in Annex D.

6. Technical Feasibility at the RDS Level

The management of IRD requires two types of technical capacities. The first is technical capacity in the subject matter of IRD, which covers the full range of agronomic, engineering, health, and many other technical specialities. A careful review of the capacities of the expected central RDS mechanism and its multiple sources of outside technical assistance was reviewed, and where technical gaps were identified, AID TA was included in the Project (See Section II.A). It is USAID's judgement that with these external sources of technical assistance, the central RDS mechanism will have the necessary technical capacity to manage the IRD process.

The second type of technical capacity required to manage the process of IRD is in management and training technology. It is in this area that more assistance is needed than in the strictly rural technology skills. Considerable technical assistance is planned in this Project to strengthen both the central RDS and the IRD projects themselves in both of these fields. This outside assistance appears to be about as much as the system can usefully absorb at this time, and with it, it is reasonable to assume that the chances for success are good.

C. Social Soundness Analysis

1. Social Setting

The IRD approach attempts to combine resolution of the areas' material and social needs with support of those sociocultural elements which have been identified to be positive. It also attempts to eliminate some of the existing social barriers to receiving developmental assistance and to participating in development decisions. To achieve the above objectives, considerable information has been reviewed for the IRD project areas concerning the populations' cultural and social structures and their present involvement in the processes of problem identification and design of solutions.

Both project areas are racially mixed. About half the Salcedo area is Indian, while the other half is mestizo (the groups varying by dress, language, beliefs, and cultural self-awareness). Quimiag-Penipe is principally mestizo, with an important Indian minority in Quimiag. There have been deep and bitter conflicts between the Indian and mestizo groups throughout Ecuador, as well as between each of them and the dominant "white" society. The Project hopes to have a positive influence upon the racial and cultural conflicts among the beneficiaries and between them and outsiders.

The roots, however, of these conflicts are deep. The ownership of land and the patterns of production have historically exploited the campesinos (particularly the Indians). Huasipungo, for example, is a form of land tenure once common to the Ecuadorian Sierra in which small parcels are lent to campesinos in exchange for free labor on the hacienda lands. Even though this and other similar forms of precarious land tenure were legally abolished in 1964, variations of the practices are not uncommon today, particularly in the Quimiag-Penipe area.

The reason for the campesinos not being able to overcome these ancestral problems by themselves are also of a social and cultural nature. Without access to education, factors of production, or other assets, poverty and discrimination have always plagued the poor farmers. In fact, processes have slowly eroded the conditions of the campesinos compared with the rest of society. Particularly as the scarce land they own has become even more fragmented, the resulting inability to earn even subsistence has

led to more relative poverty and to migration. The Project beneficiaries are largely those campesinos occupying the base of the social pyramid, below the dominating elite and the groups with some economic and political power. And the Indians are generally of lower status than the mestizo groups within the project areas. The Project has been designed to aid both the Indian and poor mestizo groups. Generally, both groups have members who fall into three land holding types. Minifundistas are those small landowners who use mostly the labor of their own families on their tiny plots. Parcelarios are sharecroppers who work under a system called aparcería - a form of rent of the land in exchange for half the crop production. Both minifundistas and parcelarios must usually work part time on nearby haciendas or engage in temporary migrations to coastal plantations. Finally, there are the landless or those who are almost landless, who are typically underemployed laborers and eventually are the first to migrate to the cities.

2. Social Assets and Social Effects of Project

While some of the preceding elements constitute social constraints which the Project aims at modifying, there are others which are assets and instruments for action and which need to be preserved. These are derived from certain patterns of individual and group behavior and organization. Through there are some differences between Indians and mestizos, generally the campesino beneficiaries have attributes which are similar to those of other Sierra small farmers: hard-working yet not truly ambitious, humble yet not overly submissive, cooperative, gregarious, and relatively accessible. All these qualities should become positive elements of the Project, in addition to the contributions of women, which are analyzed later in this section.

The Project will, for example, support campesino organizations. Actions are intended to be implemented through direct consultation with the various groups and their elected representatives. In both Quimiag-Penipe and Salcedo, organizations are of two types: ones which have emerged endogenously, primarily the traditional system of local organization known as the comuna, and others which are not traditional but which often have been put to good use by the campesinos, such as water users' associations.

Comunas are the leading social force in both Project areas and almost all target group members belong to one. Comunas organize the campesinos into a group structure, as well as provide them with administrative arrangements. The comuna's General Assembly elects a President and members of the Cabildo (an operating board), which have responsibility for decision-making in matters concerning the collective welfare, thus creating a democratic form of representation. However some comunas have had their problems, with factions or outside power groups trying to dominate the power structure. And even in united comunas, the membership often elects its more worldly colleagues to the cabildo to represent them to the outside world, while retaining an unelected, informal group of older persons as the true decision makers.

When associated or working as a group, campesinos have proven to be a formidable force. This collaboration can take the form either of reciprocal interfamily aid (randipac, or mutual help, and jochas, reciprocal forms of collaboration under traditional local celebrations) or of group undertakings called mingas. The minga is a form dating from Incan times, which has been implemented in both project areas in the construction of schools, latrines, minor roads, irrigation works, and other small infrastructure. The comunas are important in the organization and implementation of the mingas. Under the two subprojects this process will be supported, and an inter-comuna system is being considered which could be used for purposes of inducing participation in more ambitious construction endeavors and other activities.

The IRD projects are organized to support and work through the comunas and mingas. Each comuna will have a signed agreement with the project office, spelling out the responsibilities of each. The comunas will organize the campesinos for mingas, field days, group meetings, and other organized activities important to the project. The project office will assign a contact agent to each comuna (through some contact agents may deal with more than one comuna). The contact agent, who hopefully will be from the project area if not from the comuna itself, will be the prime point both for assuring that services reach the comunas and for feedback. In addition, feedback will be provided through the project committees, composed of persons who represent the collectivity of comunas as well as representatives of the local offices of the implementing agencies.

The project will also work with water users' associations, both existing ones and ones to be created. This is important since irrigation -both increased availability of water and improved water management practices is the key to the intensified agriculture envisioned under the subprojects. Water users' associations are common in Ecuador, particularly in the Sierra. A 1977 study entitled Irrigation Institutions and Water Users in Ecuador, prepared under the direction of Utah State University, states:

"The vast majority of private irrigation organizations are in the Sierra where farming and irrigation have been traditional for centuries. This is the area of predominant Indian ancestry where communal organization and mutual cooperation have long been customary. These irrigation entities are common throughout the Sierra, most generally among the small and medium class farmers."

The study investigated 35 water user associations, of which 24 were in the Sierra. They ranged in size from 19 members to over 2,000. The large majority of the associations had a formal organization with an elected board. Over 80% of the associations surveyed met regularly or as the need arose. The study found that between 50% and 100% of the members attended general assemblies when convened, demonstrating a high degree of participation by the general membership. The study also found that over 40% of the associations made no decisions regarding the scheduling of irrigation water

delivery. This led to instances of discontent and to complaints of unjust distribution of the water resource. The study observed that many users appeared to irrigate more than was necessary or beneficial and concluded that improved delivery scheduling coupled with efforts to increase user awareness of consumptive use requirements would increase the overall efficiency and availability of water significantly.

The Project will build on this traditional acceptance of collaboration in management and operation of irrigation distribution systems by the water-users themselves. It will address through technical assistance and credit the problems of efficient and equitable use of the water to be made available. By so improving the campesino situation, it is expected that at least some of the reasons for discrimination will fade, while giving the campesinos the means to counteract the actions of the dominating and exploiting elites and to be able to subsist on their own plots of land.

The IRD projects thus are designed in a socially appropriate way, using institutions which are familiar to the campesinos and are considered socially positive, and engendering participation to the maximum possible. Likewise, throughout the IRD projects, an effort will be made to make them as culturally appropriate as possible. Contact agents and technicians, for example, will be taught the basics of sociology and of how to interact positively with campesinos, and they will be encouraged to respect the customs, language, and beliefs of the people they are dealing with. As the IRD mechanism expands, and planning is begun on the Jipijapa Project in Manabí Province, some changes will have to be made to reflect the realities of that area. The coastal peasant, for example, has a number of cultural characteristics different from his Sierra counterpart, and cooperatives are much stronger on the Coast than are comunas. Nonetheless, the basic social concepts of the Project remain the same, and each IRD project will attempt to use local organizations, engender participation and feedback, and be a socially and culturally positive force in the local area.

The benefits of the IRD projects are primarily economic and are described in earlier sections. By giving small farmers the opportunity to become self-sufficient and produce a cash surplus on their own holdings, the need for temporary migration should lessen considerably, thus creating more community and family cohesiveness and a greater sense of control over their environment. The Project has thus been judged by USAID to be culturally and socially positive, with no negative factors foreseen.

3. Impact on Women

Because women in rural Ecuador, especially in traditional Sierra areas, suffer particularly from lack of economic opportunities and from lack of participation in decision making, a special effort will be made within the IRD projects to deal with their needs. This subsection discusses the specific problems of women and how they will be addressed.

In both the Salcedo and Quimiag-Penipe areas, more than half the local population is female. It is the married campesino woman who takes care of from 60 to 80% of the subsistence level agricultural and livestock activities, particularly if the husband is away at another job. Her work day generally ranges from 14 to 16 hours; and the installation of electricity in the home can tend to make her day even longer, as she is then able to engage in such activities as mending in the evening hours. The campesino woman's hands are never idle. She may be going to collect firewood or alfalfa but is spinning wool or sisal or is crocheting on the way. Child care is an intimate and almost continuous part of her life.

In matters of decision-making, the woman has a real, if quietly executed role. Her opinion is expressed within the confines of her home, at times not even directly to her husband but simply in his presence. Though in public a man would never admit to consulting with his wife, he is generally aware of her opinions and takes them into account. In those instances of male migration, a phenomenon common to both the Quimiag-Penipe and Salcedo project areas, the woman assumes the head-of-household role, at least temporarily. In those instances she generally assumes direct decision-making authority, though she may not necessarily express those decisions in public. A brother or older son typically may act as her "voice".

There are three other cultural factors which must be taken into account when designing IRD interventions which impact on women. First, cultural norms dictate that women should not frequently or freely associate with men outside their own families. Second, when there is a status differential (as in the case between campesinas and ministry technicians), the resulting barriers to communication are further intensified. Both these attitudes are the reflection of cultural values, and though their modification is beyond the scope of integrated rural development activities, there certainly are manners to design interventions in ways that will not be impeded by them. Third is a language/literacy factor. In those parts of the IRD project areas which are Indian (about a third of the total) most women have had little exposure to Spanish and are effectively monolingual Quechua speakers. Even in mestizo areas, illiteracy rates are much higher for women than for men, and most women have had little experience in communicating with outsiders.

In light of the above considerations, and in order to incorporate the woman as an active participant in the development process, the following actions have been contemplated within the IRD projects.

a. A representative proportion of the technical staff (both social promoters and other technicians) will be women. This will serve as a primary means of opening the lines of communication between the IRD projects' personnel and campesino women. This is critical since much of the subsistence level agricultural and livestock activities are primarily the domain of women. Awareness of women's need and reactions, as well as

appropriate responses to them, will be important in making or breaking certain aspects of the proposed project programs.

b. For similar reasons, if at all possible at least one female Quechua speaker will be included as a staff member. Monolingual Quechua speakers represent a sizeable minority among women in the project areas, and their needs and special problems must be taken into account if project interventions are to work. In addition, and particularly if it is not possible to have a female Quechua speaker as a member of the technical staff, as many local female bilingual community members as possible should be recruited and trained as contact agents or their assistants.

c. An on-going process of research/action on campesino women will be incorporated into the projects. To date, little is known of rural women's cultural subpatterns, agricultural and livestock activities, and social communication patterns, and of their opinions on these topics. For this type of research it is essential that the investigators be female.

d. Since programs actively incorporating women are relatively new, two additional lines of action to facilitate their implementation will be executed in each IRD project. One is a process of orientation and sensitization with the entire project staff on the incorporation of women as active participants in the IRD programs. This will include discussions of the reasons for their inclusion, methods of working with women's groups and with groups including both sexes, problems that might result, specific needs of women, and other such topics. The second includes similar types of sensitizing activities at the local community levels with women and particularly with the men.

e. Finally, the following specific types of activities will be undertaken within the entire IRD program directly oriented toward women: (1) training in agricultural techniques, especially those requiring more intensive labor inputs proposed for introduction in the project areas; (2) training in better methods of breeding and raising such animals as chickens, pigs, rabbits, guinea pigs, and sheep, as these animals are usually totally under women's management; (3) facilitating the sale of surplus production (agricultural and livestock) in ways which can be managed by women; (4) creating opportunities to exercise leadership roles, preferably initially among other females; (5) encouraging the organizing and managing by women of cooperatives for the various cottage industries existing in the area, such as the making of rope, hammocks, candy boxes, and jam; (6) training in the making of handicrafts using locally available raw materials (e.g., sisal, cornstalks, wool) to provide nonagricultural sources of income; (7) training in literacy, making use of written materials available in rural areas, such as directions on containers for agricultural, livestock, and available packaged food products; and (8) training in health, improved diet, care of children, sanitation, and other similar topics relevant to women in their daily lives.

D. Institutional and Administrative Feasibility

There are three principal questions regarding institutional and administrative feasibility: (1) Is the institutional structure the most appropriate?; (2) Do the institutions involved have sufficient capacity to carry through the Project effectively?; and (3) Are the administrative arrangements sound? These will be addressed in the following subsections

1. Institutional Structure

The Project is putting considerable funds and TA efforts into creating an IRD mechanism under the RDS, an institution which is yet to be created. Yet there are at least two alternative institutional structures, already well known in Ecuador, which could be used to effectively carry out IRD projects. The question becomes why create at considerable cost a new structure when seemingly acceptable alternatives already exist

The answer revolves around the fact that while individual IRD projects could be carried out successfully under the alternative systems, the latter have deficiencies which preclude them from exercising effective coordination of implementing agencies and prevent them from attracting the necessary funding and support to replicate IRD projects. The model presented herein, on the other hand, is a system designed to engender support and coordination at all levels, and which can be used repeatedly to carry out a number of IRD projects throughout the country.

As discussed in Section II.A., the two alternative IRD systems most widely used and practiced in Ecuador are: (a) MAG's PIDA model and (b) utilizing regional development authorities. The former has successfully carried out a number of activities. Its biggest weakness, however, has been its inability to effect coordination among the various institutions of the sector, forcing MAG to carry out almost all PIDA activities on its own. The regional development model is being used by IDB. While there is often an advantage in working strictly with a regional institution, such projects generally lack national support, have difficulties in effectively coordinating with the implementing institutions, and are difficult to replicate. Also, regional authorities now exist only in about half of Ecuador.

The system to be institutionalized under this Project is designed to address these deficiencies. With the RDS a supra-cabinet level institution, it will be able to garner the necessary top-level political and economic support for IRD projects, it will be able to effect the necessary coordination among institutions, and it will be able to effect the necessary coordination among institutions, and it will be able to attract high quality professionals to design and help implement the projects. By having decentralized project offices, to which implementing institutions will detail personnel, the system will

have effective means to implement, administer, and monitor the projects. By utilizing regional development authorities or their equivalents for support, coordination, and planning assistance, the projects will increase their chances for effective operation within the local political and social contexts. And by having mechanisms built in for the use of direct contact agents, for the use of local small farmer organizations, and for feedback, the system should maximize local participation, local support, and local delivery effectiveness. In short, an integrated system has been designed which can be readily replicated as the GOE decides to plan and implement each of its IRD projects.

The major issue is the creation of the RDS, a discussion of which is included elsewhere. Though its creation appears almost certain, there is always the chance that it could fall through. In this case, the Project could proceed using a modified version of the PIDA model (with CONADE's UNDER doing the planning, and with institutional coordination achieved through written agreements between MAG and other institutions), but this would not be as ideal as the proposed RDS model (see Issue N° 2). Finally, there is the issue of where the RDS will be placed in the GOE structure. Although CONADE and the Vice-Presidency were being considered, it has now been decided that RDS will be created in the Presidency. The important thing is that the RDS be created at a supracabinet level where it can generate coordination and top-level support.

2. Institutional Capacity

Annex E analyzes each of the GOE agencies that will play a part in the execution of the subproject activities.

It is clear that these implementing institutions have the technical capacity to carry out their roles in the IRD projects. However the capacity among the institutions to plan, coordinate, manage, administer, and evaluate the projects is weak. The RDS, of course, has not yet been created; the regional development authorities vary widely in their abilities, and only four of the projected eight currently exist; and MAG and other institutions have not been truly effective in setting up good field level organizations to manage field activities and to bring about widespread campesino participation.

The fact that inadequate institutional capacity exists does not mean that the Project should not be undertaken. On the contrary, the main objective of the Project is institution-building. Considerable TA will be given to build institutional capacity at all three levels. The main purpose of this discussion is therefore to demonstrate that USAID recognizes the inadequacies, has studied their characteristics, and has designed appropriate TA to address them.

As discussed in Section II.A., an analysis was undertaken of what assistance will be provided the RDS by FAO and the IBRD. AID's strategy is to fill the essential gaps. Therefore TA will be provided in such areas as IRD administration and operations, IRD information systems and data processing, IRD evaluation and monitoring systems, and IRD training approaches. Likewise, analysis was carried out on the capabilities of CRM to help design and coordinate projects, plus on what would be required for a new regional development authority to be created and develop those capabilities. TA was also designed to fit these objectives.

As to the local level, analyses were carried out on the various methods currently utilized in Ecuador to organize at the local level to get services to small farmers and to receive their feedback. These included PIDAs, ASAs (MAG's local agency offices), the IBRD's Tungurahua IRD model, and the means by which the regional development authorities organize their local level interventions. Again, project management was found to be the weak link throughout, and the TA has been geared to build this capability in the project offices to be established in IRD areas.

In summary, TA has been designed to address the weaknesses existing at the various levels of the proposed IRD system. This TA, and related expenditures, will amount to \$1,838,000 from the Project, plus additional inputs from other AID projects which are part of the IRD program. The objective is to build strong and lasting institutional capabilities at all levels of the system.

3. Administrative Arrangements

Administrative arrangements are described throughout Section II. In brief, the basic arrangement will be the written agreement, between the RDS and the implementing institutions, between the RDS and the respective regional development authority or its equivalent, and between the IRD project office and the local communities. These arrangements will be the basis for and will spell out all action responsibilities, reporting requirements, and other details of mutual interest.

At the project level, the IRD project office will have the basic responsibility for administering the local level activities. All technicians, though detailed to the project by the various implementing agencies, will report to the project director and will be identified as members of the project team. The project office will thus have control over and responsibility for all personnel assigned to it. Likewise, though large expenditures will be made by the RDS, the project director will be allowed to approve the vast majority of project expenditures. The project office will have an administrative staff, and all reports will flow from the field to it. Thus the local project office will have effective control over all local level activities. Only a limited

number of summary reports will be required to be sent from the project office to the RDS.

As to financial arrangements for the Project, further operating details will be outlined in an RDS Manual of Operations, but the central mechanism will be the IRD Fund. As discussed in Section II.A., the Fund will be a mechanism to channel funds from disparate national and international sources to discrete IRD project activities. The Fund will be administered by the Central Bank but controlled by the RDS. Only the RDS will be allowed to draw from it.

Finally, the contracting arrangements for the Project merit discussion. Ideally, those elements of TA going directly to the RDS and to the regional development authorities should be handled under host country contracts. Unfortunately, as discussed in detail in the PP for the Rural Technology Transfer System (Title XII) Project, the GOE contracting capacity is extremely weak, and the process is hindered by complex regulations requiring compliance bonds and other requirements which work as disincentives for firms to enter into such contracts. Also, individuals under contract to the GOE have suffered from long delays in receiving payment and from other contractual problems. Under the RTTS Project, an effort will be made to establish a capacity within the RDS to effectively carry out its own contracting. Since the RTTS Project is expected to be underway by the time some of the TA inputs for this Project are ready to be contracted for, and since the contracts under this Project will be relatively simple (unlike the RTTS Project), there is a possibility that host country contracts can be entered into for this aspect of the TA. This will be carefully assessed when the time comes for entering into the contracts.

Whether that aspect of the TA is contracted through a host country or an AID contract, the contracts should ideally be made with one or two organizations which can handle the logistics of having a number of both short and long-term consultants in-country. As well as a number of consulting firms and U.S. universities which could provide the required services, USAID is considering contracts with international organizations such as IICA or the Rockefeller Foundation's IADS. The advantages would be that they would more likely be able to supply qualified Latin Americans (the preference of the GOE) and that they would be more willing to enter into contracts with the GOE. So when the time comes to enter into contracts, USAID and the RDS together will divide the TA requirements into logical packages (probably one or two) and will decide on firms, universities, and international organizations which prequalify. Requests for technical proposals will be sent, and selection will be made using standard selection procedures. Source waivers for the use of grant funds will be processed by USAID on a case-by-case basis as the need arises.

As to the TA going directly to the IRD projects (though channeled through the RDS), AID contracting will probably be the most appropriate. Almost all of this TA consists of two long-term (2 1/2 years each) advisors in IRD project management, one for each of the two IRD projects. Though these consultants are expected to be of considerable assistance in getting the IRD projects to run smoothly, they will also be playing a monitoring role for AID and thus will be looked upon in large part as AID's people in the field. For this reason, AID contracting seems called for. The consultants will have to live in the field, either in the project sites or in the nearby provincial capitals, requiring a special type of person. Since it may be easier for USAID to directly identify such individuals than to obtain them institutionally, USAID is considering direct individual contracts. As to the two years of TA in irrigation, this will either be contracted through a firm specialized in this area or as part of the broader contract described in the preceding paragraph.

E. Financial Analysis and Plan

1. Financial Plan - AID Contribution

The Project financial plan is presented in Table III.10. The first three columns indicate the proposed AID financing for the Project, totalling \$11.8 million. Of this, \$9.8 million is designated for loan funding, \$2.0 million for grant funding. Obligations are expected to be made as follows (\$000):

	<u>Grant</u>	<u>Loan</u>
FY 1980	200	5,000
FY 1981	500	4,800
FY 1982	500	
FY 1983	400	
FY 1984	400	
Total	<u>2,000</u>	<u>9,800</u>

The grant financing is exclusively for the costs of TA advisors and some of the planning and other studies. Also, a small amount is to support the resident advisors for the two IRD projects. All other equipment, logistic support, and planning studies for the Project will be loan financed. Because of the large amounts of TA needed to institutionalize the IRD system, and because of the importance to the institutionalization effort of all the TA elements programmed, USAID believes that it is essential to the success of the Project that these items be grant financed.

USAID believes that if such TA were loan funded, the GOE's tendencies would be to minimize use of outside advisors - particularly

Table III. 10
Project and Program Financial Plan
 (US\$ 000)

	AID			GDR		TOTAL		
	Loan	Grant	Total	Other Projects	This Project	Other Projects	This Project	All Projects
A. Assistance to RDS:								
1. Technical Advisors, Project Mgmt.		640	640	1,520	1,006	800	1,646	3,966
2. Planning, Surveys, Studies	250	210	460		210		670	670
3. Vehicles and Equipment	300	.	300		212		512	512
4. Training				1,050	120	786	120	1,956
B. Regional IRD Planning and TA:								
1. TA to Regional Authorities		128	128	280	128	250	256	786
2. Planning of Jipijapa IRD Project	160	80	240	200	240	150	480	830
3. Planning of Other IRD Projects		180	180		180		360	360
C. Salcedo IRD Project:								
1. Irrigation	1,308		1,308		1,167		2,475	2,475
2. Credit	723		723		1,458		2,181	2,181
3. TA to Project		280	280	240			280	520
4. TA to Farmers					653		653	653
5. Vehicles and Equipment	70	20	90				90	90
6. Nurseries, Marketing Facilities	352		352		19		371	371
7. Road Improvement	226		226		174		400	490
8. Land Titling, Tenure Studies	71		71		140		211	281
9. Forestry, Soil Conservation				191	90			281
10. Community Participation Centers	238		238		112		350	350
11. Health, Water, Nutrition				554		231		785
12. Other Employment Opportunities				450		350		800
D. Quimlag-Penipe IRD Project:								
1. Irrigation	2,242		2,242		2,242		4,484	4,484
2. Credit	1,159		1,159		2,259		3,418	3,418
3. TA to Project		280	280	240			280	520
4. TA to Farmers					653		653	653
5. Vehicles, Equip. & Logistic Support	47	20	67				67	67
6. Nurseries, Marketing Facilities	276		276		260		536	536
7. Road Improvement	240		240		400		640	640
8. Land Titling, Tenure Studies	74		74		83		157	157
9. Forestry, Soil Conservation				632	672			1,304
10. Community Participation Centers	113		113		87		200	200
11. Health, Water, Nutrition				187		430		617
12. Other Employment Opportunities				356		741		1,097
Subtotals	7,849	1,838	9,687	5,900	11,803	4,500	21,490	31,890
Contingencies	976		976		697		1,673	1,673
Inflation	975	162	1,137				1,137	1,137
TOTALS	9,800	2,000	11,800	5,900	12,500	4,500	24,300	34,700

highly skilled, well paid ones. USAID would be placed in the position of frequently arguing the case for bringing in help. Untenable friction could be the consequence, because USAID's position would be misinterpreted as lack of confidence in the RDS staff or, more simply, because the relatively higher salary rates and allowances would cause resentment. These are less likely to come up if TA is grant funded.

In addition, in a number of key studies (e.g., evaluations) USAID may have a greater appreciation for and interest in rigorous analysis than the GOE. For some GOE officials, field visits and observations rather than scientifically collected and analyzed impact data is sufficient for judging the progress of particular program. If the GOE is required to finance such studies with loan resources, there might be a tendency to overlook the quality of analysis and the use of what are considered by the Ecuadorians as high cost foreign advisors. Again, grant funding would assure evaluations of the highest quality possible.

There are other advantages to USAID of grant funding the majority of the TA. One is that under grant funding USAID may well be able to encourage the selection of advisors with more relevant expertise for the Project than would be the case under loan funding. For example, USAID intends to emphasize irrigation specialists whose experience and training are related to practical farm-level water management. INERHI's tendency would be to bring in experts with experience in designing or managing large scale irrigation works. USAID would have more influence over selection under grant funding. Secondly, the advisors, particularly those in the field, will be looked upon by all parties as AID's people and will have some role, whether formal or informal, in helping AID monitor the Project. USAID believes that it is positive having such personnel in the field. Having these advisors grant rather than loan funded lessens the chances of conflict in this regard.

The Project is only one element of USAID's IRD Program. The fourth column of Table III.10 presents the contributions from four other AID projects expected to make up part of this Program. They are a centrally funded (DS Bureau) Rural Training Project, the proposed FY 1981 Health, Potable Water, and Nutrition Project, the proposed FY 1981 Forestry and Soil Conservation Project, and the proposed FY 1982 Rural Employment Project. The amounts listed are only those which will go toward activities within the total IRD program. For example, the Forestry and Soil Conservation Project (column 5) will devote an estimated \$823,000 to activities in Salcedo and Quimiag-Penipe. Budget figures for rural health, forestry and soil conservation and off-farm employment are of course tentative and they will require further analysis as part of PP preparation. Each of these projects will also require institutional assistance at the implementing agency level that is not reflected in the budget figures in column 4d Table III.10.

2. GOE Counterpart

The GOE counterpart contribution is presented in the fifth

column of Table III.10. This is the counterpart for this proposed Project and amounts to 51.4% of total Project costs. It includes both the central funds which will be contributed to the IRD Fund and the implementing agencies' contributions as spelled out in the agreements between those agencies and the RDS. It also includes a small level of community contributions, which will typically be the value of donated labor for construction activities, as spelled out in the agreements between the communities and the project office. AID is not concerned about these exact splits, as they must be negotiated in each case between the RDS and the respective agency or between the project office and the respective community. What is important is that the RDS will be responsible for obtaining counterpart contributions at the levels spelled out in column 5. The following column lists tentative GOE counterpart levels for the IRD activities to be funded from the four other projects making up the IRD Program.

The National Development Plan lists 13 priority public investment programs for the coming five years, of which IRD is one. The amount programmed for IRD is \$124 million, to be made up of both internal and external funds. GOE officials have said that they expect at least half to come from internal funds. Given declining petroleum exports and other seeming financial difficulties, USAID questioned whether the GOE could readily come up with over \$60 million for just one of its 13 priority programs, some \$12.5 million of which would have to be directed as counterpart for this Project. Using the services of an AID economist, USAID carried out an intensive analysis of likely counterpart availabilities. The study is summarized in Annex A. The conclusion is that GOE counterpart availabilities should be no problem. The GOE should be able to both borrow the external funds it is projecting to borrow and to have the needed internal funds available for its 13 investment programs. This conclusion is underscored by the fact that the GOE recently established a counterpart fund, so that there would be no question about the availability of internal funds to back external credits in its priority investment areas. Therefore the only potential counterpart problems would appear to be administrative, another reason for having Project responsibility in a high-level organization with political support.

