PD-ABK-025, 11930
517-0247

GRANT N[illegible]42-G-00-3090-00
FUNDACION PARA EL DE[illegible]LO COMUNITARIO (FUDECO)

ROBERT S. PASTORINO
AMBASSADOR
UNITED STATES OF AMERICA

LIC. MIGUEL SANG BEN
TECHNICAL SECRETARY OF THE
PRESIDENCY

RAYMOND F. RIFENBURG
DIRECTOR
U.S. AGENCY FOR
INTERNATIONAL DEVELOPME[illegible]

LIC. EDUARDO FRANKENBERG
PRESIDENT
FUNDACION PARA EL
DESARROLLO COMUNITARIO
(FUDECO)

LIC. HORACIO J. ORNES HEDED
EXECUTIVE DIRECTOR
FUNDACION PARA EL
DESARROLLO
COMUNITARIO (FUDECO)

DATE: 3/11/93

CONFORMED COPY

U. S. AID MISSION TO DOMINICAN REPUBLIC
AMERICAN EMBASSY, P. O. Box 22201
SANTO DOMINGO, DOMINICAN REPUBLIC

FOR U. S. CORRESPONDENTS:
U. S. AID MISSION
APO MIAMI 34041-0008

March 11, 1993

Mr. Horacio J. Ornes Heded
Executive Director
FUNDACION PARA EL DESARROLLO COMUNITARIO, INC
FUDECO
Jacinto Mañón No. 32, Ensanche Paraíso
Santo Domingo, D.R.

Subject: Grant No. 517-0247-G-00-3090-00

Dear Mr. Ornes:

Pursuant to the authority contained in the Foreign Assistance Act of 1961, as amended, the Agency for International Development (hereinafter referred to as "A.I.D." or "Grantor") hereby grants to the Fundación de Desarrollo Comunitario (hereby referred to as FUDECO or "Recipient") the sum of $705,829 to implement the Integrated Health and Natural Resources Management Project, as more fully described in the Schedule of this grant and the Attachment 2, entitled "Program Description."

This Agreement is effective and obligation is made as of the date of this letter, and shall apply to commitments made by the Grantee in furtherance of program objectives during the period beginning on March 11, 1993 and ending March 10, 1996.

This Agreement is made to the Grantee on the condition that the funds will be administered in accordance with the terms and conditions as set forth in this Cover Letter, in Attachment 1 entitled "Schedule," Attachment 2 entitled "Program Description," Attachment 3 entitled "Mandatory Provisions for Non-U.S., Non-Governmental Grantees", Attachment 4 entitled "Required as Applicable Standard Provisions for Non-U.S., Non-Governmental Grantees", and Attachment 5 "Special Provisions".

Please sign the Statement of Assurance of Compliance with Laws and Regulations Governing Nondiscrimination in Federally Assisted Programs, the Clause 52.223-5, Certification Regarding A Drug-Free Workplace, enclosed herein, and all copies of this letter to

2

acknowledge your receipt and acceptance of the conditions under which these funds have been granted and return all but one copy to A.I.D.

Sincerely,

Martin F. Napper
Grant Officer

Attachments:

1. Schedule
2. Program Description
3. Mandatory Standard Provisions for Non-U.S., Nongovernmental Grantees, dated March 30, 1989
4. Required as applicable Standard Provisions for Non-US, Non-Governmental Grantees, January 1, 1987
5. Special Provisions (includes Assurance of Compliance and Drug Free Workplace Certifications)

ACKNOWLEDGED:

FUNDACION PARA EL DESARROLLO COMUNITARIO, INC
(FUDECO)

BY: _____

TITLE: PRESIDENTE

DATE: 3/11/93

FISCAL DATA

Appropriation: 72-112/31021 EARMARK: D300046
Budget Plan code: LDC2-92-25517-KG13
PIO/T No.: 517-0247-3-20070
Grant No.: 517-0247-G-00-3090-00
Total Estimated Amount: $705,829
Total Obligated Amount: $705,829
Funding Source: USAID/DR
Project Office: USAID/GDO

FUNDS AVAILABLE
JJT
Initial 3/10/93 Date

Clearances:
PStruharik/GDO: _____ Date: 3/10/93
RMangrich/GDO: _____ Date: 3/10/93
DChiriboga/PDO: _____ Date: 3/10/93
WButler/CON: _____ Date: 3/10/93
MNapper/RCO: _____ Date: 3/11/93

ATTACHMENT 1

SCHEDULE

A. PURPOSE OF THE GRANT

The purpose of the project is to help resolve the immediate needs of the low-income people that live in subsistence conditions on the Dominican border, by providing technical assistance and resources that contribute to improvements and self-sustainability through improved health services and natural resources administration.

B. PERIOD OF THE GRANT

1. The effective date of this Grant is march 11, 1993. This Grant will expire on March 10, 1996.

C. AMOUNT OF THE GRANT AND PAYMENT

1. A.I.D. hereby obligates the amount of Seven Hundred Five Thousand Eight Hundred and Twenty Nine United States Dollars ($705,829) for the purpose of this grant.

2. Payment shall be made to the Recipient in accordance with procedures set forth in Attachment 4 "Required as Applicable Standard Provisions for Non-U.S., Nongovernmental Grantees, Payment - Periodic Advance"."

D. FINANCIAL PLAN

The following is the grant Budget. Revisions to this budget shall be made in accordance with the Standard Provisions of this Grant entitled "Revision of Grant Budget."

The Grantee may make adjustments between line items of up to 15% of any line item without the prior written approval of the Grant Officer. Approval beyond 15%, if given, will be via formal amendment to the Grant. In no event may the Grantee exceed the total estimated cost of the Grant nor the total estimated cost for any given year without the prior written approval of the Grant Officer.

Note that the exchange rate used to compute all local currency budgets is RD$12.50 to US$1.00. THE GRANTEE WILL NOT EXCEED THE U.S. DOLLAR AMOUNT NOR THE LOCAL CURRENCY AMOUNT.

Peso Budget

	AID Contribution
1.0 Water System	
1.1 Personnel	174,963
1.2 Training	149,917
1.3 Materials, Tools and Equ.	2,272,125
2.0 Latrines	
2.2 Training	46,801
2.3 Materials and Tools	653,913
3.0 Child Survival	
3.1 Personnel	346,675
3.2 Materials and Supplies	127,350
3.3 Training	385,565
4.0 Home Garden	
4.2 Training	130,842
4.3 Seeds and Organic Material	382,412
5.0 Reforestation	
5.1 Personnel	113,063
5.2 Training	188,252
5.3 Plants	783,750
6.0 Soil Conservation	
6.1 Personnel	113,013
6.2 Training	251,902
6.3 Materials and Tools	365,100
7.0 Lorena Stoves	
7.2 Training	111,689
7.3 Materials and Tools	265,400
8.0 Administrative Expenses	
8.1 Personnel	621,139
8.2 Fuel and Maintenance	502,462
8.3 Materials and Supplies	135,576
8.4 Perdiem and Logging	156,624
8.5 Telecommunications	145,074
8.6 Remodel Training Center	142,000
9.0 Evaluation	
9.1 Initial Evaluation	12,000
9.2 Annual Evaluation	57,750
9.3 Auditors	187,500
TOTALES	8,822,857

