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PROJECT ASSISTANCE COMPLETION REPORT

MOSQUITIA RELIEF AND DEVELOPMENT PROJECT

(522-0278)

MOSQUITIA PROJECT ASSISTANCE COMPLETION REPORT

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PROJECT ASSISTANCE COMPLETION REPORT

I. BACKGROUND

A. The Mosquitia Region

The Honduran department of Gracias a Dios is a part of the region called the Mosquitia. The department is more commonly called the Mosquitia after its principal inhabitants the Miskito Indians, and it is this department to which this report refers by use of the term Mosquitia. Having neither a road connection to western Honduras nor a deep water port, the Mosquitia is a remote place and therefore has long been neglected by development efforts when compared to the country as a whole.

The Mosquitia comprises 20,450 square kilometers of humid, tropical lowland. Over seventy-five percent of the area is covered with tropical forests, 1,500 square kilometers are dense broadleaf jungle while 300 square kilometers are open, pine-savannah. Only 330 square kilometers of land in the Mosquitia are suitable for agriculture.

The majority of the soils in the Mosquitia contain heavy clays overlain with infertile, gravelly topsoils. Of the entire surface area of the Mosquitia only one percent is currently cultivated and the ultimate potential of arable land is limited. Not having benefited by modern technical advances in agriculture, traditional farming is practiced along the banks of rivers where soil texture and fertility are rejuvenated by annual floods. Farmers rely on a fairly complex rotation of a few basic grains and tubers (rice, beans, cassava) supplemented by a large assortment of annual and perennial fruits and vegetables. Some security against crop failure results from diversifying the mix of crops. Crop rotation helps to control pests and fallow periods revive the delicate soils.

The people of the region, in general, have received little formal education. Few job opportunities exist outside of those associated with agriculture. Alternative employment activities are limited to a few industries such as chicle gathering, lobster diving, and fishing. Little local industry has been established because export opportunities are nearly nonexistent. The closing of the border with Nicaragua deprived both Honduran and Nicaraguan Miskito and Sumo Indians of traditional employment opportunities and market outlets for basic farm cash crops. Thus, the average Miskito or Sumo must farm to subsist. Their present farming practices, under the constraints of delicate soils and seasonally excessive rainfall, must be carried out intensively. Crop loss through seasonal flooding is not uncommon.

After the 1979 revolution in Nicaragua, what little infrastructure and support services that had been available in the Mosquitia, were strained by an influx of approximately 25,000 Miskito and Sumo Indian refugees. This was nearly a 50% increase of the prerevolution population. During the time of the project, the United Nations High Commission for Refugees (UNHCR) was providing assistance to nearly 15,000 refugees in camps and settlements located away from the Nicaraguan border. People living outside the UNHCR supported area were not receiving any kind of assistance.

Unfortunately, the ecological system described above can not provide the increased productivity required by the pressures the refugee situation has caused. Most of the currently accessible arable land is being farmed. New areas are being opened by slash and burn techniques, thus causing degradation of valuable broadleaf forests followed by a steep decline in the fish and wildlife population. Inappropriate utilization of natural resources is being carried to the extreme and if allowed to continue, further degradation of the region is inevitable. There has been an alarming increase in the pressures on the narrow riparian strips of arable land. In sum, self-sufficiency in food production in the Mosquitia is short lived when it occurs.

B. Development of the Project

The Mosquitia Relief and Development Project was the result of a Congressional Mandate responding to the perceived needs of Miskitos and other minorities living in the Mosquitia. In August 1984 the U.S. Congress appropriated \$7,500,000 to the Office of Foreign Disaster Assistance for disaster assistance to Miskitos and Indian refugees in Honduras. The funds were to be obligated before September 30, 1984, and could not be used to support any activity against the Government of Nicaragua, as they were earmarked solely for humanitarian purposes. The legislation directed that the Agency for International Development administer the funds.

On November 15, 1984, A.I.D. authorized a grant of \$7,500,000 for Project No. 522-0278, the Mosquitia Relief Project and Development. To implement the Project activities, the Mission signed agreements with the Ministry of Health (MOH), the Ministry of Communication, Public Works and Transportation (SECOPT) and the International Rescue Committee (IRC). The Project activities consisted of three components; (1) Health, (2) Infrastructural Development and (3) Education. The original PACD of December 31, 1986 was amended to December 31, 1987.

The Health Component of the Mosquitia Project was authorized on November 18, 1984, for a total of \$3.8 million. Activities were directed toward providing the Mosquitia region with humanitarian relief through the Ministry of Health. This component included immunization, malaria vector control activities, an environmental health program and health infrastructure development.

The Infrastructure Component was authorized separately on December 5, 1984, for \$2.4 million. The component consisted of rehabilitation and maintenance of the local transportation network including construction of a bridge over the Rus-Rus river, construction of three smaller bridges, 13 bridge repairs, road maintenance and canal rehabilitation.

The Educational Component agreement was signed with IRC on July 22, 1985, for \$900,000. The component included installation of a radio station for transmission of education programs, in Miskito and Spanish languages, for children and adults.

II. HEALTH COMPONENT

The Health Component was divided into two phases: Phase I was placement of two medical teams into the area to respond to immediate health needs and to gather information to plan longer term activities. Phase II was to reach most of the population of the area with three activities; health infrastructure development, malaria control and environmental health.