3. Financial Mechanism

As discussed earlier, the main aspect of the financial mechanism will be the IRD Fund, located in the Central Bank but under the control of the RDS. It is important that the actual financial aspects of the Fund be combined with a carefully conceived and administered accounting system which also takes into account Project transactions which do not physically pass through the Fund. As a hypothetical but not unrealistic example, consider an irrigation activity under one of the projects, to be carried out at a projected cost of \$100,000. The Project budget has AID paying 50%, and the other 50% coming from counterpart funds. It is

estimated that \$80,000 of the cost is for civil works to be carried out by INERHI, and the other \$20,000 for on-farm works to be handled by the project office. Ten thousand dollars of the INERHI cost will be for imported materials, payment for which AID agrees to disburse directly to the supplier. Furthermore, in the written agreement between the RDS and INERHI, the latter agrees to finance 25% of the costs of civil works out of its own funds, to be counted against the counterpart. Likewise, the community will contribute with \$5,000 in donated labor to construct the civil works. The accounting system must then be able to account for all of the following: (a) AID's direct disbursement for materials of \$10,000, (b) the INERHI contribution of \$20,000, (c) the community contribution of \$5,000, (d) a transfer of funds of \$45,000 from the IRD Fund to INERHI, of which \$30,000 is counted against AID's contribution to the Fund and the other 15,000 against the GOE's contribution, and (e) the making available of \$20,000 to the project office, which it can draw on from the IRD Fund, \$10,000 of which is counted against the AID contribution to the Fund and the other \$10,000 against the GOE's contribution. Obviously, the establishment of the Fund and the accounting system will be of crucial importance to the effective administration of the Project and thus will be a condition precedent to disbursement of funds for any activities other than TA to the RDS.

There is little else to be said about the financial mechanism. Crucial, of course, is that budget allocations be made on a timely basis to the Fund and to the implementing agencies from the Ministry of Finance. It is expected that the high level position of the RDS will help assure such allocations. As to the implementing agencies, it is expected that they will continue to utilize their current financial procedures, including the payment of salaries to personnel detailed to the IRD projects, utilizing mutually acceptable reporting procedures, as spelled out in their agreements with the RDS. Likewise, the agreements will detail appropriate disbursement procedures for transfers between the Fund and the agencies. For example, INERHI might well be paid for civil works based on their percentage of completion, while BNF would receive funds through normal Central Bank rediscount procedures.

4. Cost Recovery

Though the two IRD projects have been judged economically feasible using a benefit/cost analysis, as a public investment the GOE must be able to directly recover at least some of its major investment costs if IRD is to be a truly replicable concept on a large scale. By far the two biggest investments in the two projects are irrigation and credit, and both have significant recovery components. Between them, an estimated \$11,593,000 can be directly recovered by the GOE. Indirect cost recoveries, such as increased taxes, less need to import foodstuffs, and decreased urban migration costs, have not been calculated.

As to irrigation, Ecuador's 1972 Water Law says that beneficiaries of GOE financed irrigation projects must pay for the operation and maintenance of the irrigation systems plus for the initial investment costs of construction. INERHI is charged with the responsibility of implementing this cost recovery system through the fixing of water user charges based on quantities of water delivered. During the intensive review discussions and negotiations with INERHI, assurances were obtained that the tariff structure would be sufficiently high to recover all investment and operating costs. These tariffs will be periodically re-adjusted to account for inflation, so as to assure that the cost recovery is in real terms.

As to credit, the BNF will be the implementing agency for all credit channeled to the target farms. Its policies involve full recovery of credit extended, and its performance with the small farms it has served has been considerably better than most credit operations of a similar type in other countries. Its methodology is to use "joint and several liability" arrangements at the comuna level, where everyone is responsible for everyone else's credit. The comuna helps decide which individuals will receive the credit. This system has led to high recovery rates, low delinquency, and virtually no default. The rates charged are 12%, which are as high as could be negotiated and as high as the BNF charges anyone. Though slightly under Ecuador's inflation rate, it is higher than the rates often charged in other Latin American countries for small farmer credit.

5. Other Financial Considerations

From the financial standpoint, this will not be a difficult project for AID to implement. Approximately 93% of the loan is for local currency costs and will be disbursed in increments to the IRD Fund. The foreign exchange costs will be disbursed in increments to the IRD Fund. The foreign exchange costs will be disbursed to suppliers under normal AID procedures. As for the grant, approximately 80% will be for TA and will be disbursed directly to contractors, probably all in dollars. Some 2% of the grant will be for equipment and vehicles, all or almost all of which will be disbursed directly to suppliers in dollars. The remainder of the grant is for studies, probably most of which will also be disbursed to contractors in dollars.

MACROECONOMIC OVERVIEW AND ASSESSMENT OF GOE'S FISCAL CAPACITY

I. INTRODUCTION

The GOE has announced an ambitious five year National Development Plan. It includes over \$120 million dollars of public sector expenditures for a national fund to finance Integrated Rural Development Projects. This fund is to be made up of both local and external resources. In order to assess the GOE's fiscal capacity to make available the local counterpart, USAID has prepared this study.

Part II the study analyzes the evolution of the Ecuadorean economy in the 1970s, its booms and downturns, and some of the trends and patterns emerging from that experience. This, in turn leads into a brief overview of the present situation in Part III, which becomes the setting for Part IV's detailed appraisal of the fiscal situation, the public sector's capacity to deal with the investment patterns suggested in the new Development Plan, and the need to generate funds with which to cover the fiscal deficit. The outcome of this analysis is one of a positive and realistically optimistic outlook on the Ecuadorean economy and its capacity to allocate the counterpart funds necessary to assure an efficient implementation of projects, including those partially financed through AID's assistance.

In this regard, the conclusions emerging from this analysis indicate that, at a global level, the financing available for the 1980-84 public sector investment program will probably be about 20% less than the magnitude projected in the official development plan even with a continuing and consistent effort by the GOE to increase public sector current revenues via improved tax administration, discretionary tax measures, and other measures to maintain the profitability of state enterprises. A shortfall of this amount is unlikely to create (or worsen) the real-world counterpart problem. The key to the timely provision of domestic on counterpart financing resides in the administrative innovation presently being implemented by the GOE which, in effect, will prevent the usual side-tracking and dispersion in the provision of central government counterpart resources. This innovation is administratively tied to external debt management and underscores the GOE's desire to improve the term structure of external debt through increased resource to IFI financing. In addition, the magnitude of external borrowing planned by the GOE exceeds what can be accomplished on a project-specific basis, and debt refinancing credits will undoubtedly also provide a substantial portion of GOE counterpart funding.

II. AN OVERVIEW OF THE ECUADOREAN ECONOMY IN THE 1970s

A. Background

At the outset of the 1970s Ecuador was one of the smallest and least developed economies in South America, agriculture provided 28.6% of Total Gross Domestic Product mining, manufacturing energy and construction provided 21.3%. By 1979 these ratios were 20.0% and 24.9% respectively. During the 1970s the pace of Ecuador's economic growth accelerated; Gross Domestic Product (GDP) in constant prices grew at a rate of 7.5% (1971-1979), a rate well above the 5.5% growth rate prevailing in the second half of the 1960s. The principal force accounting for the higher rate of economic growth was exploitation of petroleum resources and the post-1973 price increases for petroleum, generally favorable price movements for other exports, notably coffee, cacao, and timber, domestic high saving and investment levels associated also with development of capital-intensive-but small-scale import substituting industries, and increased real public sector expenditures. The petroleum bonanza of the early 1970s posed difficult challenges to Ecuadorean economic managers, and can be considered also as a mixed blessing when viewed from the perspectives of promoting a dualistic economic structure, ... of giving rise to excessive expectation of continuing rapid increments in real income, and maintenance of a strong non-petroleum export base.

B. Economic Growth

During the 1970s the economy passed through successive phases of recession, bonanza, and deceleration. Apart from a 16.3% growth of real GDP in 1973, annual growth rates have been less than 10%, and during the past four years GDP growth have successively declined (9.3%, 1976; 7.7%, 1977; 5.3%, 1978 and 5.0%, 1979). Due to strongly favorable terms-of-trade effects, Gross National Income (real income) grew by 58.7% in the period 1972-1975 as compared with a 45.0% growth of GDP (real output).

Due fundamentally to rapidly rising real incomes and the expansion of effective demand, Ecuador achieved very respectable growth rates in nearly all economic sectors. The notable deviation from average GDP growth were crop agriculture (a very low growth rate) and manufacturing industry (a high growth rate).

TABLE II.1
SECTORAL GROWTH 1970-71/1976-77 a/
(percentage annual rates)

	1970-71 to 1972-73	1972-73 to 1976-77	1978-79
Agriculture	4.1	5.9	1.9
Mining	141.4	7.5	7.5
Manufacturing	8.2	11.1	11.1
Public Utilities	7.0	14.2	13.1
Construction	--	15.8	2.0
Transport and Communications	9.6	7.8	6.1
Other Services	<u>8.1</u>	<u>9.5</u>	<u>6.2</u>
GDP, Market Prices	9.2	9.1	5.1

a/ Biannual Averages.

SOURCE: IBRD, Ecuador: Development Problems and Prospects (July 1979),
Table 7 and Central Bank for 1978-79.

Within the agricultural sector, the value of crop production was virtually stagnant during this period, growing at a real annual rate of just 0.1%, and its share of total sector output fell from 58% in 1979 to 42% in 1978. Livestock, forestry, and fisheries, meanwhile, grew quite rapidly, as the following figures demonstrate:

Sub-sector	Annual Growth Rate, 1970-1978 (percent)
Crop production	0.1
Livestock	7.4
Forestry	7.6
Fishing	16.6
Total sector output	4.1

D. Balance of Payments

Ecuador's annual commodity export earning grew from about \$195 million 1971-72 to \$1,354 million in 1976-77, and \$1,838 million in 1978-79. Non-petroleum export earnings also grew substantially, from \$194 million in 1970-71 to \$660 million in 1976-77 to \$817 million in 1978-79. Gains in export earnings appear to have been due almost exclusively to favorable price movements. In constant prices, earnings of principal agricultural exports as a whole grew at a rate of only 2% p.a. in the period 1973-77.^{1/} Exports of processed cacao, fish, and coffee as well as raw fish grew at annual rates ranging from 15 to 58% but unprocessed cocoa, sugar, and timber export decreased at annual rates of 23 to 26%.

Import expenditures also grew substantially during the 1970s, on an annual basis from \$276 million in 1970-71 to \$1,189 million in 1976-77 to \$1,630 million in 1978-79. Taking international inflation as a proxy for annual changes in Ecuador's import prices, real imports appear to have grown by 11.6% p.a. in the period 1970-1977. There has been substantial change in the composition of Ecuador's imports. Capital goods grew as a proportion of total imports (from 32.0% in 1970-71 to 46.5% in 1976-77) and intermediate goods and raw materials declined as a proportion (from 55% in 1970-71 to 47.6% in 1976-77) even while growing at a real rate of about 10% p.a., and the proportion in consumer goods remained at 11 to 12%. The main impulse to imports came from increased investment which required importation of foreign machinery and equipment and to a lesser extent from intermediate goods for industry.

Ecuador's trade balance has registered surplus every year since 1972, (See Table II.2). As one would expect, the lag between the onset of the petroleum bonanza and the ensuing increase in real investment created a substantial trade surplus in 1973 and 1974 (\$540 million), but in the ensuing years the trade surplus was of lesser magnitude--an annual average of only \$158 million in 1977-1979. After registering minor surpluses in 1973 and 1974, the current account balance slipped to its customary deficit position due to larger outflows for services (e.g., freight, interest, and profit remittances) and the cumulative deficit in the past four years (1976-1979) amounts to \$1,095 million.

Ecuador's net international reserve position grew rapidly from the end of 1972 (\$128.0 million) to the end of 1974 (\$339.5 million), declined in 1975 (to \$245 million) and resumed a steady increase through 1976-1979, amounting to \$631 million at year-end 1979. Capital account performance can be divided into two distinct periods. During the six-year period 1970-1975, net private direct investment plus net external borrowing amounted to \$617.4 million while net public borrowing amounted to \$225.2 million. During the four-year period 1976-1979, net private investment and borrowing amounted to \$678.3 million but net public borrowing amounted to \$1,290.4 million.

* IBRD, op.cit., pp. 114-129

TABLE II. 2

SUMMARY BALANCE-OF-PAYMENTS DATA, 1970-1979

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Merchandise										
Exports	234.9	238.0	323.2	583.3	1,225.4	1,012.9	1,307.2	1,400.0	1,532.0	2,144.0
Imports	-246.7	-305.5	-280.8	-396.8	-872.0	-1,005.9	-1,035.7	-1,341.5	-1,315.0	-1,945.0
Services										
Exports	24.0	27.6	43.8	49.7	107.9	113.9	124.6	227.4	237.9	266.0
Imports	-142.1	-132.0	-178.9	-256.5	-454.6	-373.2	-433.4	-664.3	-661.0	-1,090.0
Transfers (net)	16.9	15.7	15.3	26.8	31.0	32.4	30.7	36.2	43.9	40.0
Current Account Balance	-113.0	-156.2	-77.4	6.5	37.7	-219.9	-6.6	-341.4	-162.2	-505.0
Long-Term Capital										
Direct investment	88.6	162.1	80.8	52.3	76.8	95.3	19.9	34.5	40.0	50.0
Private borrowing (net)	-6.4	0.6	6.5	-0.6	19.9	41.5	7.2	64.3	126.4	336.0
Public borrowing (net)	28.2	18.6	76.8	28.7	9.3	63.6	172.5	497.6	147.3	473.0
Short-Term Capital (net) ^b	14.5 ^c	-39.2	-16.1	-1.9	-4.8	-24.8	26.7	-86.2	-86.9	-200.0
Special Drawing Rights	4.2	3.5	3.8	—	—	—	—	—	—	—
Errors and Omissions	c	c	c	4.7	-28.9	-47.4	-13.1	-49.9	-57.7	-54.0
Change in Reserves (-indicates increase)	-16.1	10.6	-74.4	-89.7	-110.0	65.0	-203.3	-112.1	-5.3	-20.0

Source: Banco Central del Ecuador, Boletín-Anuario No. 2 (1979) and unpublished data.

a. Items 14.1, 14.2, 15.1, and 15.2.

b. Items 13, 15.3, 15.4, 16, and 17.

c. Errors and omissions are included in private short-term capital flows for 1970-72.

d. Estimate.

D. Money and Prices

The rate of advance of major monetary variables and prices during the 10-year period 1970-79 has been as follows: a 10.8% p.a. growth of domestic credit, a 25.3% p.a. growth of the stock of money (M_1) and an 11.9% p.a. growth of prices. These calculations are based on IMF data (appearing in International Financial Statistics). Performance of prices during this long period is about as predicted by crude monetary analysis, i.e., as p.a. index numbers, 1.2532 for money divided by 1.1187 for prices would yield as 12% p.a. increase in real transactions (implying that the velocity of circulation of money slowed somewhat during the period). However, year-to-year changes have been substantial as is shown in Table II.3

TABLE II.3

ANNUAL PERCENT CHANGE IN DOMESTIC CREDIT, MONEY, AND PRICES

	Domestic Credit ^{a/}	Money ^{a/}	Prices ^{b/}
1970	22.35	25.80	5.14
1971	12.97	12.21	8.46
1972	6.84	24.68	7.80
1973	7.75	34.89	13.02
1974	43.06	50.76	23.33
1975	22.89	10.83	15.34
1976	26.02	31.12	10.70
1977	17.00	23.07	13.01
1978	13.00	11.60	11.67
1979	35.03 ^{c/}	28.26 ^{c/}	10.24

a. Based on December 31 of each year

b. Annual average Quito, based on low and middle income earners in Quito, compiled on 1965 base.

c. December 1978 to November 1979 (preliminary data).

SOURCE: IMF, International Financial Statistics

Prior to the petroleum boom, the principal problem confronting Ecuadorean monetary managers was reconciling large public sector deficits with the supplying credit needs of the private sector and protecting foreign exchange reserves. With the petroleum boom the inflationary impact which derives from the monetization of growing foreign exchange reserves was dampened via import liberalization, so the rate of growth of the domestic money stock declined after the initial upthrust in 1972-74. Based on data presented in Table II.3, and the upward trend in foreign exchange reserves, it is obvious that monetary management has generally succeeded in expanding domestic credit in line with Ecuador's productive potential without severe inflation. The World Bank review of monetary fiscal policy for the period 1972-1977 suggests the fiscal policy has been to expansionary while

monetary policy has been to contractionary. Even though it is beyond the scope of this paper to examine this criticism, if it is valid, it also suggests that monetary management has been in a reactive, but independent position vis-a-vis government.

E. Wages, Income Distribution and Employment

The following data reveal that real wages increased at a rate of 5.8% p.a. in the period 1970-77 --a figure somewhat lower than the increase in productivity.

TABLE II.4

REAL AVERAGE SALARY AND PRODUCTIVITY GROWTH RATES (percent)

<u>Year</u>	<u>Average Real Salary</u>	<u>Productivity</u>
1971	5.6	2.5
1972		3.5
1973	13.2	14.1
1974	10.7	14.7
1975	5.0	0.9
1976	8.1	3.1
1977	- 1.3	5.3
1970-77	5.8	6.1
1978	8.2	2.0

SOURCE: Central Bank and INEC

The share of wages in GDP appears also to have declines from about 30% to 27% from 1970 to 1977. Many workers, particularly rural workers do not receive as much as legal minimum wages. Data collected in Household Surveys indicate that about 24% of workers received less than the minimum wage. Total employment is estimated to have increased at about 3.3% p.a., a rate slightly below demographic growth. Sectors principally responsible for the increase in employment are services (47%), commerce (15%), both sectors where labor productivity increases slowly, construction (10%) and manufacturing industry (10%). Underemployment is a serious problem. The ILO has estimated 33-40% of available labor time in agriculture is unutilized. Income distribution data, like employment data, are poor. There is some evidence that the share of income of the middle income (urban) groups has been increasing while that of the rich and poor has been declining.

F. Public Finance

Public sector revenues grew rapidly from 1972 onward due to taxes on petroleum earnings and the increase in these earnings brought about by the international petroleum price increase. After a one to two years lag, public sector expenditures adjusted to revenues and were ultimately to grow by more than revenues. Total public sector expenditures drifted up from 20.4% of GDP in 1972 to 23-24% in 1974-76 and declined to 22.9% in 1977. As petroleum-generated revenues increased, the fiscal effort to obtain non-petroleum tax revenues deteriorated. For example, the ratio of non-petroleum revenues to GDP declined from 18.6% of GDP in 1972 to 13.8% in 1977 to an estimated 12.8% in 1979, see Table II.5. In regard to the consolidated public sector deficit, net foreign credit increased from less than 1% of GDP in 1973-75 to 2.4% of GDP in 1976, to 4.1% in 1977. Thus foreign borrowing has been the fill-up to a greatly eroded tax effort.

G. External Debt

By the end of 1979, Ecuador's external debt of over one year term amounted to \$3,566.6 million according to data presented in the National Development Plan. Additional information available to us indicates that public sector debt amounted to about \$2.8 billion and private sector debt to about \$0.7 billion. Unfortunately, it is not possible to construct a wholly consistent historical series on public sector external debt due to unreported military debt and some supplies credits. On a disbursed basis total public sector debt was probably on the order of \$1.0 billion at the end of 1976 and grew to \$2.6 billion by the end of 1979. Expected debt service in 1980 amounts to \$580 million (which would approximate 39% of 1979 commodities export earnings). Even though Ecuador's external debt has grown rapidly in recent years, and the debt service ratio is high, in the context of past performance of export earnings, the existing debt service ratio is not generally judged to mean that Ecuador is an unacceptable credit risk. One of the factors that contributed to rapid growth of public sector external debt in 1977-1979 was the abolition of the government's External Debt Committee in early 1977. This action led to a very rapid growth of external debt, and the respective regulatory committee has been reestablished.

TABLE II.5

Annex A
(page 9 of 26)SELECTED ACCOUNTS OF THE CONSOLIDATED PUBLIC SECTOR
AS SHARES OF GDP, 1972-73
(in percentages)

	1972	1973	1974	1975	1976	1977	1978
<u>TOTAL REVENUES</u>	20.9	20.9	22.6	22.4	21.7	18.7	21.7
Current	20.6	20.7	21.9	19.4	19.3	17.7	20.7
Non-petroleum	18.6	16.4	14.4	13.8	14.1	13.7	14.2
Petroleum	2.0	4.3	7.5	9.6	5.2	4.0	6.5
Capital	0.3	0.2	1.2	3.0	2.4	1.0	1.0
Non-petroleum	0.3	0.2	0.3	0.5	0.5	0.3	0.3
Petroleum ^{a/}	-	-	0.9	2.5	1.9	0.7	0.7
<u>TOTAL EXPENDITURES</u>	20.4	21.3	23.9	23.2	24.0	22.6	25.5
Current	14.4	13.5	13.9	11.5	11.4	11.6	15.5
Capital	6.0	7.8	10.3	11.7	12.6	11.0	10.0
Saving on Capital Accounts ^{b/}	6.2	7.2	8.0	7.9	7.9	6.1	5.2
	(4.2)	(2.9)	(0.5)				
Deficit (-) or Surplus (+)	+0.5	-0.4	-0.8	-0.9	-2.3	-3.9	-3.8

Source: JUNAPLA for public sector accounts; Banco Central del Ecuador for GDP estimates

^{a/} Transfers from FONADE.

^{b/} Ratios in parentheses exclude petroleum revenues.

TABLE II. 6

FINANCING OF THE CONSOLIDATED PUBLIC SECTOR DEFICIT,
BY PRINCIPAL SOURCES, 1973-77
(as percentage of GDP)

Year	Net Credit ^{a/}	Domestic Other ^{b/}	Net Foreign Credit	Total
1973	.13	.05	.22	.39
1974	.71	-.19	.26	.78
1975	.61	.25	-.13	.73
1976	.58	.32	1.50	2.40
1977	1.50	.10	2.50	4.10

^{a/} Includes sale of bonds.

^{b/} Includes net variations in cash balance and net utilization of revenues from other budgetary periods.

Source: JUNAPLA

.II. ECONOMIC PROCESSES AND MANAGEMENT

A. Income Transmission

Inasmuch as the state is the major recipient of revenues generated by petroleum, it is appropriate to describe the income transmission mechanism which transforms the substantial increase in foreign resources owned mainly by the state into increased real output generated within Ecuador. Foreign exchange resources associated with petroleum taxes are sold to the banking system and become available to the private sector to finance investment as well imports utilized directly and with processing for consumption. In regard to public finance, the increased effective demand takes the form of increased real public sector spending and also a reduced real tax burden for the private sector.

The substantial growth in private sector real income was utilized both for consumption as well as investment. The private sector income existing at the onset of the increase in real income was evidently distributed in sufficient breadth to stimulate demand for goods susceptible to relatively capital-intensive domestic industrial firms producing import substitutes. Within the same time framework as the sharp increase in government revenues due to petroleum, a private sector investment boom occurred as private sector fixed investment tended to rise as a ratio of GDP and ranged from 10 to 15% of GDP. Public sector fixed investment also rose from about 5% of GDP in 1972 to a ratio of 8-9% in 1974-1977.

B. Economic Management

In reviewing the 1970s it is obvious that foreign exchange and fiscal resource constraints ceased to exist for a period of about three years, c.a. 1973-74 to c.a. 1975-76. Real incomes, investment and output increased rapidly. During this period Ecuadorean economic managers were relatively successful in curbing inflationary pressures. With the reemergence of foreign exchange and fiscal constraints, c.a. 1977 the problem of closure of the fiscal gap became apparent and pressing.

The options for financing the gap were (1) to restore the real non-petroleum tax burden, (2) recourse to Central Bank financing, (3) external borrowing. The first option has the immediate impact of reducing private sector real income. The second option entails well-known and nearly immediate inflationary consequences. The third option has an eventual limit in external creditworthiness, and if sustained at sizeable magnitudes for a few years, will reduce net foreign exchange availability, but it is immediately the least painful option. The effective decision in the period 1977-1979 was to make to buttress public sector resources through an additional inflow of external resources rather than make severe cuts in public sector spending or substantial increases in the non-petroleum tax burden. Thus, having adjusted to prosperity it has been politically difficult for government to take measures that would reduce real income, and

therefore, the petroleum revenue windfall can be considered as having induced a fiscal program that otherwise would not have emerged. Inasmuch as net external borrowing also buttresses the balance of payments, the 1977-1980 Ecuadorean economy resembles the typical case of a country "living beyond means". This judgement seems appropriate due to the preceding rise in real incomes and would be entirely appropriate except for good prospects for future petroleum export earnings. Indeed, one focus of expert advice aims at increasing the exportable surplus of petroleum via increasing the price of domestically-consumed petroleum products to curb domestic consumption and thereby finance the exploration and development of petroleum resources. 1/

C. Economic Dualism

A large portion production units in agricultural sector and some in the manufacturing, construction, and commerce sectors subsist without modern production and organization. These units belong to the traditional sector and due to low labor productivity they pay wages new subsistence level and their profits are also small. The enterprises of the traditional sector coexist with those of the modern sector, but have few linkages to the modern sectors either in the form of input supply or demand for output due to low income. The modern sector, both in terms of productive enterprises and to a lesser extent in terms of demand, relies predominantly on imported intermediate goods. The traditional sector produces for subsistence and for the domestic market but not for export and cannot compete effectively with imports even where this would be useful (e.g., foodstuffs) from the national economic viewpoint.

The dual economic structure gives rise to a bimodal distribution of income in which average wages in the modern sector are about 100% higher than in the traditional sector. Due to the increasing productivity of the modern sector but the low employment expansion due to utilization of capital-intensive production processes, demand for labor increases in the informal sector (urban services and commerce) and rural-urban migration takes place and incomes in the traditional sector tend to rise but slowly due to continued underemployment and low productivity. In general, the underemployed of the urban sector have a higher income than they would have had in traditional agriculture.

D. Distortions and Waste

As noted by World Bank study, the degree of distortion and waste that accompanied the sharp acceleration of foreign exchange and tax revenues from petroleum has been modest in Ecuador, to wit: "While the major traps for suddenly rich countries have been avoided, the development process in Ecuador was less than optimal. The structure of growth has not

1/ IBRD, Ecuador: Development Problems and Prospects (July, 1979), pp.xv-xvii.

been of the sort which would have contributed to creating an export base in manufactured goods of low-to-medium complexity, or in transformation of agro-products, both of which would have been able to take over from petroleum as important foreign exchange earners. Finally, the financing of development has been excessively dependent on revenue from oil. Other tax revenues have lagged behind as a source for financing public expenditures, and the private sector relied strongly on tax exemptions." 1/

The rapid growth of foreign exchange earnings from petroleum tended to move the exchange rate above levels conforming to historic purchasing-power and thereby reduced the profitability of traditional agro-industrial export. At the same time, import-substituting industrialization increased the dependency of the economy on imports. During the 1970s, growth of export earnings was roughly comparable to what would have transpired in two and half to three decades without petroleum. A significant quantum of investment was undoubtedly absorbed in import-substitution industrialization rather than in the export diversification which would have taken place otherwise. Therefore, from the longer-term perspective, the boom of the 1970s contains an element of waste.

At present, the Ecuadorean economy appears to be slowing down; the private sector speaks of recession and Central Bankers ponder the near-term prospects for international reserves and the exchange rate. However, for a small and relative, open economy, even the best of monetary and fiscal management cannot prevent a recession of exogenous origin and substitute prosperity in its place. Furthermore, the probable short-term outcomes of such an attempt would be a socially disruptive exhaustion of external reserves. Viewed in longer term perspective, the increasing scarcity of foreign exchange could serve as an appropriate challenge for the creation of credit and tax incentives to expand non-petroleum export earning and thereby overcome distortions which exist in the agricultural and industrial sectors, e.g., undue growth in food imports and excessive import dependency of industrial expansion.

1./IBRD, op.cit., p.vi.

IV. THE 1980-84 INVESTMENT PROGRAM

A. The Global Financing of Investment

The Ecuadorean government's development program as presented in the Plan Nacional de Desarrollo del Gobierno Democrático 1980-1984 (transmitted by the Vice President, Oswaldo Hurtado, President of the National Development to the President of the Republic on 25 February, 1980 and published on 8 March, 1980) contains a financial plan (in chapter 6) for Gross Domestic Investment and its two components, private and public sector investment. For the five-year period 1980-1984 Gross Domestic Investment is projected at S/. 376.2 billion in 1979 prices (US\$15.0 billion). Of this total, S/. 145.4 billion (\$5.8 billion) is public sector investment and S/. 230.8 billion (\$9.2 billion) is private sector investment. The ratio of projected Gross Domestic Investment to Gross Domestic Product for 1980-84 is 27.2% and the respective ratios of public sector investment and private sector investment are 10.5% and 16.7%.

The financing of Gross Domestic Investment has two principal sources; positive Net Foreign Investment (the net inflow of external real economic resources) and Gross Domestic Saving (the gross domestic economic output not consumed). These concepts, which are drawn from national accounting methodology, usually give rise to confusion and further clarification is indicated. Net Foreign Investment in a country can be positive or negative. In national accounting methodology it is the deficit (or surplus) on current account of the balance of payments because this number indicated the value of real resources used by the country and supplied by the rest of world (if there is a deficit) or made available to the rest of the world (if there is a surplus). Based on the widely-accepted thesis that a real resource inflow is fungible between consumption and investment purposes, the official Ecuadorean Plan attributes the \$2,250.0 million projected current account B/P deficit for 1980-84 (i.e., the Net Foreign Investment inflow) to the financing of Gross Domestic Investment.