FUNDACION PARA EL DESAROLLO COMUNITARIO, INC. -FUDECO-
GENERAL BUDGET
VALUES IN US$

COMPONENTS EXPENSES	ANNEXES	YEAR 1			YEAR 2			YEAR 3			TOTALS		
		AID	FUDECO	BENEF.	AID	FUDECO	BENEF.	AID	FUDECO	BENEF.	AID	FUDECO	BENEF.
1.0 Water System													
1.1 Personnel	A-1	4,719	4,576		5,190	5,034		4,088	12,024		13,997	21,634	
1.2 Training	B-1	3,694	1,231		3,990	1,330		4,309	1,436		11,993	3,997	
1.3 Materials, Tools and Equipment	C-1	85,394	29,935	3,872	96,376	38,674	3,353				181,770	68,609	7,225
2.0 Latrines													
2.2 Training	B-5	1,153	384		1,246	415		1,345	448		3,744	1,247	
2.3 Materials and Tools	C-5	17,761	5,920	4,708	19,182	6,393	5,084	15,371	5,125	4,075	52,314	17,438	13,867
3.0 Child Survival													
3.1 Personnel	A-2	8,008	9,495		8,808	10,442		10,918	15,770		27,734	35,707	
3.2 Materials and Supplies	C-2	10,188	3,395		0						10,188	3,395	
3.3 Training	B-2	9,501	3,167		10,261	3,421		11,082	3,694		30,844	10,282	
4.0 Home garden													
4.2 Training	B-6	3,224	1,074		3,482	1,160		3,761	1,253		10,467	3,487	
4.3 Seeds and Organic Materials	C-6	9,077	3,033		10,590	3,640		10,927	3,524		30,594	10,197	
5.0 Reforestation													
5.1 Personnel	A-3	2,359	2,202		2,596	2,421		4,090	3,818		9,045	8,441	
5.2 Training	B-3	4,639	1,546		5,010	1,670		5,411	1,804		15,060	5,020	
5.3 Plants and Materials	C-3	20,900	213	82	20,900	213	54	20,900	213	27	62,700	639	163
6.0 Soil Conservation													
6.1 Personnel	A-4	2,359	2,202		2,594	2,421		4,088	3,817		9,041	8,440	
6.2 Training	B-4	6,208	2,069		6,704	2,235		7,240	2,413		20,152	6,717	
6.3 Materials and Tools	C-4	4,381	1,460	9,331	10,223	3,408	21,773	14,604	4,868	31,104	29,208	9,736	62,208
7.0 Lorena Stoves													
7.2 Training	B-7	2,752	917		2,972	991		3,210	1,070		8,934	2,978	
7.3 Materials and Tools	C-7	8,493	2,831		6,370	2,123		6,370	2,123		21,233	7,077	
8.0 Administrative Expenses													
8.1 Personnel	A-5	16,481	10,045		16,123	13,056		17,087	26,982		49,691	50,083	
8.2 Fuel and Maintenance	C-8	12,382	12,382		13,373	13,373		14,442	14,442		40,197	40,197	
8.3 Materials and Supplies	C-8	3,615	1,371		3,615	1,371		3,615	1,371		10,845	4,113	
8.4 Perdiem and Lodging	C-8	4,177	1,666		4,177	1,666		4,177	1,666		12,531	4,998	
8.5 Telecommunications	C-8	3,869	1,546		3,869	1,546		3,869	1,546		11,607	4,638	
8.6 Remodel Training Center	C.8.2	11,360									11,360	0	
9.0 Evaluation													
10.1 Initial Evaluation		960									960		
10.2 Annual Evaluation		1,540			1,540			1,540			4,620		
10.3 Auditors		5,000			5,000			5,000			15,000		
TOTAL DIRECT COST		264,194	102,660	17,993	264,191	117,003	30,264	177,444	109,407	35,206	705,829	329,070	83,463

FUNDACION PARA EL DESAROLLO COMUNITARIO, INC. -FUDECO-
PRESUPUESTO GENERAL
VALORES EN RD$

COMPONENTS EXPENSES	ANNEXES	YEAR 1			YEAR 2			YEAR 3			TOTALS		
		AID	FUDECO	BENEF.	AID	FUDECO	BENEF.	AID	FUDECO	BENEF.	AID	FUDECO	BENEF.
1.0 Water System													
1.1 Personnel	A-1	58,988	57,200		64,875	62,925		51,100	150,300		174,963	270,425	
1.2 Training	B-1	46,179	15,393		49,874	16,624		53,864	17,954		149,917	49,971	
1.3 Materials, Tools and Equipment	C-1	1,067,425	374,188	48,400	1,204,700	483,425	41,910				2,272,125	857,613	90,310
2.0 Latrines													
2.2 Training	B-5	14,416	4,804		15,570	5,188		16,815	5,603		46,801	15,595	
2.3 Materials and Tools	C-5	222,008	74,003	58,850	239,773	79,915	63,553	192,132	64,060	50,933	653,913	217,978	173,336
3.0 Child Survival													
3.1 Personnel	A-2	100,100	118,688		110,100	130,525		136,475	197,125		346,675	446,338	
3.2 Materials and Supplies	C-2	127,350	42,438								127,350	42,438	
3.3 Training	B-2	118,767	39,591		128,268	42,759		138,530	46,179		385,565	128,529	
4.0 Home garden													
4.2 Training	B-6	40,304	13,429		43,528	14,503		47,010	15,663		130,842	43,595	
4.3 Seeds and Organic Materials	C-6	113,456	37,913		132,375	45,500		136,581	44,050		382,412	127,463	
5.0 Reforestation													
5.1 Personnel	A-3	29,488	27,525		32,450	30,263		51,125	47,725		113,063	105,513	
5.2 Training	B-3	57,988	19,329		62,627	20,875		67,637	22,545		188,252	62,749	
5.3 Plants and Materials	C-3	261,250	2,658	1,020	261,250	2,658	680	261,250	2,658	340	783,750	7,974	2,040
6.0 Soil Conservation													
6.1 Personnel	A-4	29,488	27,525		32,425	30,263		51,100	47,713		113,013	105,501	
6.2 Training	B-4	77,594	25,863		83,802	27,932		90,506	30,166		251,902	83,961	
6.3 Materials and Tools	C-4	54,765	18,256	116,640	127,785	42,595	272,160	182,550	60,850	388,800	365,100	121,701	777,600
7.0 Lorena Stoves													
7.2 Training	B-7	34,404	11,466		37,156	12,384		40,129	13,374		111,689	37,224	
7.3 Materials and Tools	C-7	106,160	35,385		79,620	26,539		79,620	26,539		265,400	88,463	
8.0 Administrative Expenses													
8.1 Personnel	A-5	206,013	125,563		201,538	163,200		213,588	337,275		621,139	626,038	
8.2 Fuel and Maintenance	C-8	154,775	154,775		167,157	167,157		180,530	180,530		502,462	502,462	
8.3 Materials and Supplies	C-8	45,192	17,133		45,192	17,133		45,192	17,133		135,576	51,399	
8.4 Perdiem and Lodging	C-8	52,208	20,829		52,208	20,829		52,208	20,829		156,624	62,487	
8.5 Telecommunications	C-8	48,358	19,325		48,358	19,325		48,358	19,325		145,074	57,975	
8.6 Remodel Training Center	C.8.2	142,000									142,000		
9.0 Evaluation													
10.1 Initial Evaluation		12,000									12,000		
10.2 Annual Evaluation		19,250			19,250			19,250			57,750		
10.3 Auditors		62,500			62,500			62,500			187,500		
TOTAL DIRECT COST		3,302,426	1,283,279	224,910	3,302,381	1,462,517	378,303	2,218,050	1,367,596	440,073	8,822,857	4,113,392	1,043,286

FUNDACION PARA EL DESAROLLO COMUNITARIO, INC. -FUDECO-
CASH FLOW
AMOUNTS IN US$

COMPONENTS EXPENSES	MONTHS 1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
1.0 Water System													
1.1 Personnel	363	363	363	363	363	363	363	363	363	363	363	722	4,715
1.2 Training				1,847					1,847				3,694
1.3 Materials, Tools and Equipment		26,558	10,589	10,589	5,294	16,139	6,490	6,490	3,245				85,394
2.0 Latrines													
2.2 Training		105	105	105	105	105	105	105	105	105	105	105	1,155
2.3 Materials and Tools		1,615	1,615	1,615	1,615	1,615	1,615	1,615	1,615	1,615	1,615	1,615	17,765
3.0 Child Survival													
3.1 Personnel	617	617	617	617	617	617	617	617	617	617	617	1,225	8,012
3.2 Materials and Supplies		5,094		2,038		2,038		1,019					10,189
3.3 Training		864	864	864	864	864	864	864	864	864	864	864	9,504
4.0 Home garden													
4.2 Training		293	293	293	293	293	293	293	293	293	293	293	3,223
4.3 Seeds and Organic Materials		825	825	825	825	825	825	825	825	825	825	825	9,075
5.0 Reforestation													
5.1 Personnel	182	182	182	182	182	182	182	182	182	182	182	361	2,363
5.2 Training		464	464	464	464	464	464	464	464	464	464		4,640
5.3 Plants and Materials		10,450	6,270	2,090	2,090								20,900
6.0 Soil Conservation													
6.1 Personnel	182	182	182	182	182	182	182	182	182	182	182	361	2,363
6.2 Training		621	621	621	621	621	621	621	621	621	621		6,210
6.3 Materials and Tools		2,191	1,314	438	438								4,381
7.0 Lorena Stoves													
7.2 Training		275	275	275	275	275	275	275	275	275	275		2,750
7.3 Materials and Tools		2,548	1,699	849	849	849	849	849					8,492
8.0 Administrative Expenses													
8.1 Personnel	1,269	1,269	1,269	1,269	1,269	1,269	1,269	1,269	1,269	1,269	1,269	2,522	16,481
8.2 Fuel and Maintenance	615	1,263	615	1,263	615	2,377	615	1,263	615	1,263	615	1,260	12,379
8.3 Materials and Supplies	301	301	301	301	301	301	301	301	301	301	301	301	3,612
8.4 Perdiem and Lodging	348	348	348	348	348	348	348	348	348	348	348	348	4,176
8.5 Telecommunications	322	322	322	322	322	322	322	322	322	322	322	322	3,864
8.6 Remodel Training Center		5,680	5,680										11,360
9.0 Evaluation													
10.1 Initial Evaluation	480	480											960
10.2 Annual Evaluation											770	770	1,540
10.3 Auditors					2,500							2,500	5,000
TOTAL DIRECT COST	4,679	62,910	34,813	27,760	20,432	30,049	16,600	18,267	14,353	9,909	10,031	14,394	264,197

E. TITLE TO PROPERTY

Title to all property shall be in accordance with the "Required as Applicable" Standard Provisions for Non-U.S., Non-governmental Grantees Provisions entitled "Title To and Use of Property (Grantee Title)".

F. SPECIAL PROVISIONS

See Attachment 5

G. AUTHORIZED GEOGRAPHIC CODE

The authorized geographic code for procurement of goods and services under this Agreement is Geographic Code 000 and the Cooperating Country.

ATTACHMENT 2

A. PROGRAM DESCRIPTION

1. SUBPROJECT PURPOSE

The subproject purpose is to help resolve the immediate needs of the low-income people that live in subsistence conditions on the Dominican border, by providing technical assistance and resources that contribute to improvements and self-sustainability through improved health services and natural resources administration.

The subproject is based on an integrated approach to development in order to benefit 80 communities of the Dajabón, San Juan de la Maguana and Elías Piña Provinces. It introduces activities in child survival, potable water, sanitation, hygienic education, nutrition, reforestation, soil conservation and Lorena stoves to reduce firewood consumption.

The appropriate combination of the components in each community is decided by joint agreement among the beneficiary associations and FUDECO. Assistance levels that are presented in this document faithfully reflect the communities' health and natural resource needs that should be addressed.

2. PRINCIPAL PROBLEMS AND COMMUNITY DEMAND:

Sub-project interventions are aimed at responding to a series of problems that have traditionally affected the lives of border residents. Their principal manifestations are the following:

a. Absence of potable water in homes that obliges residents, especially women and children, to walk up to two and three kilometers to collect water from contaminated locations.

b. Inadequate sanitary conditions and lack of hygienic information that propagate gastrointestinal diseases.

c. High incidence of diarrhea and respiratory illness among children under 5 years of age, in addition to disinformation on adequate breast-feeding and maternal-child nutrition practices.

d. Low nutritional levels in the population and inadequate use of available nourishment due to the obsolescence of traditional farming systems and the lack of nutritional education.

e. Increasing deforestation due to indiscriminate harvesting of trees for energy consumption.

f. Increasing loss of soil productivity due to inappropriate farming practices that reduce fertility.

The geographic incidence of the above problems and, therefore, of project implementation, are the Provinces of Dajabón, San Juan de la Maguana and Elías Piña. These border regions with their sandy degraded soil, dry forests, and growing deforestation contains 7% of the total population of the country, and of this, 94% live in rural zones.

The land is underutilized for agricultural purposes, as illustrated by the fact that of 112,000 potentially arable hectares, only 30,000 are irrigated. However, Dajabón has important surface water resources available while the areas around Elías Piña and San Juan de la Managua, have significant underground water deposits.

These characteristics, added to an unemployment rate of 31.6% (Plan de Desarrollo de la Zona Fronteriza-STP, 1987) and an infant mortality rate between 55.8 and 70.7 deaths per 1000 births for children less than 5 years old for the region VII and VI according to ENDESA-91, have influenced the selection of this zone for project implementation. FUDECO's long involvement in the development of the region has resulted in good will and the formation of community associations which were passive and accustomed to paternalism.

These associations form the institutional mechanism that communities have designed in order to make their needs known. Problems are discussed and priorities are given hierarchy so that results can be planned. FUDECO interprets these demands with a programmatic sense and offers technical assistance to help communities translate their expectations into project proposals. All of the activities included in the present proposal respond to initiatives from communities and reflects the prioritization that they have suggested to the institution.

3. GENERAL SUBPROJECT DESCRIPTION

The order of priorities is reflected in two subprojects, primarily Health and Natural Resources management. The principal objective of the Primary Health Subproject is to increase local capacity to prevent and resolve health problems related to water contamination, bad hygiene habits, unsanitary conditions and malnutrition. The subproject has five (5) principal activities:

a) Construction of Water Systems for provision of potable water to homes.
b) Environmental sanitation whose basic component is latrine construction to improve sanitary conditions in the home. Only ventilated pit latrines will be constructed.
c) Hygienic Education in order to disseminate basic ideas of sanitary and hygienic personal care.

d. Child Survival to create a network of preventative health promoters among the communities to help them address health issues such as diarrhea, child growth, post-natal care, breast-feeding, immunizations and child-spacing.
e) Nutrition to disseminate information on the use and combination of available foods, the promotion of family gardens and the production of foods rich in vitamin A.

The principal objective of the Natural Resources subproject is to help conserve and restore local ecological microsystems by introducing sound agroforestry practices, protecting the river basins against deforestation, increasing soil quality and reducing the indiscriminate harvesting of trees. The subproject is comprised of the following interventions:

a) Reforestation of river sources, hillsides, neighborhood walkways and schools.
b) Soil Conservation with the introduction of agroforestry systems that reduce soil erosion and increase agricultural productivity.
c) Lorena Stoves to reduce firewood consumption during food preparation and avoid health problems related to smoke inhalation and burns.

The above activities will be implemented by the communities with technical assistance from FUDECO in training, planning, financial control and delivery of materials.