This net external economic resource inflow for 1980-84 is distributed to three sectors according to B/P capital-account items: \$1,189.3 million to public sector investment, \$793.0 million to private sector investment, and \$268.0 million to the Ecuadorean financial sector. Of the private sector's Gross Investment of \$9,232 million, \$7,202 million is financed by domestic private sector savings, \$1,237 million by the Ecuadorean financial sector and \$793 million from Net Foreign Investment. The latter amount takes the form of \$758 million in net direct investment and \$38 million in net utilization of long-term external credits. In regard to public sector Gross Investment of \$5,817.2 million for 1980-84, \$1,189.3 million is from Net Foreign Investment and takes the form of a net inflow of long-term credits, \$406.5 million from the Ecuadorean financial sector, and \$4,221.4 million from public sector saving.

The methodology employed (which is also a conventional one utilized at an aggregative level) glosses over some considerations which may also be relevant to fulfillment of the project level of Gross Investment. The pro-

jected magnitude of Net Foreign Investment (i.e., the B/P current account deficit) which approximates \$450 million annually in 1980-84, could arise as easily from low or stagnant growth of export earnings and import expenditures as from moderate to high growth of those variables. For example, if export earning were stagnant, import expenditures would also adjust for several reasons: e.g., reduced demand for private sector output-hence-profits-hence-investment, reduced public sector revenues-hence-investment expenditures, and also various discretionary monetary measures aimed at restraining imports. If exports and imports behave about as projected in the Plan's B/P statement in nominal US dollars, in our judgment the level of projected real investment can be realized. 1/

A second area of concern surrounds the financing of public sector Gross Investment. The magnitudes cited above indicated that 20.4% of total financing is to come from net foreign credits and 72.6% is to be financed domestically, from public sector saving. Thus, superficially, the impression given is that domestic financial resources supply about four sucres of each five sucres invested. However, the Plan proposes a program for utilization of external credit which suggests much greater significance for external financing of public sector Gross Investment. As shown in Table IV.1, the planned gross utilization of external credit is \$4,800.6 million, which leaves a net inflow of \$1,932.9 million. Of this latter amount, \$490.6 is programmed to build up Ecuador's net international reserve position, \$35 million is used by the private sector, and \$268.0 million is used by the Ecuadorean financial sector, resulting in a net inflow of \$1,189.3 million to the public non-financial sector.

In summary form, the financing of the public sector investment program for 1980-84 requires utilization of \$4,007.1 million of external credit (\$4,800.6 million in gross external credit utilization less \$35.0 million in net credit utilization by the private sector less \$267.9 million build-up in Ecuador's net international reserve position) as well as the equivalent of \$4,221.4 million in public sector current saving. Fulfillment of the \$5.8 billion public sector investment program depends upon the following process: (i) generation of \$4,221 million in public sector current saving, and this depends mainly upon the growth trends for current revenues and expenditures; (ii) to remain externally creditworthy the Ecuadorean public sector has to pay \$2,818 million in external debt amortization, leaving \$1,404 million in domestic resources; (iii) after amortizing external debt, \$4,007 million are utilized from existing and new external

1./ The ratio of Gross Domestic Investment to Imports rises from .99 in 1980 to 1.12 in 1984. By way of comparison, in the period 1970-1979 this ratio fluctuated from .82 (in 1974) to 1.15 (1970-1979) and averaged 1.01 for the ten-year period as whole. Therefore, much depends upon imports being able to grow as projected in the Plan by at least 3.8% p.a. in constant values for 1980-84.

TABLE IV.1

THE FINANCIAL PLAN FOR PUBLIC SECTOR INVESTMENT GOE 1980 - 1984
(In millions of U.S. Dollars in 1979 prices)

Public Sector Current Saving	+	Net Utilization of External Credit by Public Sector				+	Domestic Banking Sector Financing	=	Public Sector Investment
		Gross Utilization of External Credit	- Gross Amortization of External Credit	Use by Banking Sector	- Build Up of Int. Reserves				
1980	714.2	1,224.3	771.6	79.6	83.9	^{a/} 254.2	0		968.4
1981	778.2	832.2	431.5	45.0	108.3	247.4	28.0		1,053.6
1982	851.6	964.7	506.2	73.3	71.0	314.2	0		1,165.8
1983	900.8	931.5	561.7	35.0	105.5	229.2	143.3		1,273.3
1984	976.6	847.9	546.7	35.	121.9	144.3	235.2		1,356.1
Total	4,221.4	4,800.6	2,817.7	267.9	490.6	^{a/} 1,189.3	406.5		5,817.2

Note: ^{a/} Excludes \$35.0 million utilized by private sector in 1980. Otherwise all transactions on external debt are located in public sector

SOURCE: Constructed from data appearing in GOE Plan Nacional de Desarrollo del Gobierno Democratico 1980-1984, Primera Parte, pp. 94-101 and 125-142.

credits; and (iv) the \$1,404 million plus \$4,007.1 million plus \$406 million in new net borrowing from the domestic banking system finance the \$5,817 million public sector investment program.

B. Global Counterpart Funding

Before commenting on the real-world prospects for the required magnitudes public sector current saving and external credit utilization, we note specifically that the generation of domestic counterpart funding for the investment program is not identical to the generation of domestic public sector resources (current account saving). We have formed this judgment based on the supposition that project-specific external financing will not be as high as \$4.0 billion. For this to be true, external credits would have to finance 68.9% of total project costs. Based on existing evidence, we believe the probable ratio for project-specific external credits would be 40 to 50%, i.e., \$2.3 to 2.9 billion 1/. The remaining gap (\$1.1 to 1.7 billion) would have to come from general purpose external credits. The important implication regard the availability of project-specific domestic counterpart funding is that, at the global level, there are two major sources: general purpose external credits and domestic public sector saving.

C. The Realism of the Financial Plan

Several assumptions utilized in the construction of the financial plan for the 1980-84 public sector investment program are open to question. It should be recognized that the principal value of the financial plan is to detect likely pressure points so as to signal necessary policy adjustments. The \$5.8 billion figure for public sector investment is probably

1. The IBRD Country Study; Ecuador Development Problems and Prospects (July 1979) pp. 335-341 list a total of 126 possible public sector investment projects involving a total estimated cost of about \$6.0 billion with a foreign exchange component of about \$4.3 billion (63.3%). The GOE, JUNAPLA document Inventario Nacional de Proyectos (Quito, 1978), table 8-1, provides the results of a questionnaire of public sector investment projects and found that the program of public sector investment for 1979-1983 totalled \$2,965.1 million with \$1,655.6 million in domestic financing and \$1,309.5 million in external financing (a foreign financing ratio of 44.2%). We doubt that either the IBRD or JUNAPLA data reflect the true foreign exchange cost of public sector investment as part from the financing thereof. The former would include necessarily the real economic resources imported directly with project execution and indirectly as a result of the increased demand generated by project expenditures. In this sense, we suspect that the economic foreign exchange cost of Ecuador's 1980-84 public sector investment program is on the order of 40%.

15 to 25% higher than what would stand as a realistic prediction. The 6.5% average annual growth rate for GDP in 1980-84 is probably on the high side with 5.5 to 6.0% as more likely outcome. In addition, the linkage between public sector investment of \$5.8 billion and attainment of the 6.5% growth rate is drawn nowhere in the Plan, nor is the relationship a strong one.

The normative pressures upon planners were obviously to come up with an investment program that, while conforming to the promise of social justice of the present government, also entailed an investment magnitude that would compare favorably with that attained in previous five-year period. Table IV.2 facilitates a rapid comparison of the official hope for 1980-84 with the results of the 1975-79 period based on data presently available. Gross Domestic Investment is 32% higher in absolute value in the 1980-84 period (a 5.8% p.a. growth rate) but is a slightly lower ratio of GDP. Public sector investment is a slightly higher ratio of GDP and private sector investment is a slightly lower ratio of GDP, but these changes are small.

Inasmuch as public sector investment for 1980-84 is only marginally higher as a ratio of GDP than what was obtained in 1975-1979, why should it be so difficult to obtain? The conventional wisdom in Quito appears to come down on the side of substantial difficulty. In this myth or reality? There are three pressure points which could impair fulfillment of the 1980-84 public sector investment program. They are: (i) the obtaining of an adequate magnitude of external credit a sizeable portion of which will have to be linked in a project-specific manner; (ii) the generation of the required level of public sector saving, which is mainly a result of the appropriate trends in current revenues and current expenditures; and (iii) a condition of adequate monetary constraint to prevent an accelerating inflation and unacceptable declines in external reserves, which would be detrimental to the attainment of (i) and (ii).

D. The Debt Management Problem

As is noted in the plan, "in contrast to what occurred in past years, during the next five years, external debt service will be of larger magnitude..... This behavior is due principally to the amortization of loans contracted prior to the Plan." ^{1/} Table IV.3 indicates that the amortization (not interest) on existing loan contracts, i.e., those contracted prior to July 1, 1979 would amount to \$2,738.7 million during the period 1980-84 which amounts to about 77% of Ecuador's disbursed external debt of over one-year term (\$3,566.6 estimated for December 31, 1979). Inclusive of \$281 million refinancing in 1980, Ecuador's external debt service approximates 43.6% of commodity export earnings (and 33.2% exclud-

^{1/} Plan, op.cit., p.99

TABLE IV.2

COMPARISON OF PUBLIC SECTOR INVESTMENT: 1975-79 AND 1980-84

Gross Domestic Investment		
--- in billion of 1979 sucres	284.4	376.2
--- in billion of U.S. \$	11.4	15.0
--- as % of GDP	28.1	27.2
Public Sector Investment		
--- in billions of 1979 sucres	98.6	145.4
--- in billions of U.S. \$	3.9	5.8
--- as % of GDP	9.8	10.5
Private Sector Investment		
--- in billions of 1979 sucres	185.8	230.8
--- in billions of U.S. \$	7.5	9.2
--- as % of GDP	18.3	16.7
Gross Domestic Investment (GDI)	100.0	100.0
Public Sector % of GDI	34.8	38.9
Private Sector as % of GDI	65.2	61.1
Financing of Public Sector		^{d/}
Investment (in billions of U.S. \$)	$\frac{3.94}{2.65}$ ^{a/}	$\frac{5.8}{4.2}$
--- from Public Sector Saving		
--- from Net Utilization of	^{b/}	
External Credit	1.35	1.2
--- from Domestic Banking Sector	1.30 ^{c/}	0.4
Public Sector Saving as %		
of GDP	6.5	7.6

Notes: ^{a/} CONADE data on real investment from Cuenta Financiera Consolidada del Sector Publico 1975-1979.

^{b/} Derived from Table II, Summary BIP Data 1970-1979

^{c/} Calculated as residual.

^{d/} From Table A

TABLE IV.3

NET UTILIZATION OF EXTERNAL LOANS
(millions of U.S. dollars)

	<u>Existing Loan Contracts</u>			<u>New Loan Contracts</u>			<u>Total Net Utiliz- ation</u>
	<u>Disburse- ment</u>	<u>Amortiz- ation</u>	<u>Net Utilization</u>	<u>Disburse- ment</u>	<u>Amortiz- ation</u>	<u>Net Utilization</u>	
1980	975.3	771.6	203.7	249.0	-----	249.0	452.7
1981	398.5	431.5	- 33.0	433.7	-----	433.7	400.7
1982	155.6	506.2	-350.6	809.1	-----	809.1	458.5
1983	62.7	540.7	-478.0	868.3	21.0	847.8	369.8
1984	11.4	488.7	-477.3	836.5	58.0	778.5	301.2
Total 1980-1984	1,603.5	2,738.7	-1,135.2	3,197.1	79.0	3,118.1	1,982.8

SOURCE: Plan Nacional de Desarrollo , pp. 86.

ing this refinancing item). 1/ Debt service is high due evidently to the existing maturity structure of amortization payments. For example, if one-fifteenth of the external debt outstanding were amortized each year, the debt service ratio for 1981 would be a comfortable 21.3% instead of 27.1%.

Even though the Plan proposes net utilization of external credit amounting to \$1,983 million for 1980-84, and the outstanding balance of external debt grows from \$3,567 million at year-end 1979 to \$5,550 million at year-end 1984, the planned net utilization (\$1,983 million) is less than cumulative interest payments of \$2,586 million in 1980-84. Therefore, the global debt management program proposed by the Plan can be considered extravagant. The Plan notes, "the basic objective of external credit policy is to obtain the needed financial resources on the best possible terms" and goes on to present guidelines for external credit policy. 2/ These guidelines include: (i) centralization of approval of loan contract in the Ministry of Finance, (ii) the obligatory registry of all external credit contracts, public and private, in the Central Bank, (iii) creation of an external credit advisory group composed of representative of the Consejo Nacional de Desarrollo (CONADE), the Central Bank, and the Ministry of Finance, (iv) the general guideline that external credits will be used in the following priority --to finance the imported component of investment projects, to improve the structure of Ecuador's external debt, and to finance capital expenditures-- and (v) the creation of a single account in the Banco Ecuatoriano de Desarrollo (BEDE) for the counterpart of external credits received by the state. We are informed that the division of labor of the external credit advisory group is as follows: CONADE rules on the priority of particular public sector investment projects, the Ministry of Finance on the generation by a project of a cash-flow facilitating future debt service, and the Central Bank on the appropriateness of the financial terms of the related external credit.

Maximization of utilization of external credit from IFIs on concessional terms is obviously a question of GOE negotiating skill. 3/ CONADE officials state that they expect to have completed shortly an estimate of external financial requirements for the 41 programs (approximately 350 projects) listed in the Plan. This study should produce more accurate information in regard to the project-linked domestic counterpart requirement of the public sector investment program. Interviews with IDB and Ministry of Finance officials indicate a substantial change in the outlook for domestic counterpart funding of projects being financed by major IFI lenders and external donors. On March 21, 1980 the Ministry of

1/ Plan, op.cit., p. 101

2/ Plan, op.cit., p.143-144

3/ CONADE officials informed us that they had received a letter from the IDB in response to their request stating the following new loan commitments as "secure" for 1980-83 as follows in million of US dollars 1980 (49), 1981 (169), 1982 (221), and 1983 (275).

TABLE IV.4

CONSOLIDATED PUBLIC SECTOR ACCOUNTS, 1975-1979, AS SHARES OF GDP

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
GDP in 1979 prices (millions sucres) Growth Rate of GDP	180,524	193,524 7.2	205,074 6.0	215,967 5.3	226,729 5.0
A. <u>Current Revenues</u>	<u>19.38</u>	<u>19.26</u>	<u>17.68</u>	<u>20.72</u>	<u>21.13</u>
Non-petroleum	13.75	14.05	13.74	14.22	12.84
Petroleum	5.63	5.21	3.94	6.50	8.29
B. <u>Current Expenditures</u>	<u>11.45</u>	<u>11.37</u>	<u>11.57</u>	<u>15.50</u>	<u>16.04</u>
Wages	7.57	7.43	7.73	7.51	7.25
Goods & Services	2.58	2.58	2.75	6.24	5.98
Transfers	0.47	0.33	0.19	0.22	0.13
Interest on Debt	0.83	1.03	1.43	1.53	2.68
(Domestic)	(0.58)	(0.53)	(0.55)	(0.47)	(0.58)
(External)	(0.25)	(0.50)	(0.88)	(1.05)	(2.10)
C. <u>Current Account</u>	<u>7.93</u>	<u>7.89</u>	<u>6.11</u>	<u>5.22</u>	<u>5.09</u>
<u>Saving (A-B)</u>					
D. <u>Capital Revenues</u>	<u>2.96</u>	<u>2.43</u>	<u>1.00</u>	<u>1.00</u>	<u>0.60</u>
Sale of Assets	0.51	0.49	0.34	0.25	0.17
Transfers	2.45	1.94	0.66	0.75	0.43
E. <u>Capital Expenditures</u>	<u>11.77</u>	<u>12.60</u>	<u>11.00</u>	<u>10.00</u>	<u>9.40</u>
Real Investment	9.92	10.60	10.25	8.56	9.12
Financial Investment	1.95	2.00	0.75	1.42	0.28
Transfers	---	---	---	0.02	---
F. <u>Deficit (-) or Surplus</u>	<u>-0.88</u>	<u>-2.28</u>	<u>-3.89</u>	<u>-3.77</u>	<u>-3.71</u>
Memo					
Total Revenues (=A+D)	22.34	21.69	18.68	21.72	21.73
Total Expenditures (=B+E)	23.22	23.97	22.57	25.50	25.44

SOURCE: Calculated from data supplied by CONADE

Finance allocated S/. 1.5 billion (\$60 million) for the domestic counterpart of such projects from the 1980 central government budget. This fund is under the authority of the Public Credit Division of the Ministry and located in entity entitled "Dirección de Control de Proyectos." Reportedly, the Ministry took this action because the Board of Directors of the Banco Ecuatoriano de Desarrollo (BEDE) rejected the idea of supplying domestic counterpart in forms other than loans, which was incompatible with the requirements of most central government directed investment projects. The regulations governing this fund will be issued shortly. An IDB official who is well-informed regarding operational problems created by lack of counterpart funding for IDB projects in 1978 and 1979 termed the new funding mechanism "an extremely positive development" and noted that funding commitments for the first quarter of 1980 had been made by the Ministry. The new funding mechanism should overcome a problem noted by IDB and Ministry officials which consisted in the side-tracking of Ministerial allotments from intended projects.

Ministry of Finance officials also informed us that the GOE desires to refinance \$600 million external debt in 1980, but this operation had been delayed due to the recent high interest rates in the international market.

E. Generating Public Sector Savings

As is shown in Table IV.4, public sector current account saving decreased as a percentage of GDP from 1975 to 1979 (by nearly two percentage points). This performance took place despite an increase in the ratio of current revenues to GDP from 19.4% in 1975 to 21.1% in 1979, albeit with a decline to 17.7% of GDP in 1977. Capital expenditures performance was relatively weak, with continuous decline from 1975 to 1979 (from 11.8% to 9.4%). Total expenditures also increased from 23.2% of GDP in 1975 to 25.4% in 1979. One of the principal elements in the erosion of domestic capacity to finance public sector investment include an increase in the ratio of interest payments on public sector external debt from 0.25% of GDP in 1975 to 2.1% in 1979, in addition, a sharp and probably unwarranted increase in the ratio of expenditures on goods and services in 1978 and 1979. The 1980-84 public sector revenue program projects a substantial increase in the ratio of current revenues to GDP, e.g., from 19.4% in 1979 to 25.6% in 1980. Apart from the portion (See Table IV.5) of current revenues arising from petroleum-related taxes, which are probably about on target, non-petroleum current revenues are to increase from 12.8% of GDP in 1979 to 15.6% in 1980.^{1/} Non-petroleum current are projected to increase by 29.6% in 1980. In Table IV.6 the projected effects of discretionary revenue measures are shown. Due to the present inpassé

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1. Petroleum revenues to the public sector are projected to increase by 2.4% p.a., which we suspect is about on target, i.e., price increases will slightly overcompensate for decreased production.

between the Executive and Legislative branches of the GOE it is unlikely that the revenue impacts from legal reform will be available in 1980. In addition, the impacts of administrative reforms usually take some time. Even though we believe that a S/.6.6 billion revenue increase from discretionary measures is too high for 1980, the important question is the attainment of a \$10.7 billion result for 1982 and \$12.2 billion result for 1983.

What would the impact be on the public sector investment program of a lower growth rate for non-petroleum current revenues? If the resulting revenue impact of discretionary tax and administration measures were only about half as large as portrayed by Table IV.6, the resulting average annual revenue loss would amount to about 1.85% of GDP (for 1980-84 non-petroleum current revenues would average 14.58% of GDP instead of 16.43%). With current expenditure levels remaining as shown in the Plan, current account saving would average 5.76% of GDP for 1980-84 instead of 7.61% (as projected in Table IV.5).

Governmental response to the decrease in current saving is an obvious and important question. A larger volume of domestic banking system finance would have an undesirable inflationary impact and external credit funding is largely a question of debt management. It is likely that capital expenditures would be reduced by the full amount of the declines in current saving. The reduction in public sector investment would amount to about 17% of the planned amount as is shown by the following calculation:

(i)	public sector saving	\$3,191 million <u>1/</u>	
(ii)	less external debt amortization	<u>\$2,818</u>	"
		\$ 373	"
(iii)	plus public sector utilization of external credits	<u>\$4,007</u>	"
		\$4,380	"
(iv)	plus net borrowing from domestic banking system	<u>\$ 406</u>	"
	equals public sector investment	\$4,786	"
	<u>5817 - 4786</u>		
	5817		equals a 17.7% of reduction.

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1. Projected cumulative 1980-84 GDP equals S/. 1,385.8 billion and 5.76% of this sum is \$3,191 million.

TABLE IV.5

CONSOLIDATED PUBLIC SECTOR ACCOUNTS

1979, AND PROJECTED 1980-1984 AS

	<u>SHARES OF GDP</u>					
	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
GDP in 1979 prices (million of sucres)	226,729	242,119	257,285	275,808	297,141	313,483
Growth Rate of GDP	5.0	5.6	6.3	7.2	7.7	5.5
A. <u>Current Revenues</u>	<u>21.13</u>	<u>25.64</u>	<u>25.79</u>	<u>25.59</u>	<u>25.11</u>	<u>25.72</u>
Non-Petroleum	12.84	15.57	16.12	16.69	16.62	17.17
Petroleum	8.29	10.07	9.67	8.90	8.48	8.85
B. <u>Current Expenditures</u>	<u>16.04</u>	<u>18.27</u>	<u>18.23</u>	<u>17.87</u>	<u>17.53</u>	<u>17.93</u>
Wages	7.25	10.05	10.00	9.82	9.57	9.63
Goods & services	5.98	4.37	4.25	3.85	3.43	3.44
Transfers	0.13	0.25	0.24	0.23	0.21	0.21
Interest on Debt	2.68	3.60	3.75	3.93	4.27	4.66
(Domestic)	(0.58)	(0.63)	(0.66)	(0.68)	(0.69)	(0.73)
(External)	(2.10)	(2.97)	(3.10)	(3.30)	(3.57)	(3.93)
C. <u>Current Account</u>	<u>5.09</u>	<u>7.38</u>	<u>7.56</u>	<u>7.72</u>	<u>7.58</u>	<u>7.79</u>
<u>Saving (A-B)</u>						
D. <u>Capital Revenues</u>	<u>0.60</u>	<u>0.54</u>	<u>0.50</u>	<u>0.47</u>	<u>0.44</u>	<u>0.41</u>
E. <u>Capital Expenditure</u>	<u>9.40</u>	<u>11.68</u>	<u>12.13</u>	<u>11.95</u>	<u>11.64</u>	<u>11.35</u>
Real Investment	9.12	10.00	10.24	10.57	10.71	10.82
Financial Investment	0.28	0.76	0.72	0.65	0.59	0.53
Transfers	----	0.92	1.17	0.73	0.34	----
F. <u>Deficit (-) or</u>						
<u>Surplus (+)</u>	<u>-3.71</u>	<u>-3.77</u>	<u>-4.06</u>	<u>-3.76</u>	<u>-3.63</u>	<u>-3.14</u>
Memo						
Total Revenues (=A+D)	21.73	26.18	26.29	26.06	25.55	26.13
Total Expenditures (= B+E)	25.44	29.95	30.36	29.82	29.17	29.28

SOURCE: For 1979, see Table D; for 1980-84 CONADE data bearing data of 11 January 1980 (differs somewhat from presented CONADE, Plan de desarrollo economico y social version preliminar, Tomo I. Vol.3.p. VI.13)-

TABLE IV.6

PROJECTED INCREASE IN PUBLIC SECTOR NON-PETROLEUM CURRENT REVENUES AS RESULT OF LEGAL AND ADMINISTRATIVEMEASURES (In Millions of 1979 Sucres)

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>Total</u>
<u>Tax Revenues</u>						
a. Administrative Reforms	2,254.4	2,431.5	2,612.1	2,826.7	3,059.2	13,183.9
b. Legal Reforms	688.2	1,796.0	3,330.5	3,833.6	4,362.2	14,010.5
c. Sub-total	2,942.6	4,227.5	5,942.6	6,660.3	7,421.4	27,194.5
<u>Rates and Prices</u>						
a. Administrative Reforms	225.0	246.0	369.2	499.2	621.8	1,956.3
bl Legal Reforms	3,389.4	3,855.7	4,412.7	5,071.2	6,285.9	23,015.6
c. Sub-total	3,614.4	4,101.7	4,781.9	5,566.2	6,907.7	24,971.9
Total	6,557.0	8,329.2	10,724.5	12,226.5	14,329.1	52,166.3
Public Sector Current Revenues						
--Without						
Discretionary Revenue Measures	31,145.0	33,147.0	35,300.2	37,167.9	39,486.9	176,247.2
(Growth Rate %)	7.0	6.4	6.5	5.3	6.2	
-- With Discretionary Revenue Measures	37,702.2	41,476.2	46,024.7	49,394.4	53,816.0	228,413.5
(Growth Rate)	29.6	10.0	11.0	7.3	9.0	

SOURCE: CONADE, Plan de Desarrollo economico y social, 1980-1984, capitulo II, pp.110-119.

For a 5.5% p.a. growth of GDP instead of 6.5% as projected by the Plan the calculation would be as follows:

(i)	public sector saving	\$3,076 million ^{1/}	
(ii)	less external debt amortization	<u>\$2,818</u>	"
		\$ 258	"
(iii)	plus public sector utilization of external credits	<u>\$4,007</u>	"
		\$4,265	"
(iv)	plus net borrowing from domestic banking system	<u>\$ 343</u>	"
	equals public sector investment	\$4,668	"
	<u>5817 - 4668</u>		
	5817		equals a 20.8% reduction

F. Conclusion

At global level, the financing available for the 1980-84 public sector investment program will probably be about 20% less than the magnitude projected in the official development plan even with a continuing and consistent effort by the GOE to increase public sector current revenues via improved tax administration, discretionary tax measures, and other measures to maintain the profitability of state enterprises. A shortfall of this amount is unlikely to create (or worsen) the real-world counterpart problem. The key to the timely provision of domestic counterpart financing resides in the administrative innovation presently being implemented by the GOE which, in effect, will prevent the usual side-tracking and dispersion in the provision of central government counterpart resources. This innovation is administratively tied to external debt management and underscores the GOE's desire to improve the term structure of external debt through increased resource to IFI financing. In addition, the magnitude of external borrowing planned by the GOE exceeds what can be accomplished on a project-specific basis, and debt refinancing credits will undoubtedly also provide a substantial portion of GOE counterpart funding.

1. In this case projected cumulative GDP for 1980-84 equals S/. 1,334.9 billion (\$53.4 billion) and 5.76% of this sum is \$3,076.

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TAGS:

SUBJECT: DAEC REVIEW OF ECUADOR INTEGRATED RURAL DEVELOPMENT PID

1. SUBJECT PID WAS REVIEWED AND APPROVED BY THE DAEC ON FEBRUARY 11, 1980. THE FOLLOWING ISSUES SHOULD BE ADDRESSED DURING PP PREPARATION.

2. REPLICATION: THE PROJECT STRATEGY ASSUMES THE REPLICATION OF THE THREE INTEGRATED RURAL DEVELOPMENT (IRD) MODELS IN OTHER REGIONS IN ECUADOR BY THE GOE. HOWEVER, BUDGET DEFICITS ARE PROJECTED OVER THE CURRENT CDSS PERIOD ALTHOUGH THEY MAY NOT BE AS SEVERE AS ORIGINALLY STATED. IN ADDITION, OTHER DONOR PROJECTS REQUIRE SUBSTANTIAL COUNTERPART FUNDING. IT IS, THEREFORE, IMPORTANT THAT THE COMPONENTS OF THE IRD MODELS FINANCED BY THE PROJECT BE THE LEAST COST ALTERNATIVES, THAT THEY BE POTENTIALLY REPLICABLE OVER BROADER AREAS, AND THAT RECURRENT COSTS CAN BE SUSTAINED WITHIN THE LIMITS OF AVAILABLE GOE FISCAL RESOURCES. FURTHER, THE PP DISCUSSION OF THE GOE'S ABILITY TO REPLICATE THE PROJECT SHOULD BE WITHIN THE CONTEXT OF AN OVERALL DESCRIPTION OF GOE POLICY REGARDING INTEGRATED RURAL DEVELOPMENT AND INCLUDE A DESCRIPTION ON HOW FUTURE INTEGRATED RURAL DEVELOPMENT ACTIVITIES OF

THE MULTILATERAL BANKS WILL BE CARRIED OUT. IN SUMMARY, THE PP SHOULD FULLY ANALYZE THE ISSUE OF THE GOE'S ABILITY TO REPLICATE THE PROJECT MODELS TO INSURE THAT A DISPROPORTIONATE SHARE OF AVAILABLE RESOURCES IS NOT BEING USED FOR QUOTE SHOWPIECE UNQUOTE OR QUOTE ENCLAVE UNQUOTE PROJECTS.