4 EXPECTED CONDITIONS AT PROJECT END

At its conclusion, the project will have improved the human community in two senses (see also D.2 and D.4). First, it will have created community preventative health teams capable of identifying, preventing and controlling health impairments caused by the ingestion of contaminated water, the incidence of gastrointestinal infections, the lack of knowledge of breast-feeding, and poor personal and family hygiene and nutrition. These teams will be formed by all of the community promoters and facilitators involved in the program, plus their beneficiaries and trained to continue administering the health system.

Second, the project will have trained hundreds of small agricultural producers in agroforestry techniques that will permit them to improve agricultural soil productivity without affecting immediate or medium-term environmental conditions. The demonstrated effect of such knowledge will also stimulate increased awareness by agricultural producers on the importance of restoring and maintaining a healthy environment which allows both current and future generations of producers to satisfy their food needs or produce excesses for the market, without having to return to cultivation practices that degrade the land and reduce soil productivity.

These general conditions will be obtained jointly with the achievement of sustainable changes in the following:

- 600 families with potable water
- Construction of 600 latrines
- __% diaherrea cases attended for children under 5 years
- 3,500 pregnant women receiving breast-feeding training
- 3,500 fertile women receiving family planning training
- 1,400 family gardens
- 4,600 ta. using soil conservation and 4,290 ta. reforested
- 1,000 using improved fuel efficient stoves
- 50 km of live fences

B. BENEFICIARIES

1. SPECIFIC GROUPS OF BENEFICIARIES

We have estimated that around 32,800 people will benefit directly and indirectly from the project.

The subject population is made up of associations, individuals, homes or communities, according to the intervention. Within this category direct beneficiaries are individuals or groups that receive material or financial resources, skills development or services as a result of the project. Indirect beneficiaries are those groups or individuals that a receive a secondary benefit, and over whom the project will eventually have some impact.

One example illustrates both categories: a group of farmers is selected to participate in an intensive agricultural program (direct beneficiaries), and upon their return to their communities they share the new knowledge with other farmers (indirect beneficiaries).

The association with whom FUDECO mostly works are of three general types: a) agricultural producer associations, the majority made up of men; b) women's associations, clubs or groups; and c) youth organizations or clubs. Within these groups the following types of beneficiaries stand out: a) subsistence farmers; b) women of fertile age; c) pregnant women; d) older men and women; f) youth between 14 and 19 years old; g) children under 5 years of age; and h) children between 6 and 14 years of age.

Projects near homes primarily deal with water, sanitation, nutrition and reforestation. This encompasses the following categories: a) homes with or without latrines; b) homes with or without reduced energy consumption stoves; c) homes located in aqueduct conveyance lines; and d) homes with suitable agricultural spaces.

Communities are segregated into 4 types: a) communities according to geographic location; b) communities according to service access and

availability; c) communities according to number and type of community associations; d) communities according to populational composition and housing volume.

The specific number of direct and indirect project beneficiaries is as follows:

- 3,600 direct beneficiaries through access to 9 aqueducts by 600 homes, distributed between Dajabón (5 aqueducts) and Elías Piña (4 aqueducts).
- 300 mothers will be trained in order to provide child survival interventions to 3,500 residents.
- 8,400 community residents will directly benefit from the introduction of 1,400 family gardens that will elevate the family's nutritional levels.
- 3,600 people will benefit from the construction and rehabilitation of 600 latrines.
- 1,500 small farmers will receive training in agroforestry techniques with 60 demonstration plots installed.
- 6,000 residents will benefit from the construction of 1,000 improved stoves.
- 3,000 people will directly benefit from hygiene education and 6,000 indirect beneficiaries will enjoy collateral well-being.

FUDECO operates in communities with the following criteria: a) people with difficulty in accessing goods and services; b) people with a monthly family income less than RD$1,500; c) people that live without potable water or sanitary services; and d) people that are currently or potentially exposed to nutritional and health problems. At the individual level, the typical subject with which FUDECO is associated is a small farmer who owns less than an average of 0.4 hectares and doesn't have access to agricultural credit; his land isn't irrigated and productivity is at the subsistence level, using primitive technology; is illiterate, has a five member family; and lives in a house made of zinc, palm or wood, usually with an earth floor, without electricity, water or drainage.

Specific Impact on Women: The project will produce the following changes in the population:

- The introduction of water and the stimulation of food production in the home will have a profound influence in the lives of women, since a) women are responsible for their care,; b) children show an interest in helping their mothers and learn farming techniques early; c) the men eventually accept the domestic productive work of the women in good faith, recognizing their contribution to feeding the family and breaking traditions that limit women's capabilities; d) The women are permitted to assume greater control over family nutrition and generate additional income which compensates for the waste, which as a general rule, the men incur in chicken fights and alcoholic beverages; and e)

generate self-esteem among women demonstrating that, contrary to tradition, they can be and are productive members of the community.

- The child survival component introduces an equally innovative aspect since it conceives of the rural woman as a health promoter agent, in charge of taking care of community residents. An altruistic presence of greater collective scope is added to the woman's traditional role in the home. Additionally, another reinforcement is introduced, consisting of rural school-age children collaborating with the mothers in the role of child health promoters for the attention of infants. With time, this will establish an active movement of children and youth, preoccupied by the problems in their communities having stronger community links and better trained so as to avoid emigration at more advanced ages.

- Project progress will be reported by gender.

2. SELECTION CRITERIA

The criteria for beneficiary selection are the following:

a) Self-selection by the communities themselves. The communities propose projects to FUDECO through their associations. The associations select the beneficiaries of said projects, and submit the proposal to FUDECO.

b) FUDECO Selection. Conforming to the communities' self-selection, FUDECO bases project approval in needs analyses, technical studies, and feasibility and social cost-benefit criteria. The final decision and the start date of the projects depends on the approval and disbursement of the financing since it is FUDECO's policy to avoid a rise in expectations that cannot later be satisfied.

3. COST PER BENEFICIARY

The approximate costs per beneficiary for each activity are presented below. One column projects the total direct beneficiaries while the other indicates cost per individual:

Concept	# Direct Beneficiaries	In US$ Cost Per Beneficiary
Aqueducts	3,600.00	83.70
Sanitation	3,600.00	23.20
Child Survival	3,500.00	32.50
Nutrition (Family Gardens)	8,400.00	6.00
Reforestation and Soil Conservation	2,700.00	63.10
Improved Stoves	6,000.00	6.20
TOTAL	27,800.00	214.70

The beneficiaries of other communities not directly involved in the subproject will be described later.

C. SUBPROJECT DESIGN AND IMPLEMENTATION

1. IMPLEMENTATION PLAN

The implementation process is to be completed in eight phases: a) Subprojects selected among the requests; b) Community notification; c) specific information gathering by community; d) training of subproject directors; e) delivery of materials; f) subproject implementation; g) training for subproject sustainability; and h) FUDECO follow-up and retirement.

a. Project Selection

The preparation, presentation and approval of the subproject requests from the associations follows specific procedures:

i) The association presents the subproject request to the Area Office.

ii) A technician from the Area Office visits the association to verify information.

iii) The request is then sent to FUDECO's Central Office in Santo Domingo, accompanied by the following:

- Preliminary technical data on project viability
- Detailed financial plans
- Beneficiary relationship
- Association's history

Each request is reviewed by the following entities:

* The group to which interested members belong
* The Community Council or Farmer's Board which is integrated in the base organization.
* FUDECO's Area Coordinator
* The Central Office

If the financing is obtained and the Central Office approves the project, the approved amount is sent to the Area Office.

b. Community Notification

After project approval, a technician from the area visits the association to inform them of the decision. This step is only completed if financing has been assured to avoid creating false expectations among the residents. FUDECO is particularly careful not to generate initiatives, and only reacts to requests that arise from the needs felt by the beneficiaries.

c. Beneficiary and Training

After the participants are organized, the area technicians impart pertinent training to each project. These generally take place in the CAOTACO (as is described in another part), although also on site, according to the characteristics of the place.

d. Delivery of Materials

Materials are of two types. First, construction materials for hydraulic, sanitation and reforestation interventions. Second, didactic materials for hygiene, child survival, nutrition and some aspects of soil conservation. Procurement of materials not located in the project area is done through the Central Office. Residents contribute local materials and manual labor without any remuneration.

e. Project Implementation

Once the work brigades or community health teams are organized, activities are initiated according to established schedules. The associations assure completion of work assigned individually to the members; FUDECO offers required technical assistance.

f. Training for Subproject Sustainability after its Termination

Beneficiary maintenance brigades and rules are two of the principal vehicles for subproject sustainability. These require negotiation and commitment by associations which are strengthened by technical and administrative assistance from FUDECO.

g. FUDECO's Follow-up and Retirement: Community Self-Administration

After reaching a certain point of beneficiary development FUDECO's presence diminishes after an intense period of follow-up giving the subprojects time to initiate self-administration. The post-facto evaluation indicates the degree of self-sustainability achieved by the communities.

2. TECHNICAL ASSISTANCE

The Grantee will provide technical assistance in the following:

a. PRIMARY HEALTH

AQUEDUCT CONSTRUCTION

- Use of portable laboratory for the completion of water quality analyses.
- Training in basic plumbing techniques and canal construction.
- Aqueduct management, including use and maintenance of decompression chambers, reserve tanks and domiciliary spigots; also methodologies for use and service coverage regulations.

SANITATION

- Training in basic masonry and plumbing.
- Training in design, construction and use of dry pit latrine.

HYGIENE

- Training in dental care, waste management, personal hygiene, food preparation and water usage for human consumption.

CHILD SURVIVAL

- Use of scales and interpretation of growth rates
- Description, explanation and use of flip charts.
- Management of growth cards and supervision notebooks
- Management and interpretation of nutritional levels and uses of the nutrient pictures.
- Adequate breast-feeding and weaning practices.
- Pre-natal orientation.
- Birth spacing, birth control methods, and risks of venereal disease.
- Vaccination timing and vaccine types.
- Use and preparation of oral rehydration salts and domestic salts.

NUTRITION

- Horticultural production.
- Food storage techniques

b. NATURAL RESOURCE ADMINISTRATION

REFORESTATION

- Reforest 2000 tareas of watersheds
- Plant 2200 tareas of fruit-trees
- Production of fuelwood on 6 farms (500 tareas)
- 50 km of live fences

SOILS CONSERVATION

- Construction of demonstration plots
- Use of agroforestry techniques

IMPROVED STOVES

- Maintenance and construction techniques
- Food preparation techniques

Technical assistance will be provided by FUDECO's regional personnel. Nevertheless, additional personnel should be recruited (See proposal section) in view of the fact that the volume of anticipated work exceeds the current established capacity. For an example of the type of support that FUDECO hopes to find in other specialized agencies, see A.7.

3. BENEFICIARY COMMUNITIES

The communities directly benefitting from the subproject are:

a. AQUEDUCTS

SAN JUAN DE LA MANAGUA AND ELIAS PIÑA

- Las Palmitas
- La Jagua
- Isidro Martinez
- Carrera

DAJABON

- Jenibre
- Cajuil
- Penita Arriba
- Palo Colorado
- Las Rosas

b. SANITATION

SAN JUAN DE LA MANAGUA AND ELIAS PIÑA

- La Jaguita
- Los Jobos
- Las Carreras
- Higuerito

- Palo Seco
- Olivero
- Pinzon
- Isidro Martinez
- Pan de Azucar
- Vallecito
- La Guama
- San Jose
- La Rancha
- Escondido

DAJABON

- Jenigbre
- Ceiba de Bonet
- La Luisa
- La Jagua
- Manuel Bueno
- El Aguacate
- Monte Higo
- km. 1 Abajo
- Valle Nuevo
- Trinitaria
- Agua Blanca
- El Cadillar

c. HYGIENE

SAN JUAN DE LA MANAGUA AND ELIAS PIÑA

- El Salto
- Caralinda
- Estrellita
- Potro Balnce
- Rio del Padre
- Los Molinos
- La China
- Corocito
- La Mocha
- Los Pinalitos
- La Lomita
- La Angola
- La Ermita
- Cana Segura
- Pajonal
- La Piedra
- El Pinalito
- El Pinal
- Guayacan
- Carrera de Yeguas
- Los Penazcos

DAJABON

- Aminilla
- Baboso
- El Rincon
- Guayabito
- Cabeza de Toro
- Corral Grande
- Clavelina
- El Capacito
- El Rodeo
- Pinal Claro
- Barrigon
- Machete
- La Brena
- La Cienaga
- Chacuey
- La Culata
- Mata de Limon
- Los Indios
- Pastor

d. CHILD SURVIVAL

SAN JUAN DE LA MANAGUA AND ELIAS PIÑA

- Los Paredones
- La Palmita
- Carrera de Yeguas
- La Jagua
- Los Molinos
- La Vereda
- Juan Garcia
- Asiento de Miguel
- Los Votao

- Los Alejos
- Naranja Dulce
- La Guazara
- Pinar Grande
- Sabana de la Loma
- La Ermita
- Sabana Puna
- Pinal de Cuello
- Los Pinalitos
- Loma en Medio
- Rancho de la Guardia
- Canada Honda
- Los Saladillos

DAJABON

- Aminilla
- Baboso
- El Rincon
- Guayabito
- Cabeza de Oro
- Corral Grande
- El Capacito
- El Rodeo
- Pinar Claro
- Barrigon
- Estancia Vieja
- Machete
- La Brena
- Clavellina
- La Cienaga
- Chacuey
- La Culata
- Mata de Limon
- Los Indios
- Pastor
- La Horca

e. NUTRITION (FAMILY GARDENS)

SAN JUAN DE LA MANAGUA AND ELIAS PIÑA

- Ranchito
- Naranjo
- La Mula
- La Rancha
- Isidro Martinez
- Jiguerito
- San Jose
- Vallecito
- La Guama
- Olivero
- Sabana Larga
- Los Alejos
- La Estancia
- La Meseta
- Angostura
- El Pinalito
- Guayacan
- Carrrera de Yeguas
- Cana Segura
- Los Pinalitos
- Los Penazcos
- La Lomita

DAJABON

- Jenibre
- Pueblo Nuevo
- Penita Arriba
- Palo Colorado
- Las Rosas
- Monte Grande Arriba
- Monte Grande Abajo
- Los Cerezos
- Ceiba de Bonet
- La Luisa
- Manuel Ramon
- El Aguacate
- El Cadillar
- Monte Higo
- El Cajuil

f. REFORESTATION AND SOIL CONSERVATION

SAN JUAN DE LA MANAGUA AND ELIAS PIÑA

- Pinzon
- Ranchito
- El Narano
- Los Arroyos
- Higuerito
- Pan de Azucar

DAJABON

- Jengibre
- Ceiba de Bonet
- La Luisa
- La Jagua
- Manuel Bueno
- El Cadillar
- Monte Higo
- Monte Grande
- El Aguacate
- El Carrizal
- km 1 Abajo
- Capotillo
- Guayabito

g. IMPROVED STOVES

SAN JUAN DE LA MANAGUA AND ELIAS PIÑA

- Ranchito
- Sabana Mula
- La Sierra
- La Jaguita
- La Rancha
- El Naranjo
- Olivero
- La Meseta
- Angostura
- Higuerito