3. FEASIBILITY OF THE COORDINATING MECHANISM: THE INSTITUTIONAL ANALYSIS IN THE PP SHOULD ANALYZE THE FEASIBILITY OF UTILIZING THE PROPOSED RURAL DEVELOPMENT SECRETARIAT (RDS) AS THE PRINCIPAL PLANNING AND FINANCING MECHANISM FOR THE THREE IRD MODEL PROJECTS. IN THE ANALYSIS PARTICULAR ATTENTION SHOULD BE PAID TO: (1) THE POSSIBILITY OF DECENTRALIZING PROJECT MANAGEMENT, ADMINISTRATION, BUDGETING AND RESOURCE DISTRIBUTION AT THE REGIONAL LEVEL; AND (2) ENCOURAGING PARTICIPATION OF THE RURAL BENEFICIARIES IN THE PROJECT DESIGN AND IMPLEMENTATION PROCESS. WE ARE CONCERNED THAT THE HIGHLY CENTRALIZED COORDINATING STRUCTURE PROPOSED IN THE PID WILL PRECLUDE OR INHIBIT THE PARTICIPATION OF THE DECENTRALIZED ZONAL OFFICES OF THE MINISTRY OF AGRICULTURE AND/OR THE REGIONAL DEVELOPMENT AGENCIES, AND CREATE UNNECESSARY BOTTLENECKS IN THE ADMINISTRATION OF THE PROJECT. OPERATING PROCEDURES AND COORDINATING MECHANISMS REQUIRED TO INSURE THEIR PARTICIPATION SHOULD BE CLEARLY DESCRIBED IN THE PP. FURTHER, THE MANNER AND DEGREE TO WHICH MEMBERS OF THE TARGET GROUP WILL PARTICIPATE IN PROJECT DESIGN AND IMPLEMENTATION SHOULD BE MADE EXPLICIT IN

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THE PP, INCLUDING ALL NEW PROCEDURES OR FEEDBACK MECHANISMS WHICH NEED TO BE ESTABLISHED TO INCREASE THE EFFECTIVENESS OF LOCAL PARTICIPATION. LASTLY, THE PP SHOULD ADDRESS THE POSSIBILITY OF AN ALTERNATIVE COORDINATING AGENCY OR MECHANISM IF THE RDS IS NOT ESTABLISHED BY THE GOE, E.G., THE MINISTRY OF AGRICULTURE. THIS IS PARTICULARLY IMPORTANT IN VIEW OF PRESIDENT ROLDOS' RECENT VETO OF CONADE LEGISLATION WHICH WAS TO HOUSE THE RDS.

ANNEX B

(Page 2 of 3)

4. PROJECT ANALYSIS:

A. THE PP SHOULD DESCRIBE THE CRITERIA FOR THE SELECTION OF THE THREE PROJECT AREAS TO BE CHOSEN DURING INTENSIVE REVIEW AND INCLUDE A PROFILE OF THE TARGET GROUP IN THOSE GEOGRAPHIC LOCATIONS. THIS PROFILE, OR TARGET GROUP ANALYSIS, SHOULD INCLUDE DATA REGARDING THE SMALL FARM UNIT SUCH AS UTILIZATION OF CREDIT, INDIGENOUS PRODUCTION PRACTICES, HEALTH AND NUTRITION STATUS, ETC. IF THE THIRD PROJECT AREA WILL NOT BE IDENTIFIED UNTIL SOME TIME DURING ACTUAL PROJECT IMPLEMENTATION, THE

CRITERIA ON WHICH ITS SELECTION WILL BE MADE SHOULD BE INCLUDED IN THE PP. LASTLY, WE RECOMMEND THAT CRITERIA FOR THE SELECTION OF REGIONS SHOULD BE BASED, AT LEAST IN PART, ON MAXIMIZING THE PARTICIPATION OF THE TARGET GROUP.

B. THE PID DESCRIBES AN ANALYTICAL PLANNING PROCESS (ESTUDIOS DIAGNOSTICOS) WHICH WILL BE USED TO SELECT THE INTERVENTIONS FOR EACH PROJECT AREA AND WHICH ASSUMES THAT IN THE INITIAL MODELING STAGES THE COMPONENTS OF THE IRD MODELS FOCUS EXCLUSIVELY ON THE AGRICULTURAL ASPECTS OF THE RURAL POOR'S LIVELIHOOD. THE PP SHOULD CONTAIN A SUMMARY OF THE DIAGNOSTIC STUDIES WHICH WOULD JUSTIFY THIS FOCUS ON AGRICULTURE. WE WOULD FURTHER CAUTION THE MISSION DURING INTENSIVE REVIEW NOT TO ASSUME THAT THE MODELS WOULD EXCLUSIVELY FOCUS ON AGRICULTURE, LEAVING POSSIBLE INTERVENTIONS IN HEALTH, NUTRITION, OR EDUCATION AS ALTERNATIVE SUBPROJECT ACTIVITIES.

C. IN ORDER TO MEET 611 REQUIREMENTS OF THE FAA, SUBPROJECT ACTIVITIES FOR AT LEAST TWO OF THE THREE MODELS SHOULD BE WELL DEFINED WITH FIRM COST ESTIMATES IN THE PP IN ORDER TO JUSTIFY AN A.I.D. INVESTMENT OF \$12 MILLION. WE UNDERSTAND THE MISSION IS PLANNING ADDITIONAL DISCUSSIONS WITH GC/LAC WITH RESPECT TO 611 REQUIREMENTS FOR THIS PROJECT. THE INSTITUTIONAL ANALYSIS FOR THE RDS WILL ALSO BE CRUCIAL IN MEETING 611 REQUIREMENTS.

D. THE EXTENT TO WHICH SUBPROJECT ACTIVITIES WILL ADDRESS THE "FUNDAMENTAL CONSTRAINT" AFFECTING EXPANDED PRODUCTION AND PRODUCTIVITY OF THE SMALL FARM UNIT, I.E., NATURAL RESOURCE IMPROVEMENT, LAND TITLING, ETC.; SHOULD BE HIGHLIGHTED IN THE PP. WE ALSO SUGGEST THAT A PRIORITIZED LISTING OF INTERVENTIONS BE INCLUDED IN THE TECHNICAL ANALYSIS SECTION.

5. TECHNICAL ASSISTANCE: THE PID PROPOSES A SUBSTANTIAL LEVEL OF TECHNICAL ASSISTANCE TO PROVIDE THE RDS AND IRD MODELS WITH LONG-TERM TECHNICAL ASSISTANCE DURING IMPLEMENTATION. THE SHORTAGE OF SKILLED STAFF TO IMPLEMENT THE GOE'S INTEGRATED RURAL DEVELOPMENT PROGRAM SHOULD BE ANALYZED IN THE PP. A DETAILED TECHNICAL ASSISTANCE PLAN WHICH DEMONSTRATES HOW THE CAPACITY OF GOE PERSONNEL TO MANAGE THEIR OWN IRD PROGRAM WILL BE STRENGTHENED SHOULD BE DEVELOPED AND SHOULD INCLUDE A DESCRIPTION OF THE SPECIFIC SKILLS OF THE TECHNICAL ADVISORS. IN ADDITION, THE PP SHOULD ALSO DESCRIBE THE LINKAGES BETWEEN THE T A PLAN AND THE MISSION'S TRAINING FOR DEVELOPMENT PROJECT WHICH WILL PROVIDE CENTRAL AND REGIONAL LEVEL TRAINING FOR COUNTERPART PERSONNEL INVOLVED IN EXECUTING PUBLIC

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ANNEX B
(Page 3 of 3)

SECTOR PROJECTS. THE CONTRACTING MODE (A.I.D. DIRECT OR HOST COUNTRY CONTRACTS) PROPOSED DURING IMPLEMENTATION SHOULD ALSO RELATE TO THE NEED TO PROVIDE GOE PROJECT MANAGERS WITH FULL EXECUTIVE AND IMPLEMENTATION RESPONSIBILITIES.

FYI: IF THE MISSION PROPOSES TO PROCURE ADVISORY AND/OR TRAINING SERVICES FROM CODE 941 COUNTRIES UNDER THE GRANT, AS MENTIONED DURING THE REVIEW, A SOURCE WAIVER REQUIRING AID/W APPROVAL WOULD BE REQUIRED FOR INDIVIDUAL TRANS-ACTIONS EXCEEDING \$25,000.

6. EVALUATION PLAN: THE EVALUATION CRITERIA FOR MEASURING PROJECT IMPACT SHOULD BE DESCRIBED IN THE PP INCLUDING INDICATORS FOR THE INSTITUTIONALIZATION OF THE

RDS STRUCTURE AND ADEQUATE FUNDING PROVIDED IN THE FINANCIAL PLAN FOR CONDUCTING BASELINE SURVEYS AND OTHER DATA COLLECTION ACTIVITIES. WE URGE THE MISSION TO REPLACE THE PROPOSED INDICATOR FOR A REDUCTION IN MALNUTRITION WITH A HOUSEHOLD FOOD CONSUMPTION VARIABLE UNLESS THE IPD MODELS CONTAIN SPECIFIC SUBPROJECT ACTIVITIES WHICH CONFRONT THE INFECTION/DIARRHEAL DISEASE/MALNUTRITION SYNDROME USUALLY ADDRESSED BY HEALTH SECTOR INTERVENTIONS. THE MISSION MAY WISH TO CONSIDER USING DS/RAD'S PROJECT WITH CORNELL UNIVERSITY TO ASSIST IN THE EVALUATION DESIGN. VANCE
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PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

ANNEX C

Life of Project: _____ to FY 84
From FY 80
Total U.S. Funding \$11,800,000
Date Prepared: JUNE 27, 1980

Project Title & Number: Integrated Rural Development (Agriculture), 518-0012

PAGE 1

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes: (A-1)</p> <p>Increase production, employment, and incomes, and otherwise improve the well-being of the rural poor.</p>	<p>Measures of Goal Achievement: (A-2)</p> <p>Each IRD project undertaken will have objectives for income, production, and nutritional status improvements by participating farmers (See individual project descriptions).</p>	<p>(A-3)</p> <p>A system has been designed and will be established in the IRD project areas through which selected farmers note input, production, and marketing data for crops and vegetables. From this information, conclusions on production and income effects can be drawn: Likewise, selected mothers will weigh pre-school children on a regular basis to gauge nutritional progress.</p>	<p>Assumptions for achieving goal targets: (A-4)</p> <ol style="list-style-type: none"> 1. Continuation of the GOE commitment to eliminate rural poverty and to increase agricultural production, particularly through the mechanism of integrated rural development projects. 2. A political environment conducive to conducting an integrated rural development program of this nature

ANNEX C

AID 1920-20 (1-73)
SUPPLEMENT 1PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORKLife of Project: From FY 80 to FY 84
Total U.S. Funding \$11,800,000
Date Prepared: June 27, 1980Project Title & Number: Integrated Rural Development (Agriculture), 518-0012

PAGE 2

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Purpose: (B-1)</p> <p>Help the GOE institutionalize its integrated rural development (IRD) mechanism, particularly through implementing and planning replicable IRD field projects which initially emphasize agricultural development activities.</p>	<p>Conditions that will indicate purpose has been achieved: End-of-Project status. (B-2)</p> <ol style="list-style-type: none"> 1. The GOE institutional mechanism in place and functioning. 2. The GOE implementing at least one other IRD project, not funded by AID, through this mechanism. 3. The two AID/GOE-financed IRD projects underway and functioning according to plan. 4. The Jipijapa IRD project planned and ready for financing. 5. At least two other IRD projects planned through the IRD mechanism. 	<p>(B-3)</p> <p>The annual evaluations are designed to look at the functioning of the mechanism as well as at macro and micro-level progress in each of the IRD projects financed.</p> <p>See Section IV.B. of PP.</p>	<p>Assumptions for achieving purpose: (B-4)</p> <ol style="list-style-type: none"> 1. Top-level GOE commitment to establish a strong IRI coordinating mechanism. 2. Willingness of other GOE agencies to participate in and make commitments to IRD program.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 80 to FY 84
Total U.S. Funding \$11,800,000
Date Prepared: JUNE 27, 1980

Project Title & Number: Integrated Rural Development (Agriculture), 518-0012

PAGE 3

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Outputs: (C-1)	Magnitude of Outputs: (C-2)	(C-3)	Assumptions for achieving outputs: (C-4)
<p>A. At the mechanism level:</p> <ol style="list-style-type: none"> 1. Rural Development Secretariat operating, with IRD planning, evaluation, implementation, training, and evaluation units supporting IRD project efforts. 2. CRM able to effectively participate in IRD project planning. 3. Functioning Region 4 development authority. <p>B. At IRD project level:</p> <p>Each IRD project has output indicators (e.g., hectares planted with fruit trees, kilometers of canals built). These are detailed in the project descriptions and supporting documents.</p>		<p>Project records and evaluations.</p>	<p>Adequate human resources assigned to RDS and participating institutions.</p>

ANNEX C

AID 1000-20 (11-70)
SUPPLEMENT 1

PROJECT DESIGN SUMMARY

LOGICAL FRAMEWORK

Integrated Rural Development (Agriculture) - 518-0012

Life of Project:
From FY 80 to FY 84
Total U.S. Funding \$11,800,000
Date Prepared: June 77 1980

PAGE 4

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS			MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Inputs: (D-1)	Implementation Target (Type and Quantity) (D-2) (\$ 000) (This project only)			(D-3)	Assumptions for providing inputs: (D-4)
	AID		GOE	Project Records	No undue bureaucratic or technical delays in the provision of Project inputs.
	Loan	Grant			
A. Assistance to RDS	550	850	1,548		
B. Regional IRD Planning and TA	160	388	548		
C. Salcedo IRD Project	2,988	300	5,723		
D. Quimiag-Penipe IRD Project	4,151	300	5,984		
E. Inflation and Contingencies	1,951	162	697		
Total	9,800	2,000	12,500		
(See Table III.10 for item breakouts)					

ADDITIONAL PROJECT DETAILS AND ANALYSES

I. Rural Roads

New road and bridge construction will occur only in the Quimiag-Penipe IRD project. Three short road segment totalling approximately ten kilometers will be built. As shown on the map on the following page, the new road segments are: (1) a four kilometer segment from Paculpala to Leonán; (2) a four kilometer segment from Gusu to Inquisay; and (3) a two kilometer segment from Quimiag to Tumba.

The two segments of 4 kilometer will provide vehicle access to small indigeneous communities in the upper highlands. The two kilometer segment will provide improved, all weather access to the market center of Quimiag for several small villages.

The construction will be administered by the Provincial Council of Chimborazo with design and technical supervision provided by the Ministry of Public Works pursuant to normal GOE operating procedures for class four roads. The Council also will be responsible for subsequent maintenance. The following design criteria will be used:

-Width of road compacted by pneumatic roller	4.0 m.
-Minimum thickness of compacted layer	30.0 cm.
-Maximum gravel size	7.0 cm.
-Width of shoulders	0.60 m.
-Maximum gradient	10%
-Minimum horizontal curve radius	30.0 m.

There are two alternative types of surfacing. For purposes of cost estimation, the Project assumes that the Quimiag-Tumba road will be cobblestone and the other two segments will be gravel. The following are the cost estimates using current Ministry of Public Works figures for each type of surface.

COST ESTIMATE (Per KM of Road)

ALTERNATIVE No. 1 - GRAVEL ROAD

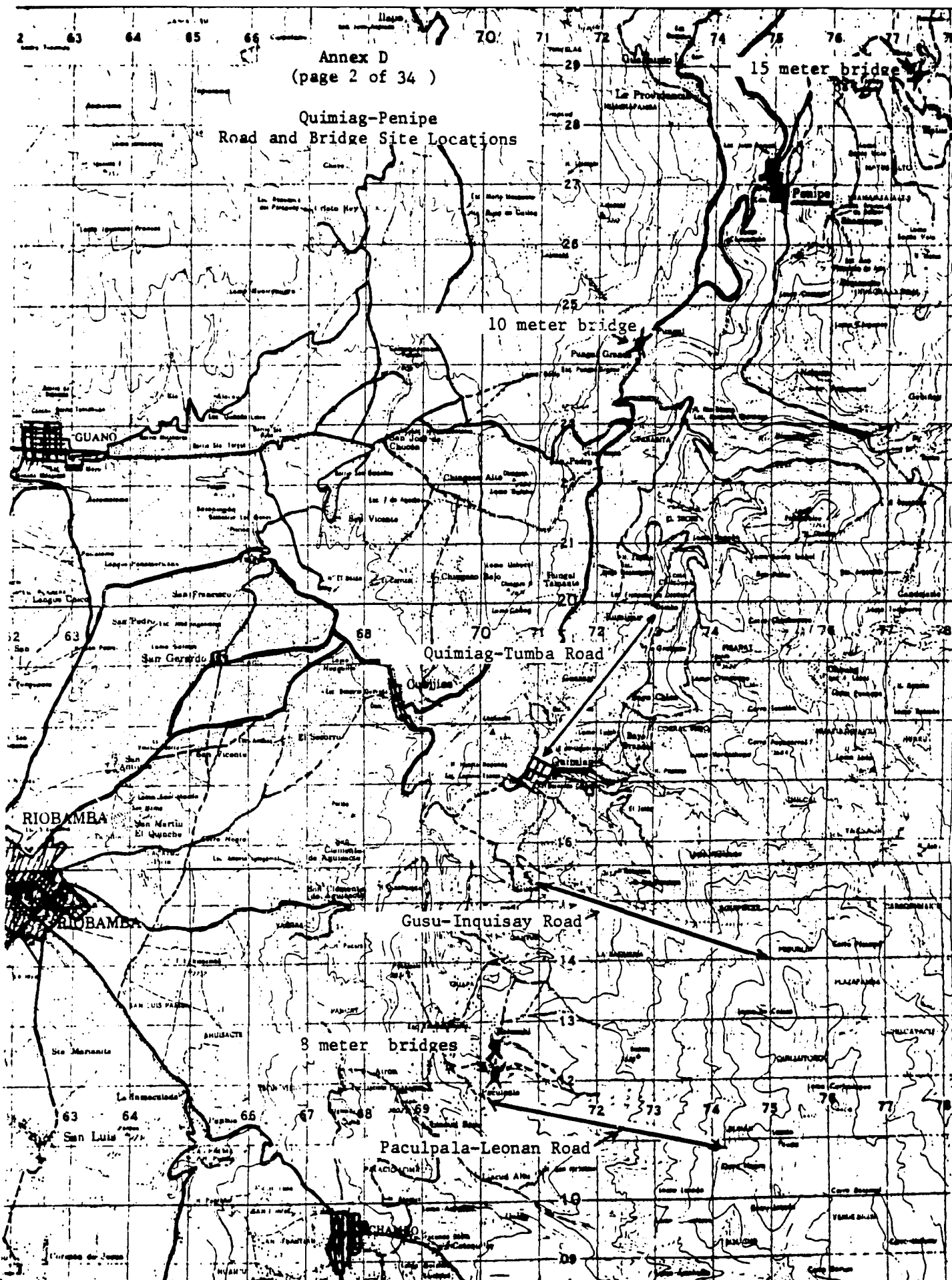
Total width	5.20 m.
Subbase	30.00 cm.

<u>Item</u>	<u>Unit</u>	<u>Amount</u>	<u>Unit Price S/.</u>	<u>Total Cost</u>
Clearing and Grubbing	ha.	1	5,000	5,000
Unclassified Excavation	M ³	12,000	18	216,000
Rock excavation	M ³	500	80	40,000
Sub-base material	M ³	1,200	100	120,000
36" Culvert Pipe	L.M.	24	3,780	90,720
Class B Concrete	M ³	20	1,800	36,000
Excavation for culverts	M ³	60	120	7,200

COST PER KILOMETER TOTAL S/.514,920
(\$ 18,390)

Annex D
(page 2 of 34)

Quimiag-Penipe
Road and Bridge Site Locations



ALTERNATIVE No. 2

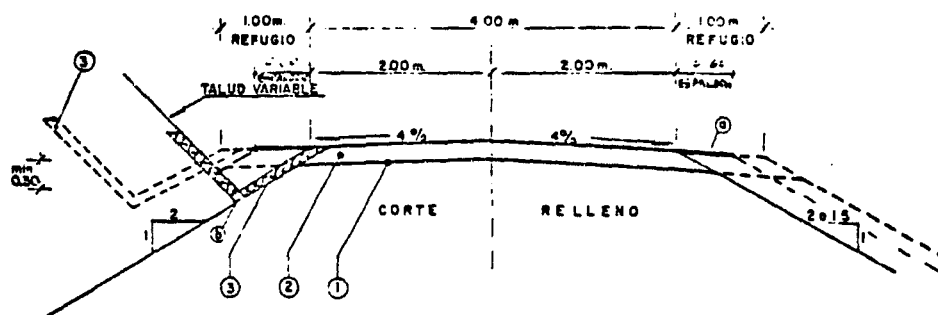
COBBLESTONE

<u>Item</u>	<u>Unit</u>	<u>Amount</u>	<u>Unit Price S/.</u>	<u>Total Cost</u>
Clearing and grubbing	ha.	1	5,000	5,000
Unclassified excavation	M ³	12,000	18	216,000
Rock excavation	M ³	500	80	40,000
Cobblestone	M ²	5,200	45	234,000
36" Culvert Pipe	L.M.	24	3,780	90,720
Class B Concrete	M ³	20	1,800	36,000
Excavation for culverts	M ³	60	120	7,200

COST PER KILOMETER TOTAL

S/.628,920
(\$ 22,461)

TYPICAL CROSS SECTION OF RURAL ROAD



SECCION TIPICA 4

LEYENDA

- ① SUPERFICIE DE SUBRASANTE COMPACTADA
- ② SUB-BASE (Espesor variable)
- ③ CUNETTA REVESTIDA (Empedrada)

NOTAS: a) PARA TRAMOS LARGOS, DEBE ENSANCHARSE LA CALZADA PARA PROVEER REFUGIOS DE ENCUENTRO DE 10 MTS. DE LARGO (MAS TRANSICION) CON ESPACIAMIENTO APROXIMADO DE 500 MTS. EN TERRENO LLANO, 250 MTS. EN TERRENO ONDULADO Y 150 MTS. EN TERRENO MONTAÑOSO.

b) COMO REGLA GENERAL, USE CUANDO LA PENDIENTE LONGITUDINAL SEA MAYOR DE 4%, Y DONDE EL MATERIAL EN SITIO SEA EROSIONABLE.

As shown in the map, four small reinforced concrete bridges will be built on existing roads in the Quimiag-Penipe project. One, just North of Pungal Grande will replace an existing structure which has deteriorated to the point of being unsafe. The other two will provide river crossings in lieu of fords. The following are the design criteria and cost estimates using Ministry of Public Works figures.

REINFORCED CONCRETE BRIDGES

DESIGN CRITERIA

Width of bridge	4.26 m.
Slab thickness (T-beams)	0.14 m.
Load H-10	

COST ESTIMATE

<u>Item</u>	<u>Length (m)</u>	<u>Cost/m (S/. '000)</u>	<u>Amount</u>	
			<u>Total</u> (S/. '000)	<u>(US\$ '000)</u>
Bridges (2)	8	20.0	320.0	12.8
Bridges 1	10	24.0	240.0	9.6
1	15	32.0	480.0	19.2
TOTAL			1,040.0	41.6

Road improvement is to be carried out in both IRD project areas. Depending on the present conditions of the various road sections, the improved surface would either be cobblestone or gravel. In either case, drainage works also will be a part of the improvement. A total of 100 kilometers of road improvement work, equally divided between Salcedo and Quimiag-Penipe is estimated as necessary. The Ministry of Public Works advises that approximately \$7,500 equivalent per kilometer should be estimated for work of this nature.

AID's contribution to the road improvement activities in part may be made through the financing of equipment that will be turned over to the Provincial Councils. Specifically, two dump trucks and one motor grader are being considered.* The first year implementation plan will lay out more precisely the manner in which the contribution will be provided.

In sum, the cost estimates for the rural roads components for the two IRD projects is as follows:

Quimiag-Penipe

<u>New roads</u>	<u>Length (Km)</u>	<u>Cost/Km (US\$)</u>	<u>Total Cost (US\$)</u>
Puculpala-Leonan	4.0	18,390	73,560
Gusu-Inquisay	4.0	18,390	73,560
Químiag-Tumba	2.0	22,461	44,922
Sub-Total			\$ 192,042

* Any such dollar procurement will reduce AID's local currency contribution to the road construction component. The local contribution would be increased accordingly so that no additional AID funds would be required for this component.

Bridges

eight meter spans (2)	12,800	
ten meter span (1)	9,600	
fifteen meter span (1)	<u>19,200</u>	41,600

Road Improvement

50 Kms. at \$7,500/km	<u>375,000</u>
Sub-Total	\$ 596,242
Physical contingency	<u>31,358</u>
Total Químiag-Penipe	\$ 640,000

Salcedo

Road Improvement

50 Kms. at \$7,500/Km	\$ 375,000
Physical Contingency	<u>25,000</u>
Total Salcedo	\$ 400,000

2. Community Centers

The Project will finance the construction of community centers in 28 comunas of Salcedo and 13 comunas and 3 parishes of Químiag-Penipe. In addition, funds will be provided for improvements and renovations of existing centers throughout the Project site.

The community centers would be permanent structures of approximately 72 square meters with a central hall for meetings and training, storage facilities, and a small office (see drawings attached). The design would be prepared according to standards already developed by the Ministry of Agriculture (MAG) and found acceptable to AID. The construction details are as follows:

Foundations - Foundations would be of cyclopean concrete, consisting of 60% plain concrete and 40% hard coarse stones not less than five inches. Footings for columns should be reinforced concrete.

Superstructure - Columns, beams, lintels and beam ties would be of reinforced concrete.

Wall Masonry - Walls would be constructed with bricks locally provided.

Roofing - Corrugated asbestos cement roofing sheets would be placed over roof trusses with steel framing.

Windows and Glass - Angle and T type iron windows would be used.

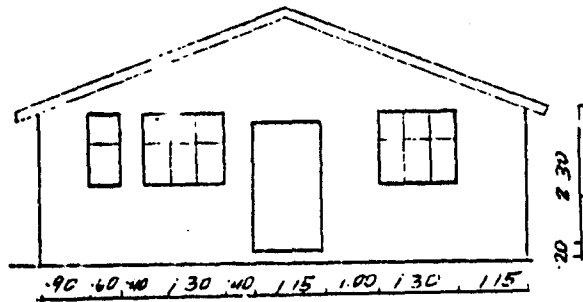
Each community or comuna would be responsible for providing an adequate site and mobilizing community labor as local contribution, MAG engineers will supervise construction. The unit cost estimates are:

	<u>Sucres</u>
Basic construction	260,000
Engineering, supervision, and contingencies	<u>3,440</u>
Total base cost	294,400 = US\$ 10,500

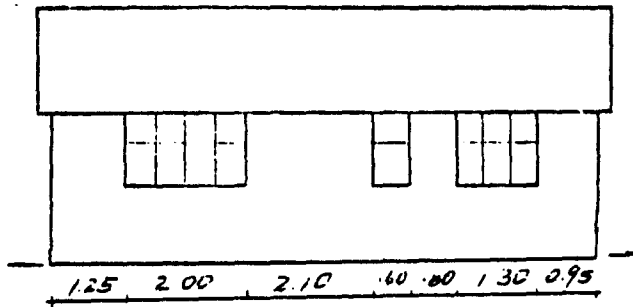
In addition to the 44 new centers to be constructed, it is estimated that an approximately equal number of community facilities of one sort or another will be candidates for improvements, renovations, etc. An estimated 28 are in Salcedo and 16 are in Químiag-Penipe. The Project budgets \$2,000 per facility or a total of \$100,000 for this work.

The cost estimate for the community centers components for the two IRD project sites is as follows:

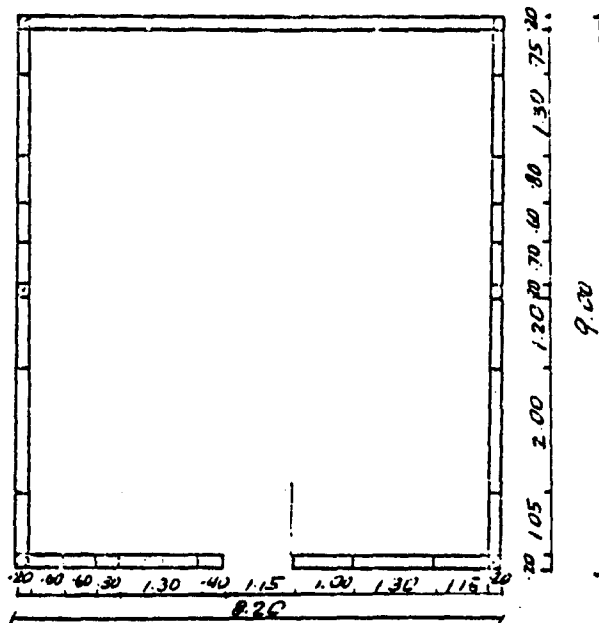
<u>ITEM</u>	<u>No.</u>	<u>Unit Cost</u>	<u>Total Cost</u>
<u>Salcedo</u>			
Construction of New Community Centers	28	10,500	\$ 294,000
Improvement/Renovation	28	2,000	<u>56,000</u>
Total Salcedo			\$ 350,000
<u>Químiag-Penipe</u>			
Construction of New Community Centers	16	10,500	168,000
Improvement/Renovation	16	2,000	<u>32,000</u>
Total Químiag-Penipe			\$ 200,000
TOTAL PROJECT			\$ 550,000



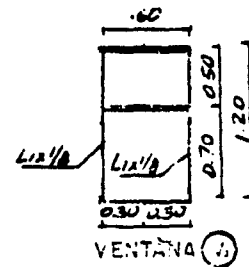
FACHADA PRINCIPAL



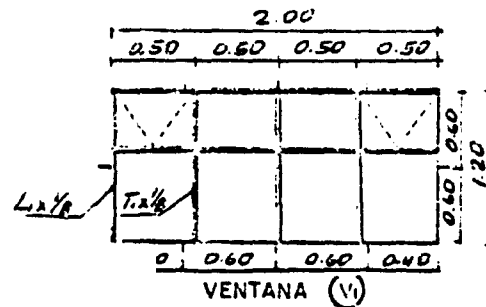
FACHADA LATERAL



PLANTA



VENTANA (I)



VENTANA (VI)

3. Salcedo Input Supply/Marketing facility and Nursery

Funding will be provided for the construction of an input supply/marketing facility to service the Salcedo Project area. The proposed facility is designed to handle the volume of input-supply needs (fertilizer, seeds, herbicides, pesticides, animal vaccine, etc.) and the expected increase in the production of fruits and vegetables. In addition, this facility will serve the office needs of the IRD project staff.

The design details include a simple structure of 45 meters long by 20 meters wide and divided according to the following uses:

Marketing	500 m ²
Input supply	150 m ²
IRD office	<u>250 m²</u>
Total	900 m ²

The design criteria and construction features will be similar to those used for the community centers, described in the previous section. The cost estimates are as follows:

A. Construction

1. Marketing Center 500 m ² at \$ 130 m ²	\$ 65,000
2. Input-Supply 150 m ² at \$134 m ²	20,100
3. IRD office space 250 m ² at \$135 m ²	<u>33,750</u>
Subtotal	\$118,850

B. Equipment Marketing Center

1. Truck scale	\$ 25,000
2. Two sorting tables at \$ 250 each	500
3. Two roller conveyors at \$ 1,000 each	2,000
4. Four platform trucks at \$ 250 each	1,000
5. Two platform scales at \$ 3,000 each	6,000
6. Packing equipment	500
7. Fruit cleaning and washing facility	<u>750</u>
Subtotal	\$ 35,750

C. Equipment Input Supply

1. Refrigerator (for vaccine)	500
2. Stands	1,000
3. Scales:	
a. Platform	500
b. Beams	<u>50</u>
Subtotal	\$ 2,050

D. Equipment IRD Office

1. Calculators-Desk	\$ 100
2. Two manual typewriters	<u>250</u>
Subtotal	\$ 350
Total Costs of Construction and Equipment	<u>\$157,000</u>

The GOE contribution of \$19,000 will cover the acquisition of a site for the facilities which will be located near Salcedo.

Under the Salcedo IRD project, a fruit tree nursery for 100,000 seedlings per year will be provided. AID will finance the total investment costs on an existing MAG site. A detailed budget for the supplies and equipment follows:

1. Seeds and seedlings 150,000/year	\$ 75,000
2. Back-pack sprayers (4 five-gallon capacity at \$ 125 each)	500
3. Power sprayer (twenty gallon capacity)	600
4. Post-tree hole diggers (20 at \$ 20 each)	400
5. Water reservoir for 2 hectares of nursery and 20 hectares of demonstration plots	5,200
6. Safety masks and replacement parts (20 at \$ 20 each)	400
7. Pruning Shears (20 at \$ 10 each)	200
8. Heavy Duty tree trimmers (2 at \$ 50 each)	100
9. Replacement blades for tree trimmers (10 at \$ 10 each)	100
10. Tractor (35 hp) plus attachments	15,000
11. Greenhouse 50 m ²	13,000
12. Pick-up trucks (3 at \$10,000 each)	30,000
13. Fencing for entire area	15,000
14. Irrigation equipment	4,000
15. Safety Cabinets (4 at \$1,000 each)	4,000
16. Small Dispatching Unit	5,500
17. Pots, hoes and spades	6,000
18. Miscellaneous equipment	<u>2,000</u>
	\$117,000

4. Qufmiag-Penipe Fruit Tree Nursery and Marketing Centers

A fruit tree nursery with a capacity to serve the needs of the Qufmiag-Penipe project area is being proposed as part of the field activities. A detailed budget for this nursery follows:

1. Land (2 hectares of nursery with irrigation)	\$ 8,000*
2. Land (20 hectares for demonstration with irrigation)	80,000*
3. Seeds and Seedlings (45,000/year)	33,750
4. Back-pack sprayers (4 five gallon capacity at \$125 each)	500
5. Post-tree hole diggers (20 at \$20 each)	400
6. Water reservoir for 2 hectares of nursery	5,200
7. Safety Masks & Replacement parts (10 at \$20 each)	200
8. Pruning shears (20 at \$10 each)	200
9. Heavy duty tree trimmers & Replacement blades (2 at \$100 each)	200
10. Tractor (35 hp) plus attachments	15,000
11. Green-house 50 m ²	13,000
12. Pick-up trucks (2 at \$10,000 each)	20,000
13. Fencing for entire area	15,000
14. Irrigation equipment	4,000
15. Safety cabinets (2 at \$1,000 each)	2,000
16. Dispatching unit	5,500
17. Pots, hoes & spades	6,000
18. Miscellaneous equipment	2,000
Total Nursery costs	\$210,950

In addition to above five marketing centers will be constructed utilizing MAG construction standards described above. The cost estimate for these marketing centers are the following:

A. Construction costs	
5 office space (50 m ² /u a 135 m ²)	33,750
5 marketing center (160 m ² /u a 130 m ²)	104,000
Subtotal	\$137,750
B. Equipment	
1. ten sorting tables (\$250/each)	2,500
2. five platform trucks (\$250/each)	1,250
3. packing equipment	500
4. five roller conveyors (\$1,000/each)	5,000
5. five scales (\$750/each)	3,750
6. office equipment	2,300
Subtotal	\$ 15,300

* GOE contributions

C. Community contribution and sites	\$172,000
Total costs of marketing centers	325,050
GOE contribution	260,000
AID contribution	276,000
Total costs of Marketing Center and Fruit tree nursery	\$536,000

5. Irrigation

a. Work in the Quimiag area would consist of water catchment at Rio Blanco about 3,405 meters above sea level, construction of about 16.7 Km. of main canals (open-channel), and 2.3 Km. of tunnel structures. The Penipe area would benefit from the completion of a principal canal of 6.5 Km. and two secondary canals, one of 4 Kms. and the other of 6 Kms. Water intake would be about 2,800 meters above sea level. The canals and the principal irrigation sites are identified on the map on the following page. Service roads would also be constructed.

Also included is a map of the Salcedo Project area with the sites for AID-financed irrigation activities identified. The technical description for the Salcedo irrigation activities is provided in a separate, unattached Annex.

The irrigation facilities have been designed using standard INERHI criteria for civil works, based on 1:2,500 scale maps with 1 meter contour intervals. The minimum river flows satisfy the irrigation water requirement of the areas even with water losses estimated between 5-20%. Water requirements details and river flow estimates have been reviewed and are in INERHI and USAID files together with plans and drawings.

b. In addition to the irrigation activities proposed in Quimiag-Penipe, the Project will finance a series of irrigation interventions in the Salcedo area. Designed to improve the small farmers' water resource base, these activities will include providing partial financing to INERHI to design and construct the water distribution system of an on-going GOE project in the east-central part of Salcedo - "Davalos - Chiriboga." the objective of this activity will be to provide irrigation water to an area of 495 hectares at an estimated cost of \$565 per hectare for a total cost of \$280,000. This cost estimate is based on standard INERHI design criteria for these works adjusted to reflect topographical conditions in Salcedo.

The project will also provide partial financing of studies for the Nagsiche irrigation project now estimated at about \$15,000,000. Previous INERHI experience on conducting similar feasibility studies account for 1% of total estimated project costs. For the purpose of arriving at firm cost estimate, therefore, the 1% indicator was used to arrive at the \$150,000 figure.

As indicated in the following table, the irrigation activities will include a series of low-cost systems such as lining canals, improving diversion structures, and groundwater development. Training of INEHRI technicians in low-cost irrigation systems will also be a major activity of the Project.

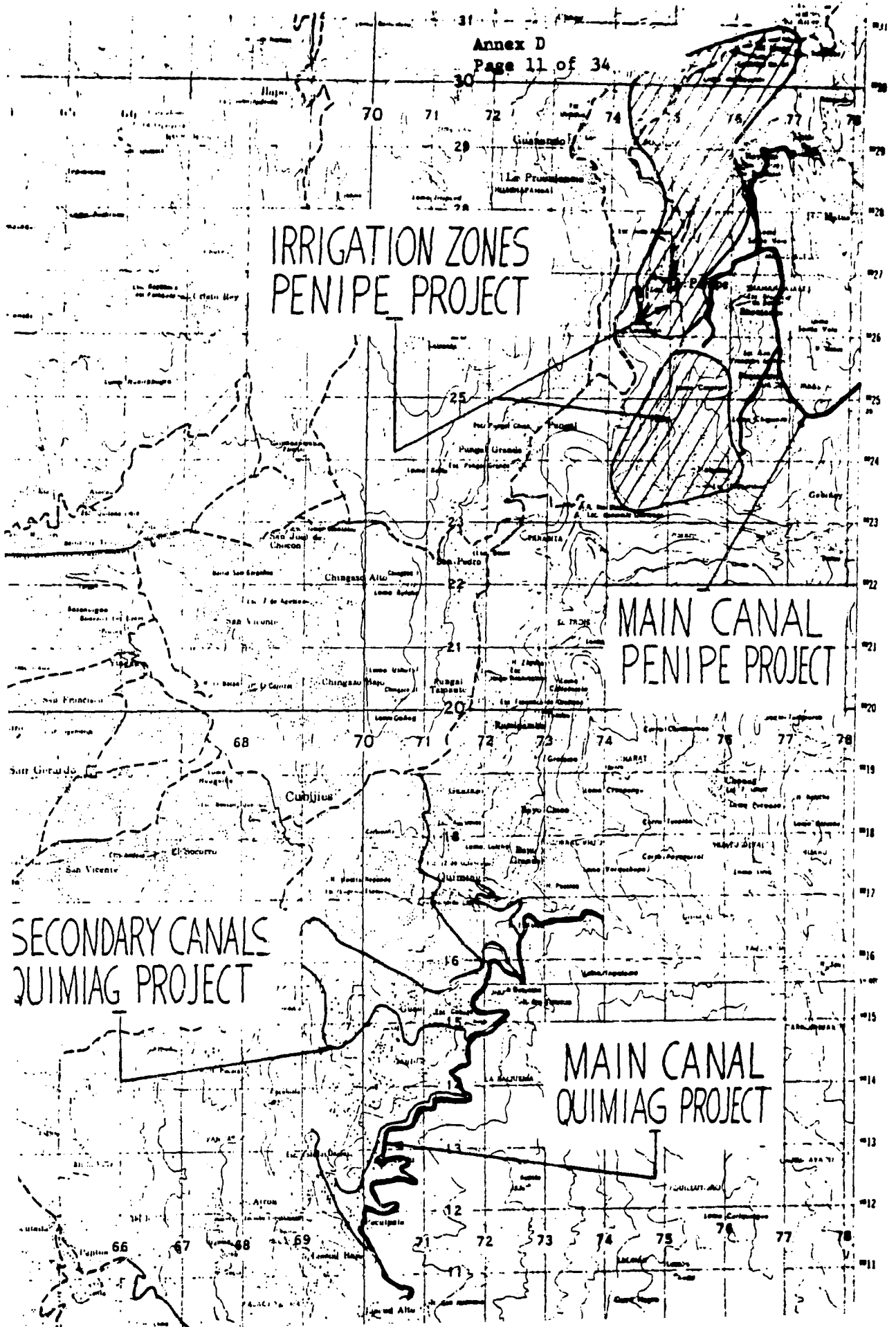
The groundwater development cost estimates are based on previous INEHRI experience in Salcedo and generally in the Cotopaxi province. Total system costs are estimated at \$72,000 each; it will be capable of pumping 60 l/sec of water and serve the needs of about 128 hectares. Up to 20 systems will be financed under the Project for a total estimated cost of \$1.44 million. Improving conveyances by lining canals have been estimated at \$15 per linear meter and the diversion structures at \$60,000 for about 16 kilometers of canals. A detailed budget for these activities follows:

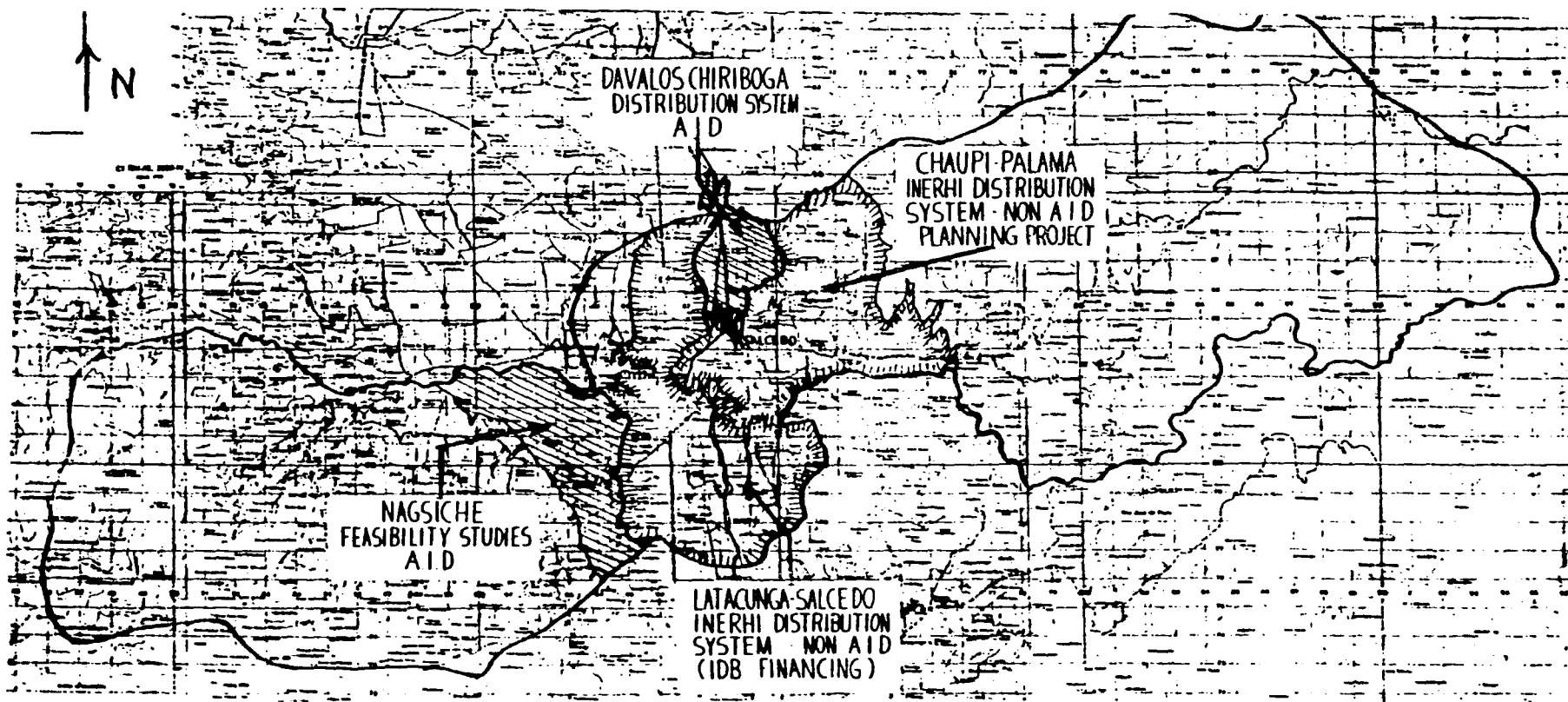
Salcedo Irrigation Cost Estimates

	Total	AID	GOE
A. Distribution System			
Davalos-Chiriboga			
425 Hectares @ \$565/Hectare ^{1/}	280	168	112
B. Nagsiche Feasibility Study ^{2/}	150	90	60
C. Low-Cost Irrigation			
Improvements			
1. Groundwater Development			
(20 systems @ \$72,000)			
per system with capacity			
of 60 Lts/Sec per system)	1,440	670	770
2. Lining of Canlas			
(16 Kilometers			
@\$15,000/meter	240	144	96
3. Improving Diversion			
Structures on 16			
kilometers of canals	60	36	24
4. Training of INEHRI			
Technicians in low-cost			
methods			
- long-term	240	160	80
- short-term	65.2	40	25.2
	2,045.2	1,050.0	995.2

1/ Cost estimates based on INEHRI calculations for project area.

2/ Estimated at 1% of expected project costs.





Typical sections were adopted for the distribution systems using rates of discharge from 100 liters per second and 1 cubic meter per second. Design criteria used for the canals were:

Lateral slope	1.5:1
Relationship bedding course to depth	0.1:1 (approx.)
Thickness of soil cement revetment	10 cm.
Manning roughness coefficient (n)	0.016
Minimum velocity	0.40 m/sec.
Maximum velocity (full capacity)	1.0 m/sec.

Lateral slopes for silt-sand soils are 1.5:1 for soil cement revetment, thus reducing water losses. Excavation and embankment for canals are nearly balanced. The sizes of the canals are as follows:

Discharge m ³ /sec.	Velocity m/sec.	b (m)	d (m)	s (m)	slope m/Km
0.10	0.48	0.25	0.30	0.20	0.70
0.20	0.54	0.30	0.40	0.20	0.60
0.20	0.52	0.40	0.50	0.25	0.43
0.50	0.56	0.60	0.60	0.25	0.35
0.71	0.53	0.30	0.70	0.25	0.30
1.00	0.56	1.00	0.30	0.25	0.27

The secondary canals would deliver water to cooperatively organized "modules" within which the farmers organized in water users association and assisted by INERHI engineers would build the internal distribution systems. On-farm works within the "modules" would consist of irrigation ditches, small distribution structures and pipes where required because of steep slopes.

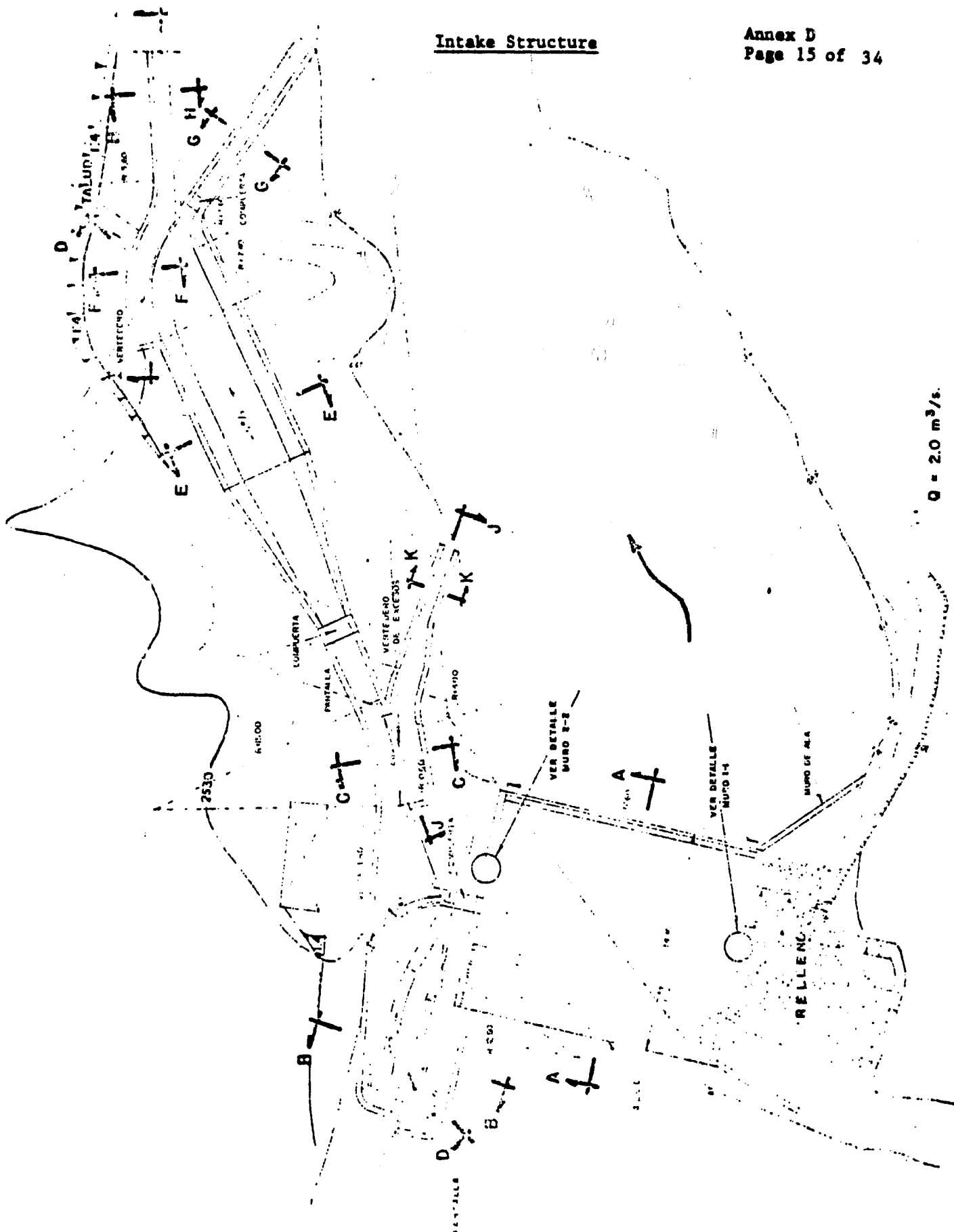
INERHI would be responsible for the design and construction of the major irrigation works. Final revised plans would be approved by AID. INERHI's cost estimates for the Quimiag-Penipe irrigation activities are shown below. The cost estimates for the Salcedo irrigation activities are in an unattached annex distributed separately. In addition, selected excerpts from INERHI's planning documents showing typical structures are attached.

Summary Cost Estimate

<u>Item</u>	<u>s/Million</u>
<u>Quimiag Project</u>	
Intake	3.30
Distribution canal	6.80
Tunnel	32.40
Main canal	13.10
Distribution System	22.00
Culverts	4.00
Side ditches	4.00
Administration	10.00
Physical contingencies	<u>6.60</u>
Subtotal	102.20
<u>Penipe Project</u>	
Tunnel	2.49
Irrigation system	5.69
Administration	1.00
Contingencies	<u>0.73</u>
Subtotal	9.91
Total	S/. 112.11
U.S.\$	4.484

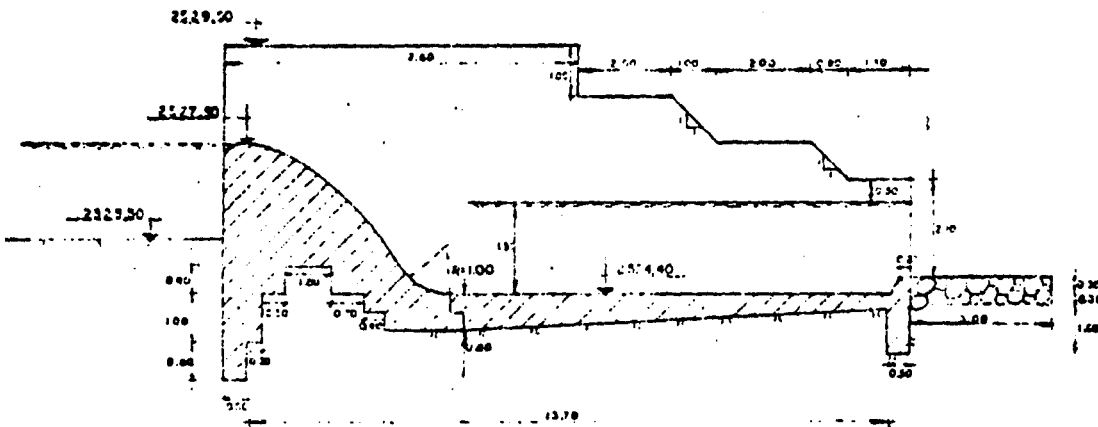
Intake Structure

Annex D
Page 15 of 34

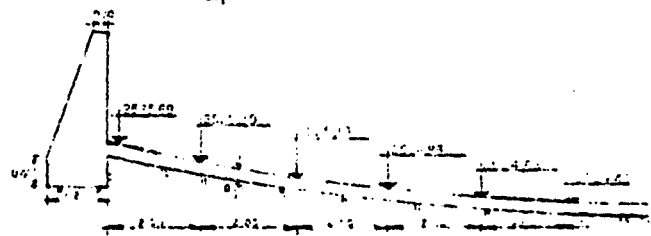
 $Q = 2.0 \text{ m}^3/\text{s}.$

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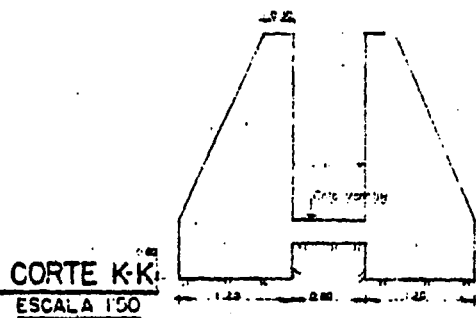
Intake Structure Cross Sections



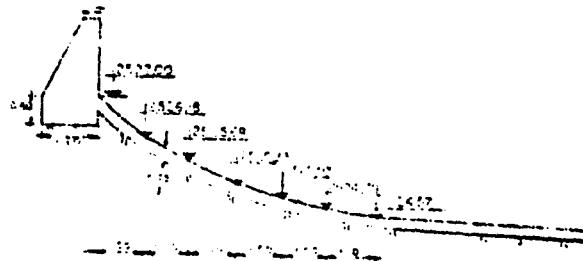
CORTE A-A
ESCALA 1:100



CORTE I-I
ESCALA 1/100



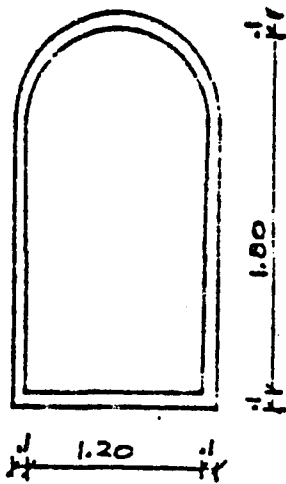
CORTE K-K
ESCALA 1:50



CORTE J-J
ESCALA 1:100

Tunnel Structure

POR FACILIDAD DE TRABAJO SE TOMA LA SIGUIENTE SECCION
PARA LOS RIOS PICHE Y TARAN



$$\text{TOTAL} = 2.57 \text{ m}^2$$

$$\text{Por metro} = 1.88 + 2.4 + 1.2 = 5.48$$

$$V = 2.57 \text{ m}^3$$

$$C/\text{Vol.} = 2.57 \times 450 = 1,156.50$$

$$A = 5.48 \times 1 = 5.48 \text{ m}^2$$

$$V = 5.48 \times 0.10 = 0.55 \text{ m}^3$$

$$C/\text{vol.} = 0.55 \times 915 = 503.3$$

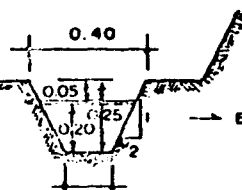
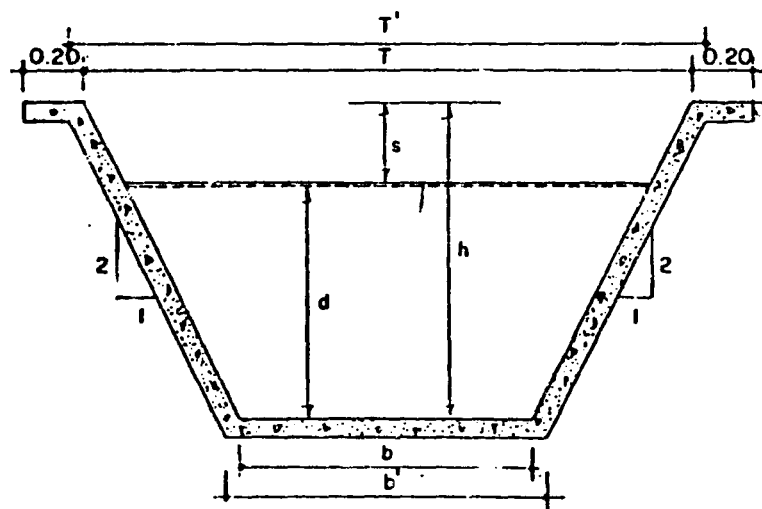
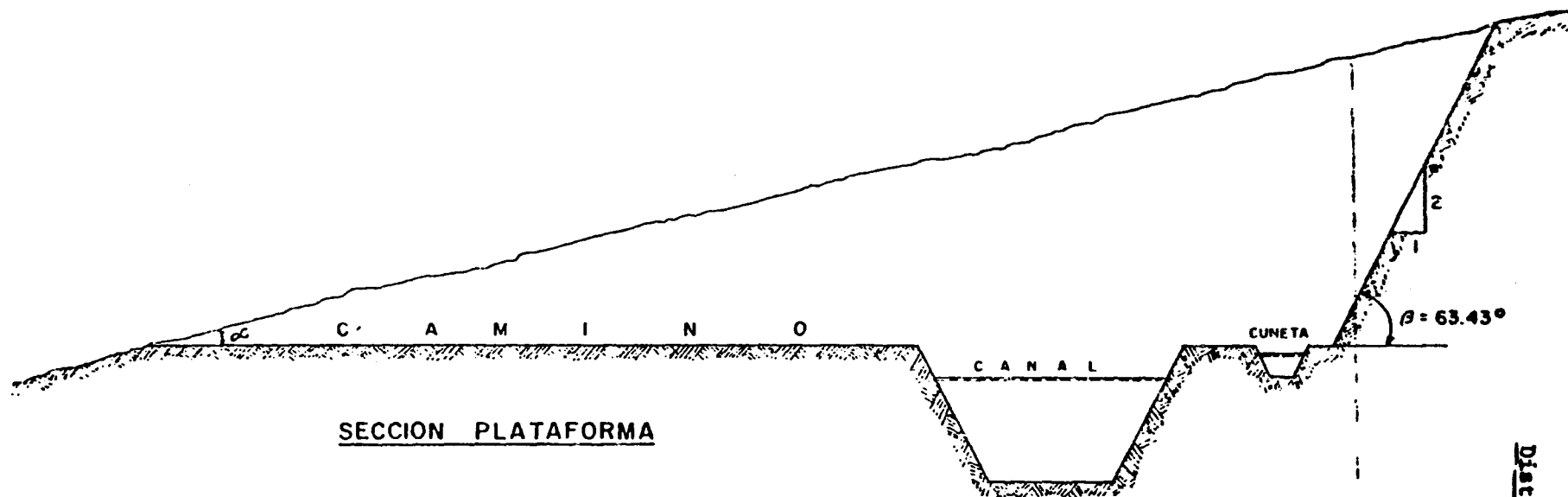
$$\text{Costo Total/ml.} = 1,659.80$$