DAJABON

- km 1 Abajo
- Valle Nuevo
- Agua Blanca
- Trinitaria
- El Carrizal
- Los Cerezos
- Las Rosas
- El Hato
- Palo Colorado
- Clavellina
- La Cienaga
- Sabana Larga
- Monte Higo
- Manuel Bueno
- Mariano Cestero

4. MONITORING PLAN

The subproject control and follow-up (monitoring) process will be completed before, during and after the interventions as follows:

a. AQUEDUCT CONSTRUCTION

BEFORE SUBPROJECT IMPLEMENTATION

- Observation visit
- Group representative interview

- Water quantity measurements at the source during different seasons
- Water analysis
- Topographical mapping
- Community survey

DURING PROJECT IMPLEMENTATION

- Visits to organized group directors
- Community meeting
- Resident motivation
- Formation of Work Committees
- Assignment of Responsibilities
- Cleaning of paths to water source
- Compiling construction materials in the community
- Construction of Water Taps
- Ditch excavation and pipe installation
- Water deposit construction
- Public faucet installation
- Beneficiary training
- Project administration committee

AFTER SUBPROJECT IMPLEMENTATION

- Continue project administration
- Committee member training and discussion of payment alternatives for services
- Collect a minimum fee for maintenance

b. SANITATION

BEFORE SUBPROJECT IMPLEMENTATION

- Identify domestic units
- Interview heads of households
- Evaluate latrine conditions
- Estimate materials, manual labor and costs

DURING SUBPROJECT IMPLEMENTATION

- Beneficiary training in elementary masonry techniques
- Assignment of responsibilities and work schedules
- Obtain local materials
- Selection of construction site and initiation of excavations
- Latrine Construction
- Training on latrine care and hygienic aspects

AFTER SUBPROJECT IMPLEMENTATION

- Continuation of latrine maintenance with selective domiciliary visits.

c. HYGIENE

BEFORE SUBPROJECT IMPLEMENTATION

- Interviews of association representatives
- Detection of principal hygienic problems
- Setting of priorities and beneficiary identification

DURING SUBPROJECT IMPLEMENTATION

- Community meetings
- Day-long motivational and orientation meetings
- Distribution of basic training materials
- Hygienic education
- Delivery of donated hygienic equipment (toothbrushes)

AFTER SUBPROJECT IMPLEMENTATION

- Random sample selection of beneficiary families in order to verify progress and impact.

d. CHILD SURVIVAL

BEFORE SUBPROJECT IMPLEMENTATION

- Community detection
- Community survey
- Identification and prioritizing of problems

DURING SUBPROJECT IMPLEMENTATION

- Community selection
- Supervisor training
- Mother and child promoter training
- Register and supervision notebook distribution
- Establishment of a health information system
- Day-long motivational and orientation meetings
- Module implementation
- Distribution of community first-aid kits and assignment of responsibilities for their administration

AFTER SUBPROJECT IMPLEMENTATION

- Continuation of community health team
- Selective visits to certain associations to verify progress and impact.

e. NUTRITION

BEFORE SUBPROJECT IMPLEMENTATION

- Association identification
- Evaluation of nutritional conditions
- Selection of domestic units

DURING SUBPROJECT IMPLEMENTATION

- Motivation and orientation sessions
- Training on food use according to age periods
- Selection of homes for family gardens
- Training of women in cultivation and soil rotation techniques
- Delivery of fruit and vegetable plants and/or improved seeds
- Training in water management
- Food storage techniques

AFTER SUBPROJECT IMPLEMENTATION

- Review of randomly selected family gardens

f. REFORESTATION

BEFORE SUBPROJECT IMPLEMENTATION

- Identification of deforested zones
- Evaluation of restoration needs and strategies

DURING SUBPROJECT IMPLEMENTATION

- Selections of deforested areas and locations according to communities
- Purchase of plants for reforestation
- Identification of areas to be reforested and planting schedule
- Training in planting and maintenance

AFTER SUBPROJECT IMPLEMENTATION

- Periodic revision, together with the communities, of the reforested areas, until FUDECO's technical team is finished participating.

g. SOIL CONSERVATION

BEFORE SUBPROJECT IMPLEMENTATION

- Detection of degraded areas and/or intensive cultivation with inappropriate practices

- Evaluation of the state of natural resources

DURING SUBPROJECT IMPLEMENTATION

- Identification of workers and cultivation techniques
- Day-long motivation and orientation meetings
- Day-long meetings on appropriate agroforestry techniques
- Implementation of demonstration plots
- Day-long meetings to compare between agroforestry demonstration plots and those using inadequate technologies.

AFTER SUBPROJECT IMPLEMENTATION

- Periodic visits to demonstration and community plots.

h. LORENA STOVES

BEFORE SUBPROJECT IMPLEMENTATION
- Home visits and interviews with women
- Review current food preparation system
- Estimation of materials, manual labor and costs

DURING SUBPROJECT IMPLEMENTATION
- Community meeting
- Materials Gathering
- Training and stove construction
- Training in use and maintenance

AFTER SUBPROJECT IMPLEMENTATION
- Continued use and maintenance with periodic domiciliary visits.

5. TRAINING SCHEDULE

The contents of the training program are:

a. Horticultural Course

- Importance of vegetable gardens
- Definition and location of gardens
- Horticultural species:
- vegetable cycle
- characteristics
- control of diseases and pests
  planting standards
- equipment and tools
- practice in preparing the soil and managing the instruments
- planting and cultivation
- Collection, conservation, consumption and marketing
- Vegetable garden cultivation in animal feeding

b. Day-long Horticultural Meeting

- Nutritional value of a garden
- Site selection
- Tools that are use to prepare
- How to prepare seedbeds
- How to transplant
- Natural Pest control

c. Stove Use and Maintenance

- Methodology and objectives
- Origin of the Lorena Stove
- Advantages of the Lorena Stove
- Use of firewood and alternative combustion sources
- How to light it, cook and bake
- Impact of Lorena stoves on health and reforestation
- How to repair cracks and avcid deterioration
- How to clean it in order to maintain hygiene
- Observation visits at project termination

d. Day-long educational Meetings on Stove Construction

- Importance of appropriate technology in community development
- Materials to be used in block construction
- Block construction
- Stove planning and design
- Stove construction and design
- base construction

e. Natural Resource Conservation

- Natural Resource problems in the border region
- Deforestation and its consequences
- Organic fertilizer
- Erosion and its consequences
- Natural pesticides
- Agroforestry
- Advantages and disadvantages of agroforestry systems
- Nursery plant production
- Planting in plastic bags
- Bareroot planting

f. Educational day-long meeting on natural resource conservation

- Importance of natural resources
- Importance of agroforestry systems
- Green fertilizers in soil recovery
- Natural insecticides

g. Workshop on Natural Resource Conservation

- Exchange experience with technicians from related institutions

h. Day-long latrine session

- What are latrines and their purpose
- Types of materials used in construction
- Problems that are solved
  How they function and their uses
- Maintenance and costs

6. PROGRESS INDICATORS

Four aspects are relevant: intervention type, conditions at start, periodic conditions and conditions at subproject termination.

a. AQUEDUCTS

TYPE OF INTERVENTION: 9 gravity aqueducts will be constructed (5 in Dajabón and 4 in Elías Piña) that on average have a length of 3 kilometers.

CONDITIONS BEFORE PROJECT: The communities haul water from the closest source, that can be several kilometers away in some cases. Due to the lack of firewood and knowledge, water is not boiled, and is ingested contaminated causing serious health problems. This, impedes proper hygienic care related to personal cleanliness and food handling. In addition, the little water that is transported for food production is not sufficient for family gardens. Finally, home location depends on proximity to water, and as land ownership.