Costo/ml. de canal

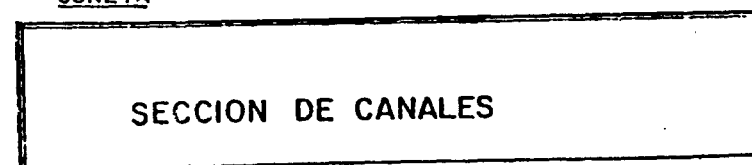
Excavación

Recubrimiento

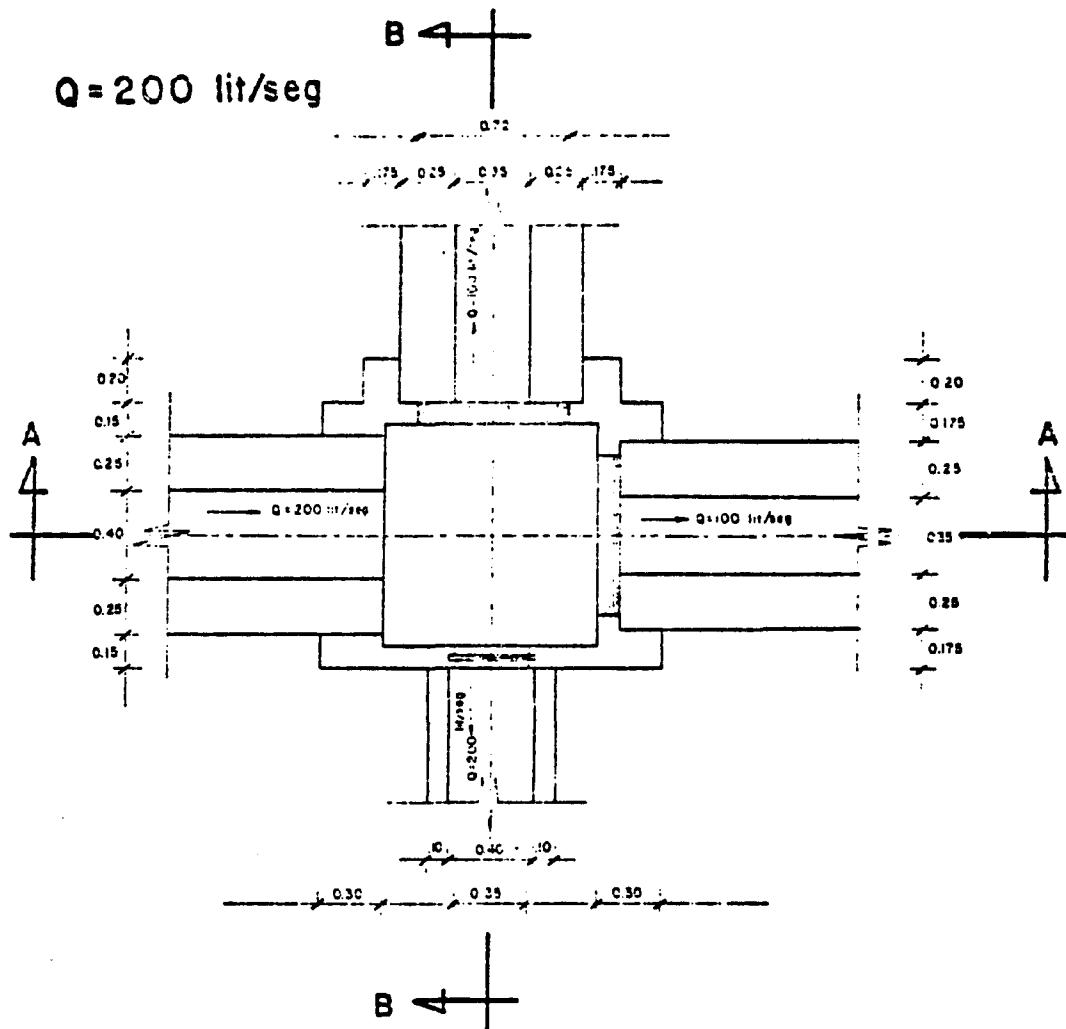
210 Kg. 1: 3: 6



EVACUA UN CAUDAL DE 20.00 L/s

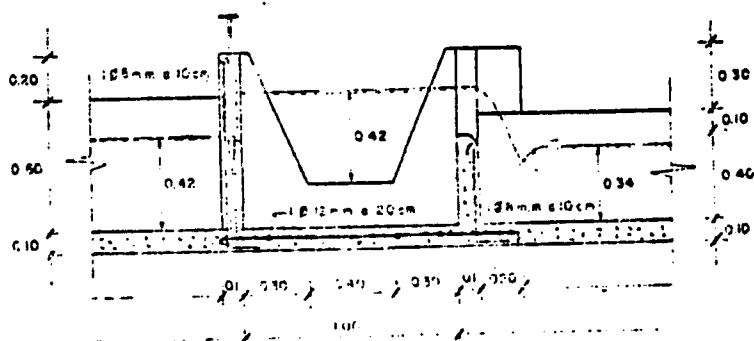


On-farm distribution system
Distributor

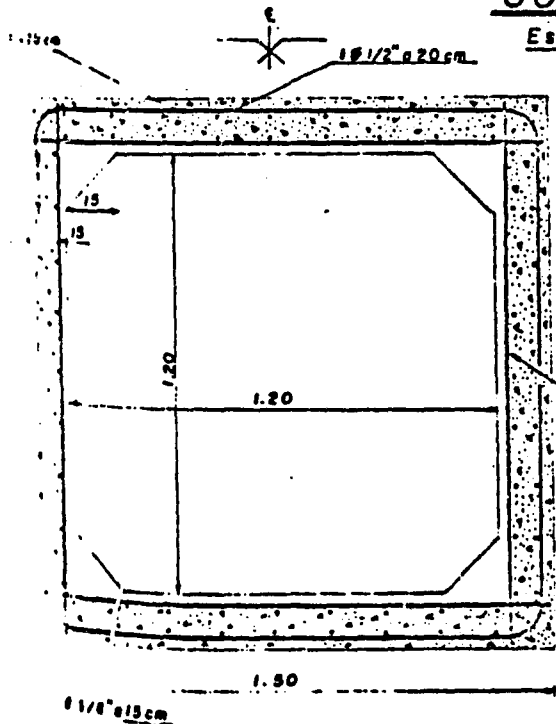
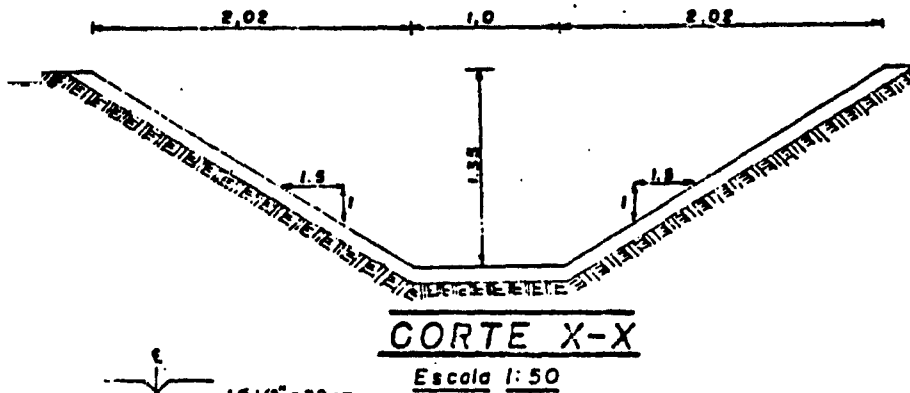
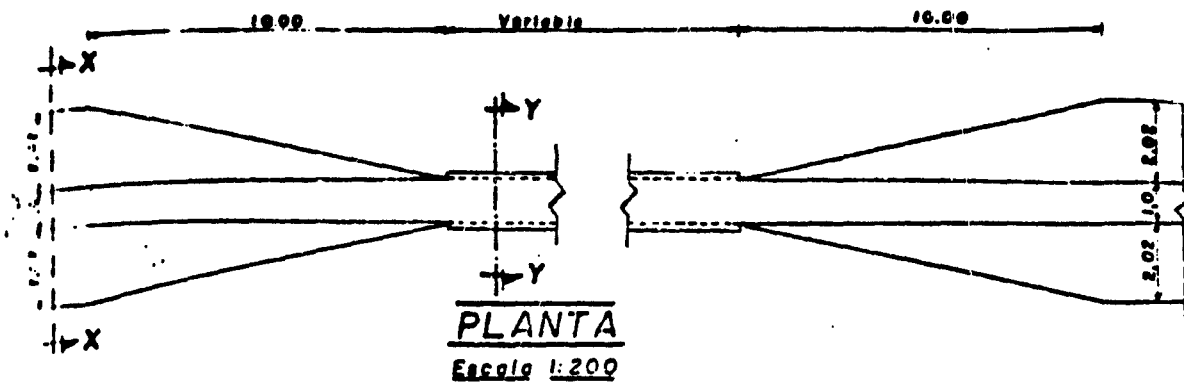


PLANTA

ESCALA: 1:20



ESCALA: 1:20



ESCALAS GRAFICAS

Esc. 1:200 1m 2m

Esc. 1:50 0.5 1m 1.5

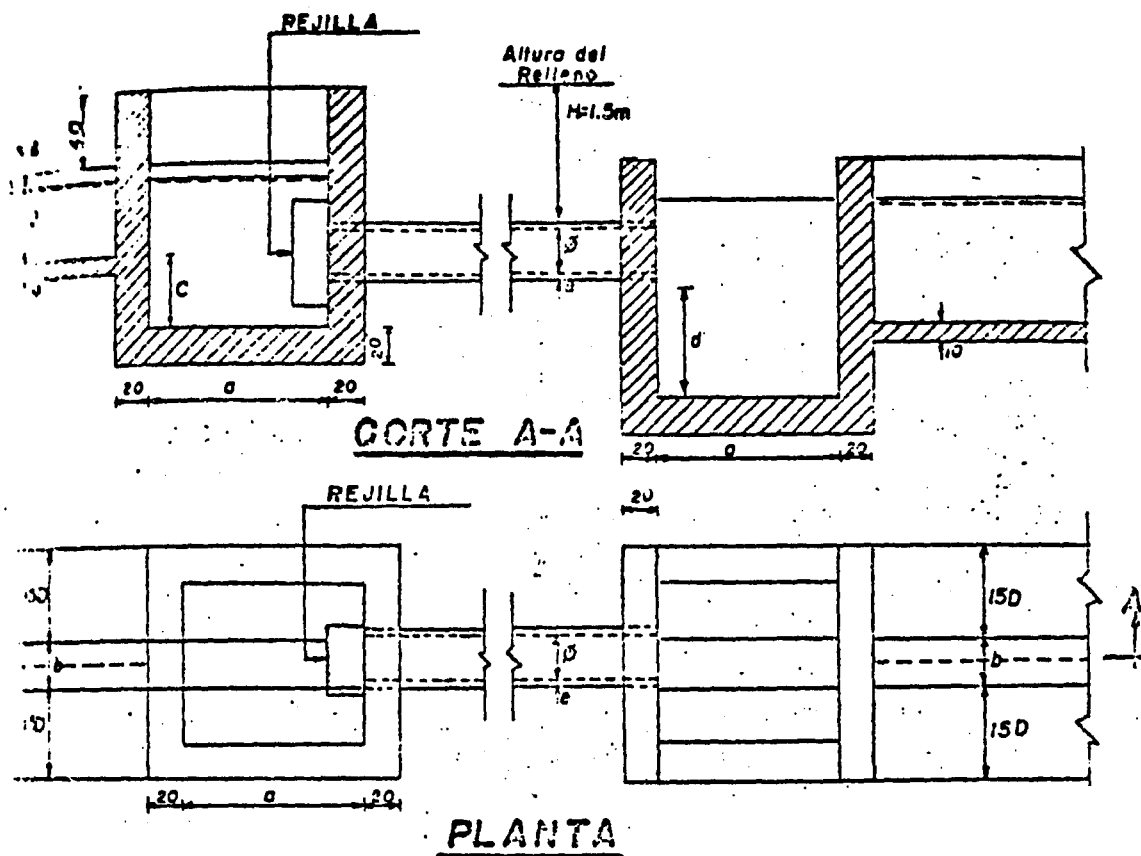
Esc. 1:20 0.5 1m

**INSTITUTO ECUATORIANO
DE RECURSOS HIDRAULICOS**

PROYECTO LATACUNGA-AMBATO

**ALCANTARILLA PARA
PASO DE CARRETERA**

Railroad and highway crossing



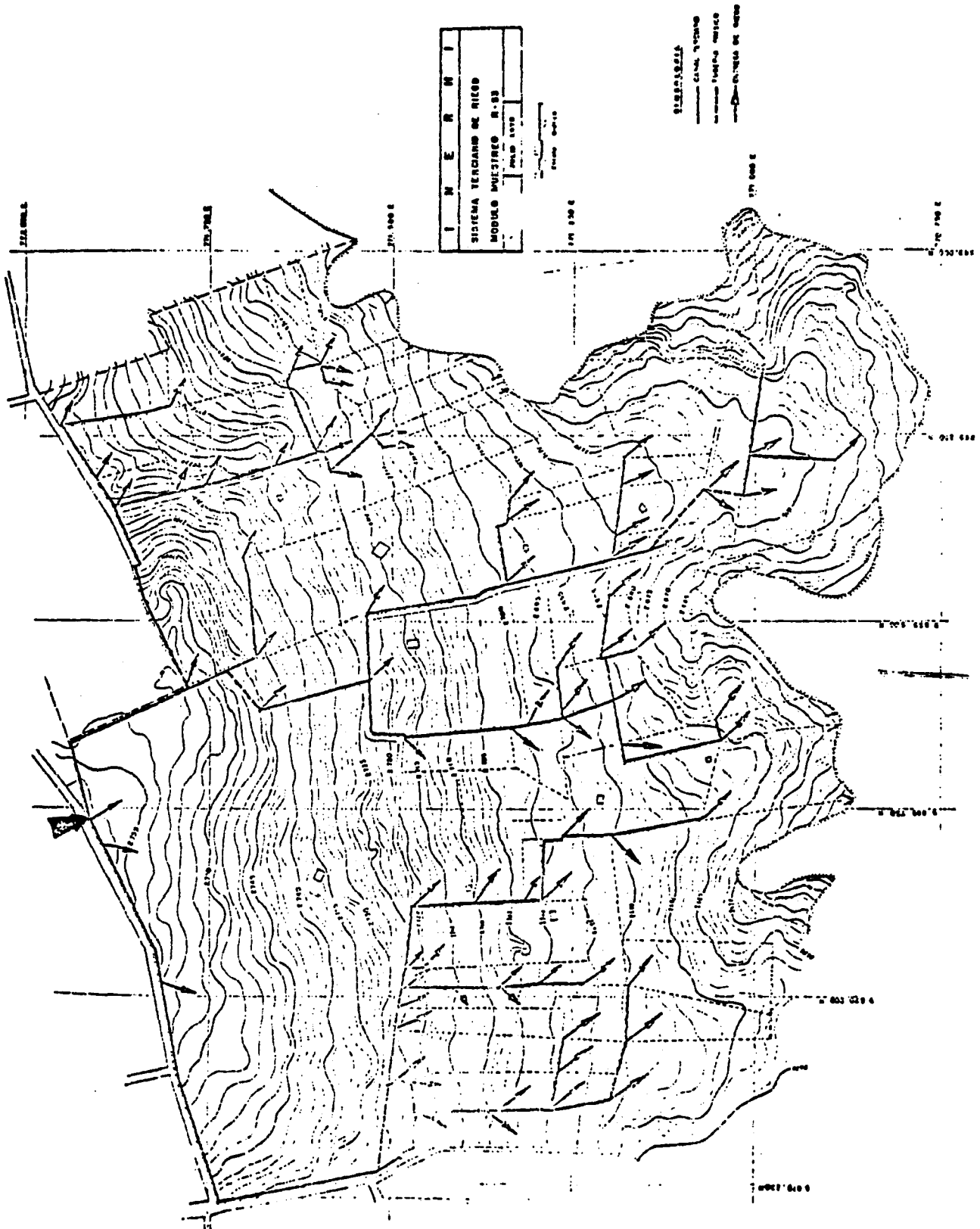
Q m^3/seg	b m	D m	a m	C m	d m	ϕ_{int} m	e cm
0.100	0.25	0.50	1.00	0.40	0.60	0.25	4
0.250	0.40	0.60	1.20	0.60	0.80	0.35	5
0.500	0.60	0.80	1.50	0.80	1.00	0.55	7.5

INSTITUTO ECUATORIANO
DE RECURSOS HIDRAULICOS

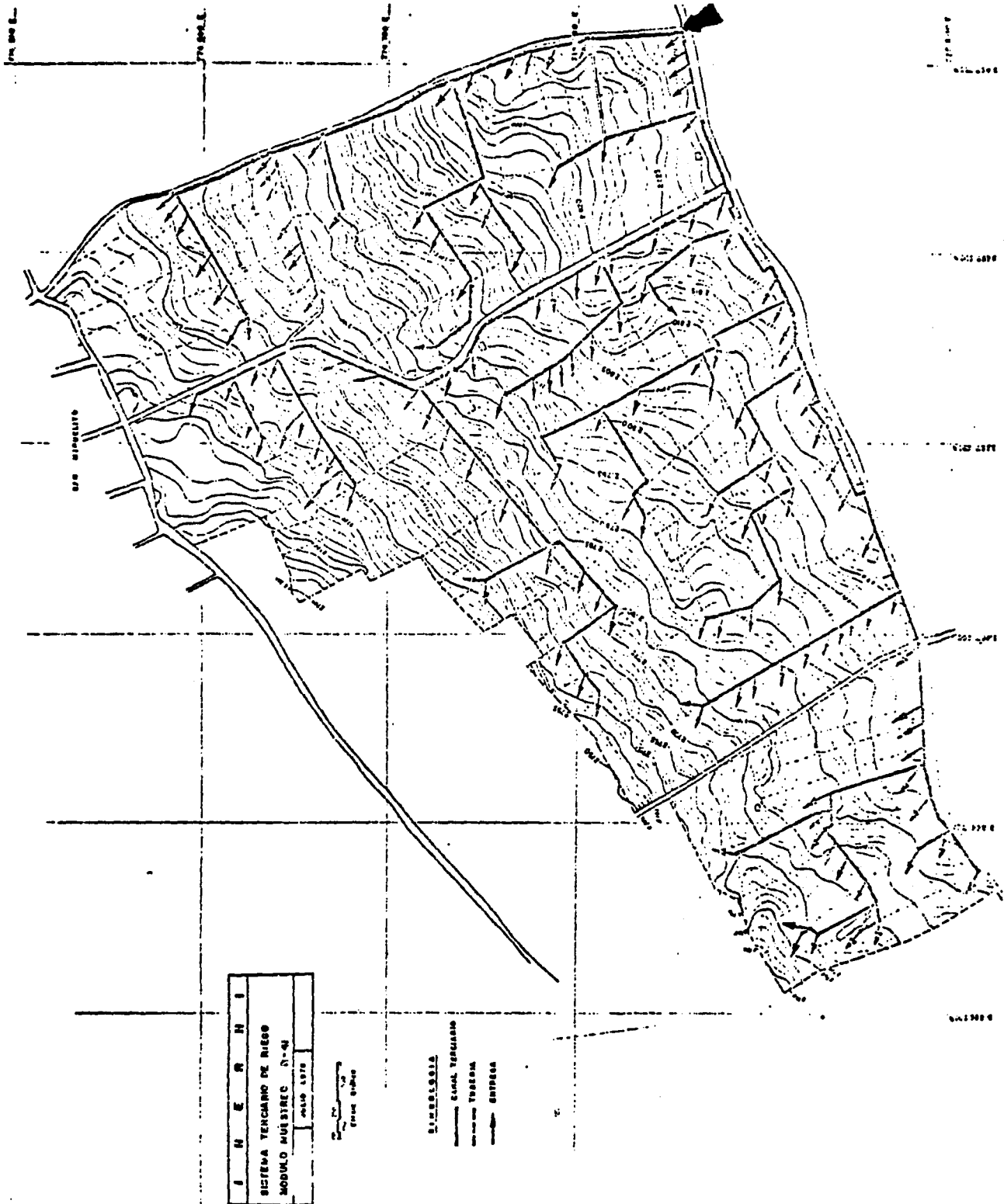
PROYECTO LATACUNGA-AMATO

PASOS DE CARRETERA
Y FERROCARRILES

On-farm distribution systems -
Tertiary Canals



On-farm distribution system -
Tertiary Canals



5. Project Description of the National Rural Training System

(Draft translation from Spanish)

I. Present Problems of Rural Training

The problems that are presently affecting rural training and that have become serious constraints to the overall rural development effort are summarized as follows:

1. General Policy Aspects

In general, rural training programs have been planned and implemented outside the national development plans. This has been evidenced by the lack of adequate and specialized rural education planning efforts, and by the lack of democratization of the educational system. On the other hand, there has been a serious lack of a national integrated rural development policy where training is included as a fundamental component.

These deficiencies have led to a highly unstructured situation where rural training activities have sometimes been viewed as peripheral. At other times, because of the lack of linkage to an overall strategy these activities have not gone beyond the purely educational aspects and have not permitted that such educational aspects be part of an overall strategy aimed at the achievement of continuous change and mobility.

2. Institutional Aspects

The problems noted above create an institutional challenge. At present, there is a total atomization of training activities. Many entities carry out training programs, but with little or no coordination among them. Consequently each institution has implemented its own version and concept of training, thus creating contradictions among institutions and a great loss of resources and efficiency.

3. Contents

The Rural Training Programs that are presently being implemented are generally characterized by their rigidity and by the fact that they are imposed from above by a centralized representative. These programs leave little margin for their adaptation to the needs and characteristics of each situation. Generally, such Programs are based on descriptive and academic educational content aimed at transmitting values as fixed schemes. In sum, the absence of prior research efforts prevents the educational content from providing concrete answers to specific problems. The tasks and occupational roles of the farmers are unknown, so there is no real basis for planning the

training process. There is also no knowledge of the real and potential labor market of any given area.

4. Methodology

The methodology employed seeks to establish a vertical relationship between the teacher and the student. This process allows for little or no participation or creativity by the student in the educational process.

In traditional teaching, there is no systematic use of the scientific research method. The individual social and cultural differences are not always addressed, and no techniques are introduced for generating a participatory process in the development of knowledge.

5. Didactic Materials and Means

There is little or no development of educational technology that is appropriate to the local situation. At the same time, communications media are either poorly employed or not employed at all. Local human and material resources are also inadequately utilized, and complementary materials are often completely lacking. The tendency is to utilize stereotyped communications media that are alien to the local culture, instead of using more traditional means relying on local folkways.

6. Culture

There is no clear policy that respects the characteristics and development of cultures. In general, there is a tendency to impose the urban culture on rural areas. Urban officials often choose to ignore or disdain the values of a multi-ethnic society; they also refuse to learn native languages so as to better understand such values.

7. Participation

In general, there is an absence of adequate actions aimed at encouraging popular participation in the development of knowledge and in the decision-making process. This problem is further aggravated with women -all of whom are practically outside the educational process. The trend is to benefit male groups preferably or exclusively. This practice only reinforces women's marginal position in society. Such a situation should be overcome as part of the general national development process.

8. Beneficiaries

In the few rural training programs being carried out efforts are concentrated in "leadership training." These programs have led to the consolidation of a vertical power structure, where economically "better-off" campesinos become an "elite" inside the campesino organization through their increased knowledge. Evidently, this implies that the great majority of the

people is left largely outside the education process; it also implies the subordination of rural organizations to a select "educated" group and to the private interests of such a group. The trained leaders, however, do not necessarily represent the interests of the majority. Thus, it becomes difficult to establish dialogues and consensus between popular organization and governmental institutions. Furthermore, the problem described above prevents the establishment of a true democratic process based on the participation of the majority of individuals within a community.

9. Professional and Technical Training of Instructors

Lack of competent trainers is one problem facing rural training programs. In this respect, there is a complete lack of coordination and linkage between intermediate and higher professional training and the specific needs of the rural areas, especially those of campesino groups.

The term "competent trainers" interest not only professional training and specific technical abilities. It also refers to trainers' in-depth knowledge of the rural situation and popular culture, and to a commitment to change existing relationships. The trainers should follow a post-graduate training process where, in addition to basic methodology, they would be equipped with the tools to analyze the rural situation and to define their own role in the development process.

A parallel problem in rural training is the lack of linkages between professional and technical training centers and institutions involved in the rural sector. Consequently, each organization, by error or design, competes in hiring professionals to carry out isolated and uncoordinated technical training programs.

II. General Aspects of the Project

This project represents the training component contemplated in Government of Ecuador plans to implement its Integrated Rural Development programs. The goal is to support the National Rural Training System, within the National Subsystem for Integrated Rural Development (IRD). The rationalization and institutionalization of the IRD is the fundamental concern of the present government.

The project is aimed at the individual and collective development of human resources in rural communities, especially in those that are more economically depressed. Such a process will encourage the rural poor's participation in their own development and in the development of the nation as a whole.

The project seeks to establish cooperative mechanisms, at the national and local levels, among public and private institutions that provide technical assistance and training services for rural development. Such linkages will avoid duplication of functions or excessive concentration of services, and will define participatory principles and improved technologies necessary to achieve rural development objectives.

III. Project Objectives

Despite the problems outlined in Section I, which presently prevent adequate implementation of rural training activities, the Government considers training as a basic element in the integrated rural development process. Consequently, the Project intends to accomplish the following general objectives:

- a) To support the implementation and institutionalization of a National Rural Training System (SNCR). The purpose of the SNCR is to rationalize and optimize the use of resources available to different government and private institutions involved in rural training. Accordingly, this Project will develop and implement pilot rural training activities in order to build the institutional capability of the National Executing Agency.
- b) To strengthen the mechanisms for collaboration among institutions that are involved in research education and extension in the rural sector, in order to improve the administration and delivery of services in accordance with the communities' expressed needs.
- c) To ensure that the rural training activities to be undertaken, both within the Integrated Rural Development Projects as well as in the Sectorial Projects, respond to the principle of popular participation that the Government has proposed.
- d) To expedite and facilitate the delivery of technical assistance services to the communities, by the different agencies involved in the Integrated and Sectorial Rural Development Projects.

IV. Training Areas

The training areas will be determined as part of a participatory process in which the communities will express their felt needs. The agencies in turn will seek to fulfill such needs through the provision of improved services. The needs defined by the communities could cover a wide range of subjects. However, it is anticipated that the SNCR will provide training in the following areas:

- Social/Organizational Training

To promote and encourage dialogue and creativity within the communities. The idea would be to allow rural groups to visualize their own development perspectives and to reach an organizational level that will allow them to successfully relate with the economic, social and political system.

- Agricultural and Livestock Training

The objective of this type of training is to allow for a process of technology transfer that is adequate to the structural conditions of campesino economies. Such a process should respect and enhance campesino cultural

values, which in turn will strengthen the development of the organizational basis in the rural sector.

- Managerial Training

In order for him to fully realize his role as a focal point of rural development, the campesino should be trained in an organized fashion to understand and handle the managerial aspects of the agricultural production processes. Such aspects include the input-production function, forms of credit and commercialization, production storage systems; the market as a mechanism of price determination, and production costs and sales.