INTERMEDIATE CONDITIONS: The construction time for each aqueduct generally varies between 3 to 5 months from the time the technical design is completed until its termination. The principal times to measure implementation are during: 1. training; 2. brigade organization and work; 3. construction; 4. Introduction of water into the homes; 5. Maintenance brigades. It is difficult to time the phases, since they are subject to the aqueduct's size, the land's topography, the location of homes, etc.

CONDITIONS AT PROJECT END: The main water line will pass by the largest possible number of domestic units. Those farthest away will have already initiated measures to move themselves closer to the line or negotiated with the associations, to do so. A person responsible for maintenance will also have been selected, and fees designated.

Three aqueducts will be constructed per year of the project.

b. Environmental Sanitation

TYPE OF INTERVENTION: Construction of 600 dry type latrines.

CONDITIONS BEFORE PROJECT: Domestic units have latrines in deplorable conditions and/or the residents take care of their needs in the open. Fecal matter accumulates that is later deposited in food and water by the wind. The amount of deficient sanitary units is around 80%.

INTERMEDIATE CONDITIONS: Although initial training is provided to beneficiary groups, the work is individual and aided by FUDECO's mason. The most significant intermediary outputs are: 1. pit excavation; 2. base and toilet bowl construction; 3. shelter construction.

Each phase provides specific opportunities for beneficiary involvement, which promotes technical self-sustainability.

CONDITIONS AT PROJECT END: The home's environmental condition will be improved with addition of sanitary facilities, improved stoves, potable water and hygiene education. Beneficiaries will be responsible for latrine maintenance.

600 latrines will be constructed or rehabilitated with an average of 200 during each project year.

c. HYGIENE

TYPE OF INTERVENTION: Training in personal family and home hygiene in order to complement interventions in potable water, sanitation, child survival, nutrition, and improved stoves.

CONDITIONS BEFORE PROJECT: The absence of water hampers hygienic care, as well as food preparation. The use of "open hearths" means that smoke and ashes are deposited in all of the corners of the kitchen affecting the user's health. Everywhere, features are observed that reveal the absence of dental care, above all in children and adolescents.

INTERMEDIATE CONDITIONS: Two phases illustrate intermediate conditions: a) the improvements related to hygiene, resulting from other interventions; and b) the training imparted to family members, during project implementation.

CONDITIONS AT PROJECT END: Hygienic interventions "bind" the other health subproject components: a) water use and care; b) latrine use and care; c) food care and storage; d)waste management; e) home care; f) kitchen cleansing g) care in the preparation of oral rehydration salts.

In general terms, 33,000 community residents will benefit from this component.

d. CHILD SURVIVAL:

TYPE OF INTERVENTION: Growth and weight control; diarrhea and respiratory diseases control; breast-feeding; immunizations and birth-spacing.

CONDITIONS BEFORE PROJECT: Indiscriminate and generalized cases of diarrhea motivated by the continuous ingestion of contaminated water. Respiratory illness attributed to dust-storms and erosion. Lack of knowledge on breast-feeding techniques and early weaning. Misinformation on the sexual reproductive system and pregnancies. Ignorance of child illness as that can be avoided with immunization cycles.

INTERMEDIATE CONDITIONS: The facilitators and mother promoters will have received necessary training. Women will have been organized in associations. Child promoters will have been trained. The information system will have been established. Child Survival interventions' will have been initiated in each community. The community health team will have been formed, and will remain in charge of the subproject.

CONDITIONS AT PROJECT END: The community can detect, treat or refer cases of cited diseases. Women of fertile age or pregnant women will have broader knowledge on birth control methods and weaning techniques. A control and follow-up system will have been introduced for malnutrition cases. Around 90% of the children will have received doses of required vaccines.

In general terms, 300 mother promoters will be trained to cover a population of 2,000 children and 1,500 pregnant and fertile aged women.

e. NUTRITION

TYPE OF INTERVENTION: Family garden installation, food production (especially those rich in Vitamin A) and information on food storage and nutrition.

CONDITIONS BEFORE PROJECT: Underutilization of land in domestic units. Absence of information on balanced diet. Disuse of foods according to time of year. Lack of knowledge on the importance of Vitamin A for children.

INTERMEDIATE CONDITIONS: Training of women in horticultural production, harvesting, and storage. Introduction of drying techniques for fruit and foods rich in Vitamin A.

CONDITIONS AT PROJECT END: Self administration of home gardens. Understanding of fruit and vegetable drying techniques.

1,400 family gardens and several women's associations will be selected to initiate a pilot project in mango drying with the support of VITAL, USA.

f. REFORESTATION

INTERVENTION: Planting trees.

CONDITIONS BEFORE PROJECT: Deforestation of vast ranges. Loss of agricultural land. Growing desertification. Lack of protection of river valleys and sources. Indiscriminate harvesting of trees. General ignorance on ecological issues.

INTERMEDIATE CONDITIONS: Communities will be planting trees.

CONDITIONS AT PROJECT END:

- 2000 tareas of watershed reforested
- 2200 tareas of fruit trees planted
- 50 km of live fences
- 500 tareas of fuelwood species planted.

g. SOIL CONSERVATION:

INTERVENTION: Agroforestry techniques and demonstration plots.

CONDITION BEFORE PROJECT: Soil erosion and loss of productivity.

INTERMEDIATE CONDITIONS: Residents will be assimilating new agroforestry practices through courses, field days and practical work. Demonstration plots will be installed on hillsides and flat land.

CONDITIONS AT PROJECT END: The quantity and quality of water is improved; soil quality is improved; ecologic equilibrium is restored in great measure; and, demonstration plots will show production increases without degrading the soil.

h. LORENA STOVES

TYPE OF INTERVENTION: Introduction of reduced energy stoves constructed of mud and sand (Lorena).

CONDITIONS BEFORE PROJECT: Indiscriminate cutting of trees for firewood. Eye problems among women and children due to smoke. Incidence of burn cases in accidents provoked by the fragility of the "open hearth". Loss of heat in preparing food and growing demand for

firewood. Hygienic and environmental sanitation problems due to the accumulation of greasy smoke on kitchen walls.

INTERMEDIATE CONDITIONS: Training of women in elementary masonry principles. Stove installation. Training in their use and care.

CONDITIONS AT PROJECT END: Elimination of factors found at the start of interventions.

In general improved stoves will benefit around 7,200 people with the construction of 1,200 units. An average of 400 stoves will be constructed per year.

7. EVALUATION PLAN

The priority questions that will be taken into account for the evaluations are as follows:

- Relevancy: if some change has occurred in the objective or if the project has an instrumental role in achieving goals.

- Effectiveness: If the project is achieving what it aspires to achieve, and how.

- Efficiency: If the effects are obtained at the lowest possible cost and under the best socio-economic, institutional and technical conditions.

- Impact: If the changes are positive or negative, anticipated or not anticipated ("surprises").

- Sustainability: If the changes are sustained after project termination.

Evaluations will take place at:

- Project initiation, midterm and at the project end.

An indicator model has been designed that will facilitate measurement of results. Percentages and quantities expected will be established following the baseline evaluation.

a. PRIMARY HEALTH INDICATORS

- % of the population under age 5 covered by the program.
- % of attended diarrhea cases in the under age 5 population.
- Number of mothers trained in diarrhea control.
- Number of community first-aid kits distributed and the population covered.
- Number of trained child promoters and coverage range.

- % of children fed only with breast-milk
- % of children fed with breast milk and other foods
- % of children fed only with other foods.
- % of pregnant women who receive training breast-feeding.
- % of children vaccinated against tuberculosis, diphtheria, whooping cough, tetanus, measles and polio.
- % of fertile aged women immunized against tetanus.
- % of fertile aged women that have received some or all necessary family planning methods information.
- Number of children weighed each month.
- Number of families with potable water.
- Number of families with gardens.
- Number of families that have received home hygiene training.
- Number of domestic units with improved latrines.

b. NATURAL RESOURCE MANAGEMENT INDICATORS

- Number of plots that use soil conservation techniques.
- Number indirect beneficiaries who have adopted techniques introduced by the project.
- % of families that have incorporated fruit trees.
- Number of families that use improved stoves or other firewood saving methods.
- Number of farmers that have abandoned agricultural burning practices.
- Percent reduction in herbicide and chemical fertilizer use.
- Percent increase in food production due to new agroforestry techniques.
- Number of tareas by community and by year that have been improved with agroforestry techniques.

To arrive at these indicators, FUDECO depends on a computerized information system that is fed by two principal sources: continuous administrative records and community surveys.

D. SUSTAINABILITY AFTER PROJECT COMPLETION

To cover recurrent costs, after project termination, the communities establish a simple system for payment of services that assumes different forms according to the nature of the intervention. In the case of primary health, the interventions contemplate the distribution of medical units that function as self-financing micro-pharmacies, one in each community. For the maintenance of aqueducts, each beneficiary family will pay a monthly sum to a fund controlled by the organizations themselves. The family gardens are conceived primarily in order to complement the family's diet, but they can also produce an excess for sale.

Referring to subproject administrative capacity it is important to note that the implementation plan foresees that all activities will be

completed by the beneficiaries themselves, who jointly agree on a program of activities with FUDECO's regional personnel.

The communities refine skills through four steps: First, the transition from problem discussion and prioritization to the formalization of a project proposal to FUDECO; Second, work team selection, and assignment of responsibilities; third, work implementation according to intervention type; and fourth, maintenance brigade formation, or the equivalent at project termination.

In the completion of such obligations, technical abilities will be acquired. The beneficiaries will assimilate work methodologies, devised by themselves or suggested by FUDECO. These normally have to do with delivery procedures for local materials: identification of a qualified or semi-qualified work force, among the residents; timing of training and day-long work meetings, such that they don't alter the participant's productive activities; maintenance brigade selection and formation of mechanism for the use of the works. In this sense maintenance of technical aspects is crucial for project self-sustainability.

E. ENVIRONMENTAL CONSIDERATIONS

1. AQUEDUCTS

The aqueducts are designed so that the water is distributed by gravity. Average family consumption is calculated for both human consumption and vegetable crops.

Each family consumes an average of 300 liters per day. So as not to affect the capacity of the source, samples are taken in different times of the year, measuring the volume during the dry and rainy months. The information that residents offer about water flow is also significant.

Water distribution is calculated in proportion to the distribution of homes and an estimated consumption of 16 hours per day is considered. At night, water is stored in a deposit, since usage is practically nil. The quantity of water that flows through the fountain depends, naturally, on the amount of rainfall in the zone. As a general rule, measurements during the dry months produce optimal indicators since once the rainy period starts, the quantity of water triples and continues growing.

The principal variable that are taken into account to measure environmental impact and its affect on the population are availability of water, water consumption, chemical analysis, bacteriological analysis, total conduction length, reserve tank and sample taking.

The availability of water determines if the water source is apt to supply consumption needs. Water consumption alerts us regarding the volume of water that can be taken out without affecting the normal

flow. Chemical analysis determines if the water is apt for human consumption. Bacteriological analysis informs on the grade and type of contamination. The conduction length shows the distance that the aqueduct runs. The reserve tank stores the water during the night, and finally the water samples reveal if the usage should be for domestic or community use.

The principal problem facing aqueduct design is the danger of temporary contamination during the rainy season, which forces a choice between closed collection or open collection. The first involves excavations and construction of retention walls, while the second has water running through sand and gravel filters which requires that the water exits be left open and joined, protecting them against contamination. The completion of bacteriological analysis becomes necessary during long intervals with auxiliary tests.

- Beneficiary training

The protection of watersheds through soil conservation and reforestation will improve the quality and quantity of available water. Training the users in the management of the water system will result in the improvement of local micro-climactic conditions, translated into better sanitary conditions. Given that water delivery is calculated at 300 liters daily per domestic unit, the training acquires importance to avoid excessive use or loss.

The people who live below the water lines are considered indirect beneficiaries, since water is available at a closer distance. In view of the fact that not all of the water that arrives at the source is channeled through the aqueduct, there should always be a sufficient supply to satisfy all needs.

Since the aqueduct subprojects are regulated by statutes, an administrative committee requires that all families who plan to take advantage of the benefits must accept the conditions. They will also receive necessary training for efficient water usage.

During the implementation period, the users are subjected to a continuous training process in terms of use, management and maintenance. Once the project has terminated, the institution will continue reinforcement training, at the same time that the community assumes responsibility for maintenance.

The water projects are designed for actual domestic consumption that may include family gardens. The availability of water won't increase hillside farming because it will only be used for small gardens, not to irrigate hillsides.

- Future demand

Four thousand three hundred and twenty (4,320) people will benefit from aqueducts. It has been calculated that with a 1% growth in the number of users during twenty years of useful life, the new demand will be 5,314 people. In the northern zone, the annual average rate of subterraneous water recharge is 620 mm, while in the southern region it is 150 mm.

2. SANITATION (LATRINIZATION)

Latrines will reduce environmental contamination. Special care will be taken so that the sanitary interventions don't affect subterraneous or surface water, since the locations selected are generally dry.

The maintenance of the sanitary systems is assured through the training that FUDECO offers, which can continue once the project has terminated.

3. REFORESTATION

A positive environmental impact will result from the reforestation interventions near four river sources, inhabitated areas and demonstration plots.

Native and exotic species already adapted to the zone's climatological conditions will be used. After a forest species has been selected, the seeds will come from the same planting location.

Where farmers sow their fields alongside of rivers, FUDECO plans to establish strips of woody vegetation along each bank, to act as a sedimentation filter.

Even with the authority to commercially exploit forest species, it is possible to include some agricultural cultivation in reforested areas that yield economic dividends, such as banana, pigeon pea, yucca, etc.

In order to protect the reforested areas from the damaging presence of animals, un-appetizing species will be promoted. In high-risk areas, where agricultural crops and fruit trees are combined, animals will be isolated with the construction of fences.

The procedure that FUDECO has designed in order to avoid negatively affecting the environment is based on the consideration of five principal variables, that is, altitude, precipitation, soil type, tree utility and most common technical practices.

4. SOIL CONSERVATION

The most common planting systems used are traditional mono-cultivation and those that mix agriculture and forestry. Agroforestry techniques will be promoted that reduce soil erosion such as living barriers, dead

barriers, contour terraces, alley cropping, perennial crops, and vegetative cover.

The use of chemical or fertilizers will not be necessary nor is it FUDECO's policy to promote agrochemicals. In fact, the input store that operates in both CAOTACOs only sells livestock products and organic fertilizer. In fact an aspect of singular importance that concerns soil conservation interventions is that they always confront initiatives on the part of producers to use chemical fertilizers and pesticides. In order to avoid such practices, resistant plants and organic fertilizers will be promoted. The beneficiaries will be trained to use natural controls and organic pest management. The use of biocides with prolonged residual power will be avoided. Training will place emphasis on the knowledge and use of naturally occurring pesticides in order to substitute them for those of external origin, and will ensure also that they are correctly managed, which implies close collaboration with the health promoters. In this way, soil conservation interventions are related to the primary health program, primarily in relation to nutrition and control of chemical agents.