- Basic Training

The project should be capable of covering the training needs expressed by the communities, which generally have to do with "survival" skills such as writing, reading, mathematics, legal aspects and others.

V. Beneficiaries

This Project will basically be limited to projects in Integrated Rural Development areas. It could also contemplate a broader coverage, provided that any given project falls mainly within an IRD project area.

The basic purpose of such projects are to serve to the poorest marginal population, so that they may have access to the benefits of the development processes generated in the regions.

VI. Process and Methodology

a) Process

- Inventory of resources oriented to rural development (human, physical, financial, methodological resources, coverage and location of programs, etc.)

- Reinforcement of existing programs through technical cooperation for the public sector as well as for the private sector.

- Assistance to programs that are specifically requested by the target population.

These needs shall be gathered and compiled by multidisciplinary groups of technicians working in the field. Such technicians will be previously trained in the concepts of nonformal education, extension, etc. They will belong to different government institutions that are committed to regional development and will remain working throughout the life of the program. In each group of technicians there will be a person representing the National Implementing Agency. The groups of technicians will also be in

charge of coordinating the training activities with the other actions that will be carried out by the different organizations that will be in charge of implementing individual components of the integrated rural development projects.

The technical field groups will be supported by the Central Implementing Agency in the provision of overall guidance and working materials. The Agency will also provide technical assistance to other groups or institutions (public or private) who are involved in rural education.

b) Methodology

The project methodology will be derived from the investigation-action principle. It will promote the broadest participation of project beneficiaries in each of its phases. It will promote the autonomy of community decisions, in all aspects, and especially in their relation with institutions and individuals that may provide them with technical assistance. The project field groups will promote the development of leaders in each community. Such leaders will have under their responsibility the implementation of actions inside the communities, as well as the coordination of the supply of services from the outside. This will require that the agencies participating in the projects adjust their programs to the specific demands of the target population. This task will be facilitated by the Implementing Agency, at the central as well as at the local levels. The implementation of the above methodology will be supported by the Inventory of Rural Development Resources.

VII. Distribution of Grant Funds

1. AID Budget (\$000)

a) Distribution Table:

<u>Property</u>	<u>80</u>	<u>81</u>	<u>82</u>	<u>83</u>	<u>84</u>	<u>Total</u>
Vehicles	30	20	0	0	0	50
Equipment	40	50	25	20	15	150
Supplies	30	40	40	50	40	200
	<u>100</u>	<u>110</u>	<u>65</u>	<u>70</u>	<u>55</u>	<u>400</u>
<u>Personnel</u>						
Technical Assistance (short and long term)	80	110	160	80	70	500
Local consultants and personnel	<u>140</u>	<u>120</u>	<u>125</u>	<u>80</u>	<u>35</u>	<u>500</u>
	<u>220</u>	<u>230</u>	<u>285</u>	<u>160</u>	<u>105</u>	<u>1000</u>
<u>Rural Training Fund</u>	50	75	120	140	115	500
<u>Radio Time</u>	10	15	20	35	20	100
<u>Training</u>						
Outside of the country	20	50	60	20	0	150
In-country	<u>50</u>	<u>70</u>	<u>100</u>	<u>75</u>	<u>55</u>	<u>350</u>
<u>Total</u>	<u>450</u>	<u>550</u>	<u>650</u>	<u>550</u>	<u>350</u>	<u>2500</u>

b) Item Break-Down:

- Vehicles: 4 for DRI projects and 1 for the Central Agency in Quito

80	81
3 vehicles	2 vehicles
- Equipment: Instruments for training at field level (cassette recorders, cassettes, film projectors, videos, video-cassettes, cameras, speakers, generators, etc.
- Supplies: Stationery, communications, vehicle maintenance, and other materials for the project.
- Technical Assistance: A long term consultant for two years, and short term technical assistance, as needed.
- Consultants and Local Personnel: The personnel of the Implementing Agency at the central and regional levels and short-term technical assistance from Ecuadorean entities, as needed.
- Fund for Rural Training: Two purposes:
 1. To support the expansion and adaptation of programs oriented to attend emerging needs, and,
 2. for loans to campesinos in economically productive investments, if no other sources of financing are available.

Possible Distribution:

\$100,000 = Loans to campesinos

\$300,000 = Expansion and adaptation of programs for public entities and for personnel training.

- **Radio Time:** For the purchase of radio time for training programs that use massive media techniques.
- **Training:** Short-term training for personnel of the Implementing Agency and training for personnel of other organizations that collaborate with the Project, and for the members of beneficiary communities. Emphasis will be given in learning based on direct experience, in country and abroad.

2. Government of Ecuador Budget (\$000)

<u>Item</u>	<u>Total</u>
Personnel	500
Equipment, offices, infrastructure	250
Training supplies and materials	100
Per diem, transportation	75
Total	925

VIII. Institutional Structure

In order to guarantee the efficiency of the operation of the Project, an institutional structure having the following fundamental characteristics is required:

1. Sufficient independence and autonomy in the administration and decision-making of the SNCR;
2. Limited and efficient staff; and
3. Capability to mobilize resources already existing in the various public and private institutions and to channel them in accordance with the requirements of Integrated Rural Development Projects.

An institutional structure with these characteristics would be protected against undesired and unnecessary growth, would have sufficient authority to implement the project. It would also maximize the use of existing resources and would achieve a reasonable level of interinstitutional coordination and collaboration. In keeping with the above criteria, the Project proposes the creation of the following institutional structure for its administration and implementation.

- A Management Unit, including the Chief of this Project, who will be in charge of its overall administration and implementation. He/she will report to the Executive Director of the Implementing Institution responsible for the execution of the Project; and an Advisory Council, composed of representatives from all Public Institutions that have rural training units, plus two representatives elected by private institutions, who are involved in rural training. This Council will be in charge of making policies for the project, approving work plans, controlling the administration and evaluation of the actions taken by the Project, and in general will fulfill an advisory role.

- A Central Operational Unit, composed of Research, Implementation and Administrative/Financial offices. It will be in charge of project operations in the areas of its jurisdiction.

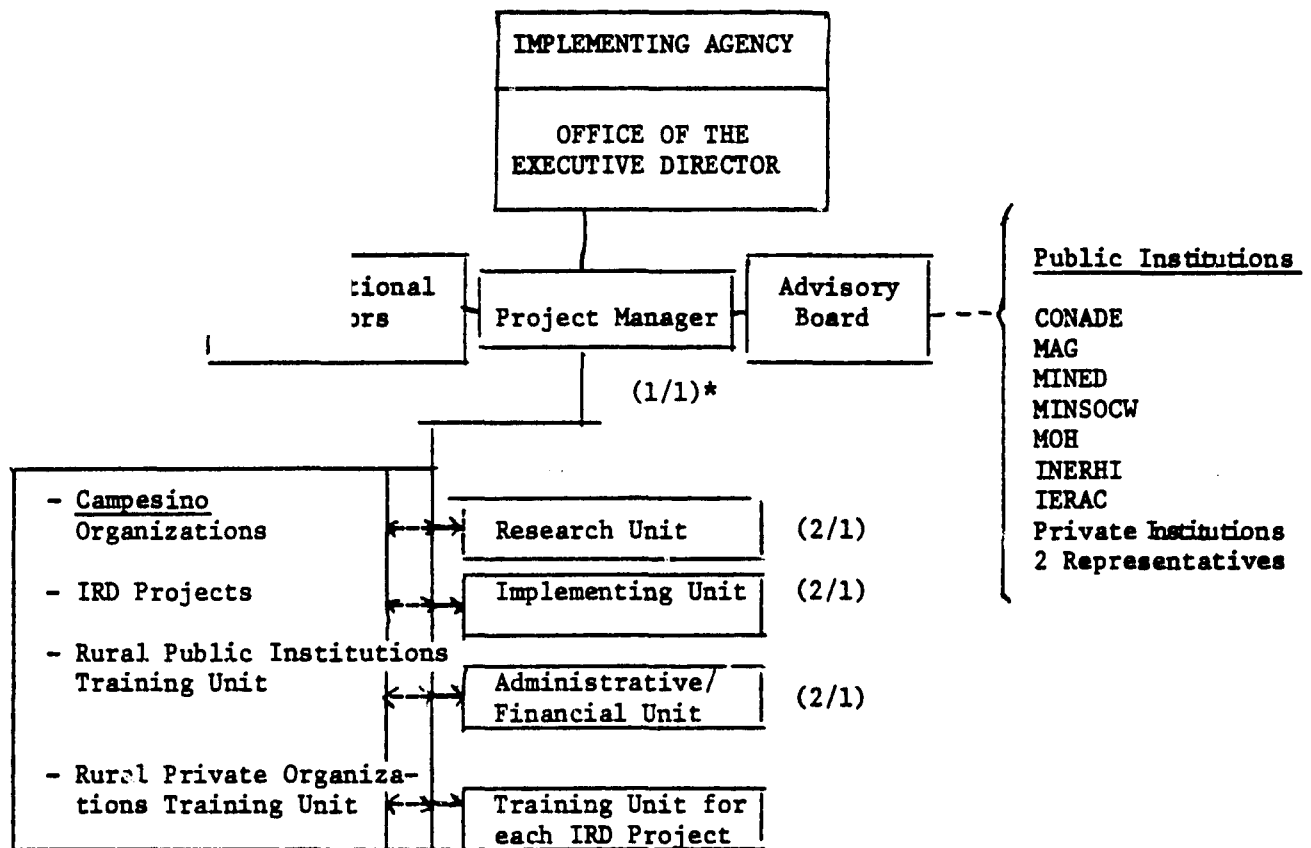
- A Field Operations Unit in each IRD project area formed by a group of technicians from the various institutions that have action responsibilities in the project and where training is involved. The coordination of such technicians will be the responsibility of the Chief of the IRD project. Each IRD Project will have in its staff professionals appointed by the SNCR. They will be in charge of the execution of the Project at the local level.

- Long-term Foreign Technical assistance, which will provide the criteria and methodological elements for smooth execution and administration of the Project. It will act in close collaboration with the Advisory Council and with the Chief of the Project, and it will also assist the local groups in the development of training activities.

There will be a supporting structure that is external to the SNCR. It will be composed of resources of the training units of the various public and private entities involved in integrated rural development, as well as by the target communities themselves.

The following organizational chart shows the structure of the proposed system:

NATIONAL RURAL TRAINING SYSTEM



* The figures in parenthesis represent the staff requirements of the central office of the SNCR. The figure to the left represents the technical personnel, and the figure to the right represents the support personnel.

Personnel to work directly under the Implementing Agency will be contracted in consultation with USAID/E.

In contracting field personnel at the local project level, prior consultation with USAID/E will only be required for those technicians that are directly within and under the SNCR; other field personnel working in IRD projects will be appointed by the public institutions that participate in such projects.

In order to complement the above description, it is necessary to briefly describe the functions of the Research, Implementation, and Administrative/Financial Offices, within the Central Operational Unit of the Implementing Agency:

- Implementation Office: To coordinate training activities, at the level of professionals responsible for training, as well as at the community level; and to provide materials for training.

- Research Office: To conduct applied research in the areas of methods, materials, systems for the delivery of services, etc.; to perform summary and formative evaluations; to provide internal information for the Project, by maintaining a Documentation Center on data generated, and to prepare publications on the activities of the SNCR.

- Administrative Financial Office: It will support the activities of the SNCR at the central and regional levels, by providing materials and services; it will administer the present operation funds as well as the funds for communities and other organizations eligible for assistance, in accordance with the guidelines established in the corresponding Agreement.

INSTITUTIONAL ANALYSES

The following agencies will participate in the Project:

1. Rural Development Secretariat (RDS):

The organization, functions, and role of the RDS in this Project have been analyzed in other actions of this PP. The RDS will be the counterpart agency for USAID and will administer funds provided by the Project. To implement the Project, RDS will sign implementing agreements with the participating agencies described and analyzed below.

2. Ministry of Agriculture and Livestock (MAG)

The key institution in agriculture is the Ministry of Agriculture and Livestock which has been merged with and then separated from other ministries since its funding in the early 1960's. Historically MAG has been one of the weakest and poorest staffed ministries in the GOE, and it has had constant problems coordinating the actions of its stronger autonomous agencies.

In past years, Ministry personnel have had serious morale problems due to lack of budget resources, insufficient travel and per diem funds, and unclear policy signals. While MAG has usually been dominated by an agricultural production and larger farmer orientation, policy-makers have also demanded more of a rural poverty focus. This "split-personality" has led to serious institutional and managerial problems and to uncertainties about just what is the task of MAG. The current GOE policy appears to be to continue MAG's traditional agricultural production orientation while creating newer organizational structures (e.g., RDS) with a rural poverty focus.

According to the 1973 decree which recreated MAG, the Ministry is responsible for formulating, directing, and implementing national policies of research, production, and marketing of agricultural products, agrarian reform and colonization, irrigation, rural development, and conservation of natural resources, for the purpose of increasing agricultural, livestock, and forestry production and productivity, of generating greater employment opportunities, and of furthering the policy of redistributing the income of the Ecuadorean population.

The 1977 Reorganization. The Ministry was reorganized in 1977. It is divided into ten General Directorates, five for administration and five for various aspects of its operations: agriculture, livestock, forestry, marketing, and campesino development. Regional operations fall under 10 zonal offices. In addition there are five national programs dealing with specific crops, an animal health program, and a regionalization program.

Administration. MAG is directed by the Ministry and a Sub-secretary, who are guided in their actions by the GOE cabinet. They are assisted by a Technical Council, which consists of the Subsecretary, the coordinator, and the MAG's Director Generals. The Council meets weekly to initiate policies, analyze programs, projects and budgets, and coordinate MAG actions. The role of the coordinator's office was broadened by the reorganization; it is now charged with coordinating not only the activities of the MAG and its international relations, but also the actions of the affiliated entities. The reorganization also strengthened the Planning Directorate, creating an Agricultural Planning Department to do long term planning for the Ministry for the first time, and a separate department to plan the agrarian reform.

Operations. MAG operations are the responsibility of the five national directorates, the 10 zonal offices, and the crop and livestock programs. The national directorates advise the Minister on policies, identify projects, and supervise, coordinate, and assist the zonal offices and the national crop and livestock programs.

The Ministry has five crop programs, for bananas, cacao, coffee, cotton and oilseeds, and rice and corn, which are coordinated by the Agricultural Directorate, and an animal health program under the Livestock Directorate. The programs provide extension services to producers of the commodity and also regulate marketing, including exports, of the product. Some also get involved in other areas, such as construction of roads or storage facilities or laboratory testing for quality control. The programs also assist the zonal office by providing experts to give technical assistance to producers of that crop.

These programs have considerable independence, their budgets are separate from MAG's, and they are located outside Quito (all in Guayaquil, except for the coffee program, located in Portoviejo). Some have their own income, in the form of earmarked taxes, which in the case of the coffee program represents 99 percent of its current income. Since they provide considerable assistance to large commercial ventures, they have the backing of powerful clients.

The role of the 10 zonal offices changed considerably as a result of the reorganization. The offices have more autonomy and agents work together more. Field operations in the zones are carried out by special service units, ASAs (Agencias de Servicios Agropecuarios) and PIDAs (Proyectos Integrales de Desarrollo Agrícola). The special service units are in charge of the programs of mechanization, improved seeds, animal and agricultural sanitation, fertilizers, animal nutrition and genetic improvement, forestry, marketing, and promoting cooperatives. Extension services are administered by ASAs and PIDAs. The ASAs are agencies operating in a sub-region within the zone giving technical assistance to production units in its area. The PIDAs are project units

in other subregions where the Ministry is implementing an agricultural development project. PIDAs will provide more comprehensive attention than ASAs might give, and might, for example, construct feeder roads or promote community development projects.

The ASAs and PIDAs are designed to assist the farm as a unit and to adapt programs more to local conditions and to the needs of smaller farms, technically. In the past, assistance was commodity oriented and nationally directed. One farm might receive yearly visits from a number of different experts each armed with a technological package for producing one commodity and each pursuing some national production goal for their crop. Coordination was poor and the system was ill-adapted to the needs of the small and medium Ecuadorean farmers who usually produce a variety of commodities. ASAs are oriented toward production units and bring together their own experts as well as agents from the national crop programs and the special service unit in the zone to provide integral assistance to small and medium farms. PIDAs bring together these same experts as well as employees of the affiliated decentralized institutions to implement multipurpose agricultural projects. Eventually these entities will cover the entire country; every area not in a PIDA will be served by an ASA.

There are 108 ASAs and 21 PIDAs, but most of these ASAs and PIDAs are just getting underway and still weak. In 1978, there were 716 professionals in the zones, of whom 150-200 were assigned to zonal administration or to the special service units (15 to 20 people per zone), leaving 500 to 550 in the ASAs and PIDAs. These agents assist over 25,000 production units. The staff of the ASAs are supplemented by agents detailed from the National Crop Programs, which have about 600 professionals.

Another reorganization of the MAG is currently under discussion and review by the GOE. At a point in 1978-79, one option being considered was placing the Rural Development Secretariat within MAG and organizing the entire Ministry into two major Directorates. One would focus mainly on agricultural production concerns and the other would focus on rural poverty concerns. Both would report directly to the Minister. However, the highest level GOE officials have informed USAID that this option is no longer under consideration. The RDS will be created in either the Presidency, Vice Presidency or CONADE to give it higher level support. The PIDAs, ASAs and regional entities (e.g. agricultural councils) will remain nominally under MAG, but will be utilized as local coordinating units by the RDS.

3. Ecuadorean Water Resources Institute (INERHI)

INERHI was created in 1966 as an autonomous agency attached to MAG. It has a staff of 1,785 and is empowered by law to administer and supervise all activities for irrigated agriculture and to enter into agreements with other agencies which participate in project execution.

Under the Water Law of 1972, INERHI was given broader powers than before for the development and management of water resources, including the creation of irrigation districts. INERHI's general policies are defined by its Board of Directors, chaired by the Minister of Agriculture and Livestock and comprising one representative each from the National Planning Council (CONADE), IERAC, and BNF, and an elected representative is the Executive Director, appointed by the Minister of Agriculture and Livestock. INERHI has developed good capabilities to construct civil works, leaving the management of agricultural development to the farmers or other agencies. Based on its experience with many irrigation projects over the past 15 years INERHI is well qualified to carry out the civil works of the irrigation component of the proposed Project.

To date, some 30,500 ha have been brought under irrigation. In addition, projects underway approximate 10,000 ha. (Privately developed irrigation schemes are estimated to total between 50,000 ha and 70,000 ha.) Under legislation of 1972, INERHI is responsible for assuring that the allocation of the national water resource among its multiple uses is done in a rational manner (although it does not have control over the agencies working in the water field, such as CEDEGE and CRM).

The INERHI budget was about S/. 317 million in 1976, including funds from foreign loans. The 1978 budget, which made provision for 580 technical and administrative posts, was S/. 552 million.

The agency has developed a substantial capability in civil works design and construction. However, lengthy gestation periods (up to 25 years) and limited production impact (even in the medium-term) have been commonplace, in part because of a shortage of experienced engineers, financial constraints, the lack of on-farm development services to farmers, and a reluctance to strengthen in-house capacities through the use of private consulting firms. To date INERHI has built many major and secondary canals, but has not developed extensive experience building tertiary systems or on-farm distribution systems. This has created some problems of access for poorer farmers without land titles who cannot get credit or technical assistance to build distribution systems. The production impact of INERHI's projects is also limited by the poor collaboration of institutions providing related services. In general, INERHI has concentrated on constructing systems and has given far less attention to questions of farm development. This proposed IRD project will begin reorienting INERHI to on-farm and small farmer development.

The Institute is fully aware of the magnitude of the national water resource management task for which it is responsible and of the many shortcomings in its performance, both those originating within the agency and externally. With this in mind, it has brought in assistance from France to help chart its future course, clarify the powers and responsibilities of the many agencies concerned with water use, improve inter-agency relationships, and produce a national water resource development and management plan.

4. National Development Bank (BNF)

The amount of credit made available to the agriculture sector by the banking system has expanded sharply in recent years, both in absolute terms and relative to nonagricultural lending. Loans to all sectors totalled S/. 35,736 million in 1976, up 157 percent on the 1972 figures of S/. 13,896 million. In 1972, agricultural loans accounted for slightly over 12 percent of total loans by the banking system. The comparable figure for 1976 was 16 percent.

The BNF (Banco nacional de Fomento) which through its 56 branches typically provides some 60 percent to 70 percent of the institutional credit for agriculture, increased its lending in current terms from S/. 587 million in 1973 to S/. 3,412 million in 1976. Crops accounted for 60 percent of the total BNF lending in 1975; livestock and pastures, 28 percent; farm machinery, 5 percent; on-farm infrastructure and related activities, 3 percent; and other, including finance for product marketing, 4 percent. About 75 percent of the credit made available to agriculture in 1976 was for the Coast, as in most previous years. The proportion of the total loan volume going to the lower-income groups (that is, crédito de capacitación) increased from about 12 percent in 1970 to 35 percent in 1974 and 37 percent in 1975.

The percentage distribution of BNF loans in 1976 by major activity, size, and term was as follows:

	<u>Crops</u>	<u>Livestock</u>	<u>Machinery & Implements</u>	<u>On-farm infra-structure</u>	<u>Total Agriculture</u>
<u>Size of loan</u>					
Less than S/. 50,000	22	20	6	9	20
More than S/. 200,000	54	42	82	80	53
<u>Term</u>					
Less than 1 year	78	8	5	2	52
More than 5 years	6	24	27	68	14

The amount of funds made available for crops in 1976 was about nine times larger than the amount in 1970. The increases were particularly notable for rice and wheat, together with cotton, account for a large portion of the credit for crops (69 percent in 1976). Neither the import substituting oil crops nor the main export crops are major outlets for credit; in 1976, the percentage of total crops credit going to oilseeds, cacao, coffee, bananas, and sugarcane was about 15 percent. The distribution of BNF crop loans by commodity group in 1976 was as follows: cereals, 57 percent; edible pulses, 1.4 percent; tubers, 5 percent; vegetables, 2.6 percent; fruit, 3 percent; oilseeds, 6 percent; fiber crops, 15 percent; others, 9.5 percent.

Loans for the livestock industry increased by a factor of about five in the 1970-76 period. Pasture development accounted for 13 percent of the livestock loan volume in 1976, and poultry 9 percent (up from 5 percent in 1970). For fixed investment, such as land and water development, farmers use BNF credit only to a limited extent.

In money terms, about 15 percent of the BNF lending in 1976 represented renewals of outstanding loans. The comparable figure for 1975 was 17 percent. The delinquency position improved notably in the 1972-76 period and, after renewal adjustments, stood at about 12 percent at end of 1976. Recent drought and anti-inflation measures have reversed the trend, and the arrears figure approximated 18.5 percent as of February 1978.

In spite of the recent rapid rate of growth in BNF operations, and its continuing effort to improve management, the proportion of farmers served by banking system is well below 10 percent and concentrated on two or three crops.

Apart from earmarked foreign credits, the maximum interest rate for agriculture is 9 percent, plus a commission intended to promote longer-term lending. The commission rate is 2 percent to 2.5 percent for loans of more than three and less than five years; 3 percent to 3.5 percent for loans of more than five and less than eight years; and 4.5 percent for loans of more than eight years. This commission system, which was announced in late 1976, leaves interest rates for longer-term lending in agriculture at figures still below the rates for nonagricultural loans. It is public policy to maintain some inter-sector differentials which favor agriculture, although the GOE is currently undertaking a major review of its interest rate policy.

5. Ecuadorean Institute for Agricultural and Livestock Research (INIAP)

INIAP is responsible for agricultural research directed toward raising yields, reducing production costs, and diversifying and improving production for consumption, export, and industrial use. Research is divided along three lines: crops, animals, and support activities to the other two divisions (e.g., soil improvement, seed processing, statistics). The entity has six experimental stations, three under a subdirector in Guayaquil and three under a general subdirector in Quito. In addition, some 400 private farms are used every year to test and disseminate the results obtained on the experimental stations.

INIAP has not been active in distributing its results to the farmer; instead it relies on the Ministry of Agriculture. In the past, coordination between INIAP and MAG was poor but has been improving recently as a result of the Ministry's reorganization. INIAP participates in the MAG's Provincial Agrarian Committees and also holds courses and meetings with MAG agents so they are aware of the results of INIAP's activities. In addition, MAG representatives are invited to the annual evaluation meetings held in the experimental stations.

There have been problems in transferring the technology developed at INIAP because it is too sophisticated for Ecuador's small farmers, because of the lack of credit and related inputs, and because of the deficiencies of the Ministry's fragmented crop oriented extension service. INIAP is moving to adapt its research more to the needs of the small farmer, but the problems associated with the related services and credit must also be resolved if its research is to have a greater impact on these farmers. Through AID's Rural Technology Transfer (Title XII) Project INIAP will receive assistance for the development of technological packages to be used in the IRD target regions.

6. Ecuadorean Land Reform and Colonization Agency (IERAC)

IERAC was established in 1964 as an autonomous agency attached to MAG following passage of the Agrarian Reform Law of 1964, and it has been constantly short of funds and qualified staff. IERAC has responsibility not only for the Agrarian Reform but also for colonization projects and for issuing land titles. Agrarian reform is given emphasis in the GOE development plan, which cites concentration of land holdings as a major problem of rural poverty in Ecuador. Land titling is also a key issue since farmers are prohibited by law from participating in the benefits of most projects (e.g. irrigation, credit) unless they hold legal titles.

Until now, the land reform measures that have been introduced have not been fully effective. Between 1964-69, the number of families benefitting from the reform program was less than half the target figure of 82,000; likewise, total land distributed was only 42% of the projected figure. From 1970 to 1976, however, the pace of the land reform program increased somewhat, with total land distributed rising almost 76% over that handled in the 1964-69 period. The problems of the land reform program can be attributed to: (a) inadequate financial resources; (b) lack of support and cooperation among other Government agencies; (c) rapid turnover of officials; and (d) absence of efficient legal procedures and clear definitions.

From 1973 to 1977 IERAC distributed 243 thousand hectares of land under the agrarian reform (28 percent of the planned goal of 863 thousand) to the benefit of 18,688 families, or 25 percent of the goal of 75 thousand families. It also settled an estimated 15 thousand families in colonization projects during that period, which is 100 percent of the planned goal. IERAC has been slow in issuing land titles, in part because a complicated and lengthy procedure is required and because of lack of qualified staff.

IERAC receives income from the budget, through agrarian reform bonds, and from the sale of land to beneficiaries of the reform. In 1978, 62 percent of its income in the budget was from Central Government transfers. The size of IERAC's budget is not large, given the number of its staff (1,343 in 1978) and the importance of its task. In 1978, it was budgeted an income of about S/ 500 million. In contrast INERHI, with a

staff of 584, had a budget of S/ 552 million for 1978. Nevertheless, in the past IERAC has executed only about 40 percent of its budget. Most of the budget which is not executed is for investment activities. According to the JUNAPLA investment program for 1978, the total cost of the investment in priority agrarian reform projects is S/ 2.6 billion, of which only 5 percent had been invested by the end of 1977.

IERAC has 6 regional offices (which do not coincide with the 10 MAG zones) and approximately two-thirds of its staff are outside of Quito. In addition to its work in agrarian reform and colonization, IERAC helps form cooperatives and train campesinos. IERAC also is engaged in building roads, schools, buildings, and bridges, largely because it has not been successful in obtaining the collaboration of other public entities in providing services and infrastructure to the reform areas.

IERAC has suffered from a high rate of top staff turnover, in large part because of a Government tendency to change IERAC's management whenever controversies arise. It has had 18 directors in 12 years. IERAC has also suffered from the lack of any central direction for rural development which could assure the collaboration of other entities in the reform.

7. Marketing Enterprises: ENAC, ENPROVIT, BNF, Others

The view that the agricultural marketing task is done poorly and at high cost is almost universally held in Ecuador. The marketing subsector is often described as being disorganized and anarchic, with the result that producer prices are unduly depressed and consumer prices are needlessly high. Indeed, this judgement underlies the creation of ENAC, ENPROVIT, and the MAG's Directorate of Marketing, and the launching in 1973 of the Programa Nacional de Mercadeo Agropecuario. The strategy of the Program centers on expanding the marketing activities undertaken by the public sector, thereby contributing directly to technical and economic improvements in the national system as well as indirectly by activating competitive forces.

ENPROVIT was created in 1971 to purchase and sell basic consumption items in order to reduce speculation and adulteration of these products. The entity employs a staff of 1,500 and has a network of 145 stores administered by 5 regional subdirectorates. Total sales have averaged between S/ 650 and S/ 700 million annually since 1974. Approximately 60 percent of purchases are from producers and 40 percent from intermediaries. ENPROVIT can also import items it considers to be in short supply; in 1977 it imported 2,050 metric tons of powdered milk, 1,200 metric tons of lentils, and 514 thousand gallons of soy and oil. In 1977, the Central Government provided 31 percent of ENPROVIT's total budgeted resources of S/ 40 million.

ENAC is a newer enterprise, created in 1974, to purchase and sell agricultural products in order to stimulate and direct production

and assure internal supply. ENAC has a limited capacity for storing agricultural products (364 thousand quintals in its own warehouses and silos, including temporary storage) and is currently constructing additional storage facilities (with a capacity of 1,342,000 quintals). ENAC also uses storage facilities of other public institutions and rents storage, which increases its capacity by 1,245 thousand quintals, for a total of 1,609 thousand quintals. It is also empowered to import and export agricultural products. Its activities are administered by 3 regional subdirectorates, a financial subdirectorato, a commercial subdirectorato, and a storage subdirectorato.

As noted above, MAG provides outlets for farmers for the basic grains, and, from time to time, for certain other products such as cotton. However, ENAC has been short of storage space and rural buying stations, and on occasion has faced surplus situations which led to severe losses, as with rice. Moreover, it enters the market only when prices are above the support minimums (which are scheduled to be announced before planting time). On the retail side, ENPROVIT, for which the enabling legislation was revised in July 1977, has the task of "regulating the internal market by means of direct participation in the distribution of essential consumer items with the aims of benefitting the lower income groups."

In the case of livestock marketing, a limited number of traders exercise considerable control over the marketing of live animals, the operation of abattoirs, and the distribution of carcass meat to retail outlets and processors. This group has resisted measures to modernize the livestock marketing system through improved slaughtering facilities, introduction of beef grading, the establishment of local auction yards, and other means. Apart from three modern abattoirs, two of which are expanding their activities, most livestock are still processed in municipally-owned and in rural slaughterhouses. The upward price trend for cattle (some 50 percent in the 1972-76 period), along with price intervention by the Government only for low quality cuts at retail, has probably lessened farmer interest in marketing reforms. The marketing problem has also been somewhat overshadowed at times by the extent to which the Government tolerates the inflow of live cattle from Colombia and the outmovement to Peru.

Input distribution is handled mainly by the private sector, although until recently the BNF operated a network of distribution centers for inputs and tractors. MAG has ten major distribution centers, and CREA has 16. FERTISA sells a part of its output directly to users. EMSEMILLAS is in process of installing a network of seed distribution facilities. Farmer associations, such as the Asociación de Ganaderos de la Sierra, maintain input sales depots (the sales of the six depots of the Association totalled S/ 22 million in 1977).

Several recent developments in the marketing field are of potential importance. First, ENAC is taking steps to ease one of its primary constraints, the shortage of storage space. Its construction

program has added 61,000 tons of capacity in grain production and a 20,000 ton port facility at Guayaquil; and, in a second phase will add from 30,000 tons to 60,000 tons in the Sierra. This construction has sharply expanded the ENAC facilities, and adds a significant increment to the total national facility.

Second, the private sector is showing increasing interest in installing modern grain handling facilities. A new 31,000 ton silo installation was opened in Durán in May 1978. This plant received, dries, cleans, grades, and stores grain on the basis of negotiable certificates of deposit and published service charges. The system represents both a technical and economic innovation in grain marketing, and through putting pressure on margins can help induce improvements in the facilities and business methods of the entire grain-handling industry, including the ubiquitous rice millers. Moreover, it can lead to the development of commodity markets

Third, the new Government is planning to undertake a comprehensive foreign-assisted study of the marketing of agricultural products and inputs. It is expected that the study will begin in late 1980, and will result in a set of specific proposals for the development and management of marketing facilities by the private and public sectors.

8. Ministry of Public Works/Provincial Governments - Rural Roads

The available data suggest that only limited progress is being made in providing farmers with the roads needed for the movement of products and inputs at reasonable cost. Taking the all-weather road as a proxy for the feeder road which reaches the farmgate, and assuming adequate maintenance, the system available to farmers expanded at an annual rate of only some 142 km in the 1962-70 period.

In March of 1973, the MOP set up a Department for Rural Roads (caminos vecinales), and through June of 1976 (when the Department was eliminated) a rural road construction program was carried out with FONADE funds. This program was based on the Plan Nacional de Carretera, which was completed in 1973 following detailed study in which foreign consultant services were used.

Since mid-1976 the MOP rural roads work has centered on completing the projects which were underway or in an advanced planning stage at that time. Much of the work is done through contracts with provincial governments, with the latter providing the machinery and the MOP paying machinery operating costs and doing the design work. MOP also contracts with regional development authorities. The provincial governments also do a considerable amount of road construction and maintenance on their own, though performance varies and consolidated statistics are not available.

9. Regional Institutions

There are four regional development authorities attached to MAG: CREA, CRM, CEDEGE, and PREDESUR. The Center for the Economic Reconversion of Azuay, Cañar, and Morona Santiago (CREA) is the oldest of the regional bodies (it was created in 1956), responsible for promoting the development of the three provinces it encompasses. The Center for the Rehabilitation of Manabí (CRM) was established in 1962 to implement development projects in Manabí. The Commission for Studying the Development of the Guayas River Basin (CEDEGE) is responsible for undertaking studies and projects to develop an area of 35 thousand square kilometers which includes portions of 8 provinces, although almost all of its territory is in Guayas and Los Ríos. Finally, the Program for the Development of the Southern Region of Ecuador (PREDESUR) was originally established (in 1971) to participate in joint development projects with Peru in the frontier region, but has since taken on responsibility for promoting the development of the provinces of El Oro, Loja and Zamora-Chinchipe. In addition, a new entity was created in 1978 to coordinate development activities throughout the Oriente (INCRAE). Though its role is still evolving, it appears that it will not become a regional development authority with the same scope of responsibilities as the other four.

Two of the regional entities were formed in response to crisis situations or persistent problems facing their regions. CREA grew out of a crisis in the economy of the region caused by a slump in the hat industry, and CRM was created to deal with a problem of persistent drought. CEDEGE was formed by the national Government in order to develop the vast potential of the Guayas region. PREDESUR was originally a frontier project to exploit the waters between Ecuador and Peru.

The scopes of the regional entities differ. CREA and PREDESUR are now involved in a wide range of activities promoting the development of their regions. Both have analyzed the needs of their regions and CREA has formulated and PREDESUR is formulating development plans which can form the basis for project identification. These two entities are also becoming more involved in integrated rural development projects. CEDEGE and CRM have a more limited scope, although both are now beginning to expand into integrated rural development projects.

To execute their projects, the entities sign contracts (convenios) with public institutions (including MAG) and private agencies. A project might involve contracts with INERHI for construction of irrigation infrastructure, with the MAG for extension, with IERAC for land titles, and with the Ministry of Public Works for roads, although problems of coordination have presented.

With the exception of CRM, which has access to earmarked tax funds, the entities depend upon Central Government transfers and foreign borrowing for their income. Although nominally controlled by MAG, the


regional institutions operate with considerable independence. Their budget allocation is determined by finance and is not used by the MAG as an instrument of control. The Ministry has had little influence over their programs and regional considerations have been the main factors determining their activities. As mentioned, there has been no national policy or office to direct their activities.

In addition to assisting CRM with IRD planning, the project prepared herein will cooperate with the Central Sierra Provinces (Region 4) in establishing a regional development authority analogous to CREA, CRM, CEDEGE, and PREDESUR, thereby filling a major gap in regional coverage.

CERTIFICATION PURSUANT TO SECTION 611 (e) OF THE FOREIGN ASSISTANCE
ACT OF 1961, AS AMENDED

I, John A. Sanbrailo, the principal officer of the Agency for International Development in Ecuador, having taken into consideration among other factors, the maintenance and utilization of projects in Ecuador previously financed or assisted by the United States, do hereby certify that in my judgment Ecuador has the technical capability and the physical, financial, and human resources to utilize and maintain effectively the proposed loan of nine million, eight hundred thousand United States dollars (\$9,800,000) and grant two million United States dollars (\$2,000,000) from the Government of the United States of America to the Government of Ecuador for the development of an institutional capacity to plan and execute Integrated Rural Development projects in a manner involving the active participation of the intended beneficiaries, including, among other things, the actual implementation of two such projects in the Sierra areas of Salcedo and Quimiag-Penipe and the planning of a third such project in the Coastal area of Jipijapa.

This judgment is based on the facts presented in the Project Paper and the Mission's previous experience with the Ministry of Agriculture as well as experience with loans to other agencies of the Government of Ecuador.


John A. Sanbrailo
Representative, USAID/Ecuador

June 26, 1980

INITIAL ENVIRONMENTAL EXAMINATION

Project Locations: Quimiag-Penipe, Province of Chimborazo, and Salcedo
Province of Cotopoxi, Republic of Ecuador

Project Title: Integrated Rural Development

Funding: FY 80 US\$5,000,000 (Loan) and US\$200,000 (Grant)
LOP US\$9,800,000 (Loan) and US\$2,000,000 (Grant)

Life of Project: 4 years

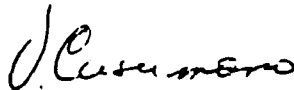
IEE Prepared by: Vincent Cusumano
USAID/Rural Development Officer

Date: June 6, 1980

Threshold Decision

A. Environmental Action Recommended

I recommend that based on the initial Environmental Examination for the proposed actions that a negative determination and decision be made as follows: "The proposed action will not have a significant effect on human environment and therefore does not require an Environmental Impact Statement or an Environmental Assessment."



Vincent Cusumano
June 7, 1980

B. Consurrence

I, John Sanbrailo, Mission Director, concur in the above recommendation.



John Sanbrailo
June 15, 1980

I. Examination of Nature, Scope and Magnitude of Environmental Impacts

A. Description of Project:

The Integrated Rural Development Project is centered on a comprehensive approach to the development of two areas in the sierra region of Ecuador. The objective of the projects are to improve the level of life of some 8,000 poor rural families. This project is part of a larger AID Integrated Rural Development Program which includes proposed follow-on projects in Natural Resources Conservation, Health-Nutrition and Rural Industry. The first installment is oriented at agricultural development and community organization. Both of the areas involved are densely populated minifundia zones characterized by sporadic irrigation, subsistence agriculture and widespread poverty and deprivation. Many GOE agencies and ministries will be focusing their efforts at the same time in these areas in an effort to solve the multi-faceted problems of rural poverty. Following are short descriptions of the activities which are intended for action under this Project and the other components of the AID IRD Program.

1. Natural Resources Conservation

There is considerable erosion in both of the Project areas and both projects have components which involve reforestation, planting of vegetative cover on barren areas, check dams and other works aimed at diffusing normal water run-off, and on farm practices of irrigation which will tend to reduce erosion. Some of these actions are part of the current project, others will be part of the future natural resources conservation and reforestation Project.

2. Roads and Rural Infrastructure

Roads already existing in the project areas will be improved with better gravel and some cobblestone surfacing. Water courses will be improved at the roadside to decrease erosion and preserve road surfacing. Only 10 kilometers of new access roads will be constructed, replacing trails presently serving these areas.

Health posts and sub-centers, community centers, input storage facilities, village water supplies and latrines will all be constructed as a part of project implementation. The health infrastructure will be funded under the proposed FY 1981 health Project.

3. Agriculture Development

A major thrust of the project is the development of increased yields and marketable crops. Approximately 800 Ha. of fruit trees will

be planted in the project areas to increase the marketable produce and decrease the dependance of the farmers on subsistence crops. These plantings should tend to stabilize the hilly soil and take it out of the annual cultivation cycle which accentuates erosion. Short term credit, financed entirely under the GOE's contribution, will include funds for purchase of chemicals for use on fruit trees. Through appropriate technical assistance to the farmers, efforts will be made to insure that those chemicals will minimize environmental contamination.

Currently, in both project areas there are fruit orchards where farmers apply pesticides in any quantities they think appropriate. With technical assistance provided by the project, it is hoped that the amounts applied will be determined in a more rational manner. No new chemicals not now in use will be introduced by the project. Ecuadorean law requires that no chemical can be introduced which is not approved in the country of origin.

Technical assistance related to crop production also will tend to rationalize the use of chemicals and as with fruit, no new chemicals not now in use will be introduced by the project. Improving irrigation practices such as contouring, terracing, and control of drainage should improve the human and natural environment in the areas included in the projects.

B. Narrative Description of Environmental Impact Identification and Evaluation Form

1. Land Use:

No environmental impact is assessed to "increasing population" Land densities are already high and there is a tendency to outmigration which the project will not likely affect significantly. The most the project will do is to improve the life of approximately the current population. The overall population distribution with reference to the land in Ecuador will probably be improved by the project since it will have the net impact of reducing the outmigration of people to the environmentally congested and overburdened urban areas. The item "Changing soil character" received a "Moderate +" rating because if no action is taken the soil will continue to erode, project activities should increase the environmental stability of the soil source and reverse the erosion process at least "moderately".

2. Water Quality:

Current runoff carries large quantities of sediment due to erosion. It is anticipated that through this project efforts at irrigation practices improvement and follow-on efforts at reforestation and vegetative cover, that the quality of surface waters will improve at least a "little" therefore the rating "little +" was given to water quality.

3. Atmosphere:

No project activities should have an effect on atmospheric quality.

4. Natural Resources:

An "L+" rating was given to "Diversin Altered Use of Water" because there will be direct efforts to divert and decrease downward water velocity and runoff, no irreversible, inefficient commitments are foreseen.

5. Cultural, Socio-Economic:

A highly positive socio-economic effect is anticipated as higher incomes and better general standard of living are increased for the poor in the project areas. The active participation of local communities in their own welfare should increase social and cultural cohesion.

6. Health:

While the AID contribution in this first project does not directly deal with health, future health inputs are programmed for the project area. There will be rural health promoters teaching health practices and improving the nutritional patterns in the areas. From these efforts it is expected that health will improve at least some (L+) even before the balance of AID's assistance in the form of a proposed health loan, becomes available.

7. General:

There are no major negative environmental impacts foreseen under this Project. There is a recognition that there may be minor adverse environmental effects as a result of the Project's intervention in the areas of water resource improvements, road construction and expansion of deciduous fruit production. However, in designing this Project, the combined GOE/USAID team has incorporated a management mechanism for addressing these problems. For example, as part of the CP requirement (approval of final implementation plans), the GOE will be required to submit to AID for approval an environmental monitoring plan for identifying and controlling the potential negative aspects of the proposed activities. At the same time, technical assistance will be provided at the RDS level on techniques and methodologies for developing future environmentally sound programs. At the field level, technical assistance will be provided on modern agricultural practices with special emphasis on an integrated crop-protection program. While additional research is needed, the small farmer adaptive research subproject under the Rural Technology Transfer System Project (Title XII) will work with IRD technicians in developing "tech packs" suitable for the ecological conditions of the two IRD areas. Because of these steps, the Project Committee feels assured that no adverse environmental effect will take place under this Project.

Recommendations for Environmental Action:

The components which form this project do not have a significant effect on the environment. Therefore, no further environmental action is recommended.

IMPACT IDENTIFICATION AND EVALUATION FORM

Impact Areas and Sub-Areas

Impact Identification
and Evaluation

A. LAND USE

1. Changing the character of the land through:

a. Increasing the population.....	L
b. Extracting Natural Resources....	N
c. Land clearing.....	N
d. Changing soil character.....	M+
2. Altering natural defenses.....	N
3. Foreclosing important uses.....	N
4. Jeopardizing man or his works.....	N
5. Other factors	N
_____	_____
_____	_____

B. WATER QUALITY

1. Physical state of water	L+
2. Chemical and biological states.....	N
3. Ecological Balance.....	L+
4. Other factors	N
_____	_____
_____	_____

C. ATMOSPHERIC

1. Air additives	L
2. Air Pollution	N
3. Noise Pollution	N
4. Other Factors	N
_____	_____
_____	_____

D. NATURAL RESOURCES

1. Diversion, altered use of water.....	L+
2. Irreversible, inefficient commitments	N
3. Other Factors	N
_____	_____
_____	_____

E. CULTURAL

1. Altering physical symbols.....	N
2. Dilution of cultural traditions.....	N
3. Other Factors	
_____	N

F. SOCIO-ECONOMIC

1. Changes in economic/employment patterns.....	L
2. Changes in population.....	L
3. Changes in cultural patterns.....	N
4. Other Factors	
_____	N

G. HEALTH

1. Changing a natural environment	N
2. Eliminating an ecosystem element ...	M
3. Other Factors	

H. GENERAL

1. International impacts.....	N
2. Controversial Impacts.....	N
3. Larger program impacts	N
4. Other Factors	

I. OTHER POSSIBLE IMPACTS (not listed above)

_____	N

Explanation of codes:

N- No environmental impact	U- Unknown environmental impact
L- Little environmental impact	+ Positive impact on the environment
M- Moderate environmental impact	- Negative impact on the environment
H- High environmental impact	

Consejo Nacional de Desarrollo

*Suplen. del
Vicepresidente
de la República*

Oficio No.

001815

Quito, a

27 JUN. 1990

Señor
John Sambraillo,
Representante de la AID,
Presente.

Estimado señor Sambraillo:

Por su comunicación RDO-8--0070 de junio 19 estoy enterado que el proyecto "Sistema de Transferencia de Tecnología Rural", que presenté a su consideración para financiamiento de la AID, ha sido remitido a la oficina central en Washington.

Con esta oportunidad le estoy remitiendo el "Proyecto de Desarrollo Rural Integral" para la ejecución del cual, estamos solicitando la participación financiera de la AID. Este proyecto comprende la ejecución de los proyectos de Desarrollo Rural Integral de las áreas de Quimiag-Penipe, en la Provincia del Chimborazo, de Salcedo, en la Provincia del Cotopaxi y el apoyo institucional a la Secretaría de Desarrollo Rural Integral, DRI.

Los proyectos DRI de Quimiag-Penipe y Salcedo, serán ejecutados bajo los términos de organización institucional establecidos en la estrategia de desarrollo del sector rural del Plan Nacional de Desarrollo del Gobierno Democrático, la que contempla el establecimiento de una Unidad que cumplirá la función de programar, coordinar, organizar y evaluar las acciones de los proyectos de Desarrollo Rural Integral, al igual que proponer la asignación de recursos financieros para la ejecución de los referidos proyectos. Ella garantizará una adecuada implementación, tanto técnica como financiera, que será canalizada a las agencias y organismos del sector público participantes en su ejecución.

Los proyectos de Desarrollo Rural Integral "Quimiag-Penipe" y "Salcedo", así como el apoyo institucional a la Secretaría de Desarrollo Rural Integral, tiene un costo de 806.7 millones de sucres (US\$ 32.7 millones), que serán invertidos en un período de cuatro años. Se ha previsto un financiamiento por parte de AID de 11.8 millones de dólares, para las actividades agrícolas y un financiamiento posible en el

Consejo Nacional de Desarrollo

*Segundo del
Vicepresidente
de la República*

2.

futuro de 4.3 millones de dólares, para actividades de infraestructura social. La totalidad del financiamiento solicitado representa 50% de las necesidades previstas.

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, hasta cuando se constituya la Secretaría de Desarrollo Rural Integral.

Le saluda atentamente,

DIOS, PATRIA Y LIBERTAD,



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

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ANNEX B
(Page 3 of 6)

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:REGON galez

(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 H

(Page 5 of 6)

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.



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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.

5C(1) - COUNTRY CHECKLIST

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?

2. FAA Sec. 431. 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?

3. FAA Sec. 620(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement?

4. FAA Sec. 620(c). If assistance is to government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government?

5. FAA Sec. 620(e)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?

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

3. The Secretary of State has so determined.

4. No such case is known.

5. No.

A.

6. FAA Sec. 620(a), 620(f); FY 79 App. Act, Sec. 111, 114 and 116. Is recipient country a Communist country? Will assistance be provided to the Socialist Republic of Vietnam, Cambodia, Laos, Cuba, Ugar., Mozambique, or Angola?

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?

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

9. FAA Sec. 620(1). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason?

10. FAA Sec. 620(o); Fishermen's Protective Act of 1977, as amended, Sec. 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters:

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

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

11. FAA Sec. 620; FY 79 App. Act, Sec. 603. (a) Is the government of the 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?

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

Annex I
Page 2 of 12

6. No.

7. No.

8. The GOE is taking measures considered adequate by the USG.

9. The AID Administrator has not so considered.

10. In recent years no such incidents have taken place

11. No.

12. Yes, as per the annual report on implementation of Section 620 (s). Ecuador's CY 1980 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.)

13. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?

13. No.

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

14. Payment status is current.

15. FAA Sec. 620A, FY 79 App. Act, Sec. 607. Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism?

15. No.

16. FAA Sec. 666. Does the country object, on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under FAA?

16. No.

17. FAA Sec. 669, 670. Has the country, after August 3, 1977, delivered or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards? Has it detonated a nuclear device after August 3, 1977, although not a "nuclear-weapon State" under the nonproliferation treaty?

17. No.

FUNDING CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria

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

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

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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?

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?

b. FAA Sec. 533(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?

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

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?

e. FAA Sec. 620B. Will security supporting assistance be furnished to Argentina after September 30, 1978?

b. Only indirectly, as recipients achieve higher agricultural productivity and incomes. Complementary health and family planning services will be provided to the same beneficiaries from other AID projects.

2.a. Not applicable.

b. Not applicable.

c. Not applicable.

d. Not applicable.

e. Not applicable.

5C(2) - 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 PRODUCT?

A. GENERAL CRITERIA FOR PROJECT

1. FY 79 App. Act Amendments: FAA Sec. 653 (b); Soc. Sec. 101. (a) Describe how all proceeds on Appropriations of Senate and House have been or will be notified concerning the project; (b) is assistance with (Fiscal Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure)?
 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?
 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?
 4. FAA Sec. 611(b); FY 79 App. Act Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973?
 5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?
 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.
1. Project was originally the major component of the Technological Access Networks for Small Farmers Project, listed in FY 1980 Congressional Presentation. A revised notification to Congress will be made due to changes in funding levels and certain components.
 2. Reasonably firm estimates of costs have been made and are summarized in this Project Paper. Relevant engineering and financial plans have been prepared.
 3. No such action required.
 4. USAID believes so. See Annex 1A, Section III for Statement of 611 (b) Compliance.
 5. AID Representative for Ecuador has so certified.
 6. No, the Project is Ecuador-specific in its institution-building aspects.

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

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(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

12. FY 79 App. Act Sec. 608. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar, or competing commodity?

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(b); 111; 113; 281a. Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained

7. The Project is geared to increasing agricultural efficiency in the small farm sector. Cooperatives will be used as a vehicle to achieve improved small farmer production and income whenever possible.

8. Many goods and services under the Project will be supplied by the U. S. private sector.

9. The GOE is supplying approximately 50% of the Project's costs. In general, foreign exchange costs will be provided by the AID component.

10. No.

11. Yes.

12. No assistance is contemplated directly for export crops. Indirectly, assistance is being provided for planning an integrated rural development project in a coffee-producing zone. This assistance is not expected to have a significant effect on the coffee market.

1.a. The basic objective of the Project is to assist the productivity and incomes of the rural poor through integrated rural development projects. The system has been designed to enhance the participation of the beneficiaries in both the planning and the implementation stages of the projects. The diffusion of resources and appropriate technologies to the beneficiaries is an important part of the process. Cooperatives will be assisted to be part of the integrated rural development process. Addressing its rural poverty problems through integrated rural development projects is a high priority self-help effort of

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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, 103A, 104, 105, 106, 107.
Is assistance being made available: (include only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.)

(1) [103] for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; [103A] if for agricultural research, is full account taken of needs of small farmers;

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

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

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

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

(ii) to help alleviate energy problems;

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

(iv) reconstruction after natural or manmade disaster;

the GOE, which AID is actively supporting. Women's problems have been taken into account in the design of the Project's activities, and it is believed that the specific interventions designed will improve the participation in development and the status of rural women in Ecuador.

b. 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 an integrated rural development system to serve the needs of the rural poor and to help them improve their incomes, productivity, and well-being.

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

(vi) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

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

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)?

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

f. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental and political processes essential to self-government.

g. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase or productive capacities and self-sustaining economic growth?

2. Development Assistance Project Criteria (Loans Only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.

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

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

d. Yes, the GOE will provide approximately 50% of the costs of the Project.

e. The Project does not involve grant capital assistance.

f. The Project fulfills a high priority need, as stated in the GOE's Development Plan and publicly by top officials. Ecuadoreans were involved closely in its design. The Project will be carried out through a variety of Ecuadorean institutions, from the highest governmental levels to local levels.

g. 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.

2.a. Not applicable.

b. 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?

3.a. Not applicable.

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

b. Not applicable.

5C(3) - 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 financed be from the U.S. except as otherwise determined by the President or under delegation from him?
 3. FAA Sec. 604(d). 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(e). 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. 606(a). Will U.S. Government excess personal 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 1936, as amended, that at least 50 per centum 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. 621. If technical assistance is financed, will such assistance be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis? If the
1. In accordance with AID regulations, procedures encouraging small business participation will be followed.
 2. Procurement is planned from U. S. and host country for grant funds, and also from Code 941 countries for loan funds. Waivers from such sources will be requested as required.
 3. Not applicable.
 4. Not applicable.
 5. Yes.
 6. Such provisions will be written in the Project Agreement.
 7. Technical assistance is expected to be contracted primarily from private firms and individuals. Contracts may also be made with international organization.

A.7.

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, 1974. 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?

9. FY 79 App. Act Sec. 105. Does the contract for procurement contain a provision authorizing the termination of such contract for the convenience of the United States?

B. Construction

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

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?

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

Other Restrictions

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

2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?

1. FAA Sec. 620(h). Do arrangements preclude promoting or assisting the foreign aid projects or activities of Communist-bloc countries, contrary to the best interests of the United States?

2. FAA Sec. 636(i). Is financing not permitted to be used, without waiver, for purchase, long-term lease, or exchange of motor vehicle manufactured outside the United States, or guaranty of such transaction?

8. Yes, the Project Agreement will so state.

9. Yes, it will.

1. Not applicable.

2. Yes. However, no contracts for construction are expected.

3. Not applicable.

1. Yes.

2. Not applicable.

3. Yes, arrangements preclude activities as stated.

4. All motor vehicles to be financed are expected to be procured from the United States.

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 209(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 on propaganda purposes within United States not authorized by the Congress?

5. Arrangements preclude the financing of all items listed.

DRAFT PROJECT AUTHORIZATION

NAME OF COUNTRY: Ecuador

NAME OF PROJECT: Integrated Rural Development

NUMBER OF PROJECT:

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Integrated Rural Development Project for Ecuador involving planned obligations of not to exceed \$9,800,000 in loan funds and \$2,000,000 in grant funds over a four (4) year period from the date of signing of the Agreement to the Project Assistance Completion Date (PACD), subject to the availability of funds in accordance with the AID OYB/allotment process, to help in financing foreign exchange and local currency costs for the project.
2. The Project consists of making operational Ecuador's integrated rural development mechanism through: (1) the financing of technical assistance and related activities for the Rural Development Secretariat (RDS) (2) the provision of financial and technical assistance for implementing two IRD field projects located in the central Sierra (the Salcedo area of Cotopaxi Province and the Químiag-Penipe area of Chimborazo Province, and (3) financing the planning of new IRD projects and assistance for regional development organizations.
3. The Project Agreement which may be negotiated and executed by the Officers to whom such authority is delegated in accordance with AID regulations and Delegations of Authority shall be subject to the

following essential terms and covenants and major conditions, together with such other items and conditions as A.I.D. may deem appropriate.

4a. Source and Origin of Goods and Services

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

b. Conditions Precedent to First Disbursement

Except as A.I.D. may otherwise agree in writing, prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, Ecuador shall furnish, in form and substance satisfactory to A.I.D., evidence that:

1. a Rural Development Secretariat (RDS) has been legally established;
2. an Executive Secretary of the RDS has been appointed and is working in that capacity.

c. Conditions Precedent to Disbursement of Project funds other than for technical assistance, studies and related items

Except as AID may otherwise agree in writing, prior to any disbursement or the issuance of any commitment documents under the Project Agreement for other than technical assistance, studies and related items, Ecuador shall furnish in form and substance satisfactory to A.I.D., evidence that:

1. the operating procedures for the Rural Development Secretariat, including appropriate regulations and operating manuals;
2. the IRD Fund be established, including accounting and operating procedures;
3. the RDS have a plan for evaluating the IRD program as a whole.

d. Conditions Precedent to First Disbursement of funds which will be used to implement any of the activities (except for technical assistance) in either the Salcedo IRD project or the Químiag-Penipe IRD project

Except as AID may otherwise agree in writing, prior to any disbursement other than for technical assistance for the Salcedo or Químiag-Penipe IRD projects, Ecuador shall furnish in form and substance satisfactory to AID:

1. an implementation plan for the individual IRD project that must include signed agreements with MAG, INERHI, BNF, IERAC, INIAP and all other participating institutions each such agreement to include detailed technical plans of specific activities to be undertaken within the IRD project. The implementation plan should also include the following:
 - (i) detailed irrigation plans prepared by INERHI for all irrigation works to be carried out, including distribution canals and

identification of parcels to be benefited;

(ii) a complete first year operating plan for the IRD project including activities proposed, objectives, budgets; and methods for monitoring environmental aspects of the proposed activities.

(iii) the evaluation plan for the specific IRD project, including baseline data or detailed arrangements on how baseline data will be collected.

e. Conditions Precedent to First Disbursement of funds for IRD Planning Activities

Except as AID may otherwise agree in writing, prior to any disbursement for IRD planning activities, Ecuador shall furnish in form and substance satisfactory to AID:

1. An agreement between the RDS and the respective local planning and coordinating organization, such agreement to include a detailed description of, and budget for, the proposed study.