Activities for Phase I, initiated during November 1984, included planning of procurement and hiring of personnel. Equipment, including three pick-up trucks needed for the medical sweeps, was delivered to the area in a C-130 transport plane during a U.S. Air Force training exercise. On January 25, 1985, two medical teams including doctors, nurses, social workers and drivers, with the appropriate equipment, initiated a series of visits to the communities along the Kruta and Coco Rivers. The communities were not receiving assistance from UNHCR or any Honduran institution. These teams operated until they were replaced by project-supported MOH staff in the Mosquitia the following June.

During the first half of 1985, the medical teams carried out the following activities:

Number of communities attended	50
Number of people in these communities	12,428
Number of patients attended by a doctor (some people were seen more than once)	19,474
Number of children attended (less than 5 years of age)	4,982
Number of children (less than 5 years old) with diarrhea	726
Number of patients with respiratory problems	440
T.B. patients attended that had discontinued their T.B. treatment	108
Blood test provided to patients with fever	502
Positive malaria test	91
Prenatal care	679
Post-delivery care	56
Immunization (less than 5 years old)	3,223
Polio	1,156
D.P.T.	1,031
Measless	979
B.C.G.	1,036
Toxoide T.	38

A. Status of the Health Component

Recent reports from the Mosquitia indicate that the health clinics are supplied with medicines and are functioning. The Health Component was extended in August 1988 to provide the Puerto Lempira Hospital with some additional equipment not contemplated under the original project and to assist the Ministry of Health in miscellaneous activities. As an example, a small kitchen and laundry were built along with installing the water

pump that a Ministry technician was supposed to have completed. The Mosquitia Health region will have an uphill struggle each year to gain its share of the national budget. From a political perspective, the Mosquitia is not as important as other departments in Honduras, because its population is very small in comparison with other departments.

B. Health Infrastructure

The Mosquitia region needed a series of health centers and supply storage facilities to provide adequate health care to the area. The first contract for this activity was for the construction of two warehouses in Puerto Lempira and a health clinic in Auasbila. The warehouses were needed to store goods that would be arriving for the project activities and in the long-term for miscellaneous commodities. The clinic in Auasbila was needed to provide services in an area which had a growing population with the arrival of refugees but was void of any medical facility. Construction of the clinic was completed in July 1986. The second contract was for the construction of four health centers in the communities of Barra Patuca, Yahurabila, Laka Tabila and Raya. These centers were completed in May 1987.

The MOH staff in the Mosquitia, with support from the regional office in Tegucigalpa, requested construction of an area hospital in Puerto Lempira. Puerto Lempira was selected as the site for construction of a hospital mainly because it is accesible by road, sea and air.

Equipment for the hospital was donated by International Health Services of Minneapolis, Minnesota. The equipment received is for a typical "MASH" field hospital unit.

A modest residence for a surgeon was included as part of the hospital construction. The residence is an incentive for the doctors to make a longer commitment to the work in this remote location.

According to projections by the MOH, during 1988, the first year of operation, the Puerto Lempira hospital will treat 22,750 people in the outpatient clinic, 1,000 children will be admitted to the hospital, 730 women will be assisted in gynecology and 240 surgeries will be performed. The MOH has made a long term commitment to the Puerto Lempira hospital and the Honduran Congress passed a resolution assigning L 507,700 each year for the hospital's operation.

Before the Ministry of Health Hospital in Puerto Lempira was completed, the only facility in the Mosquitia capable of performing limited surgery was the Moravian Hospital located in Ahuas on the Patuca River. Ahuas is, unfortunately, inaccessible to most of the population in the Mosquitia.

Tabulation of Completed Health Infrastructure

<u>Health Infrastructure</u>			
<u>Year Completed</u>	<u>Construction</u>	<u>Location</u>	<u>Cost Lempiras</u>
1985	Area Offices	Teguigilpa	9,454
1986	Warehouses (2)	Puerto Lempira	309,628
1986	Health Center	Ahuasbila	45,300
1986	Health Center	Yahurabica	120,765
1986	Health Center	Laka	127,586
1986	Health Center	Barra Patuca	120,765
1986	Health Center	Raya	135,363
1987	Area Hospital	Puerto Lempira	937,652
1987	Vehicle repair shop	Puerto Lempira	7,608
1987	Area Offices	Puerto Lempira	35,030
1987	Health Center	Brus Laguna	34,905

C. Vector Control

Malaria is transmitted by mosquitoes biting an infected person, then biting a healthy person. It is important, therefore, to locate people infected with malaria and medicate them to prevent infection of others by the carrier. This is a difficult task because the Miskito population is very mobile.

Mass medication programs, properly applied, are highly effective in causing an abrupt drop in the incidence of malaria. These programs do not, as a rule, provide long-term results. The timing of the medication cycle, in relation to the cyclical rise and fall of malaria incidence, is very important.

Before this project was initiated, vector control activities in the Mosquitia started with support from UNHCR. The UNHCR activities consisted mainly of spraying houses with Baygon mass medication, case finding and treatment.

During the life of the project, mass medication was scheduled to protect the population at the height of the incidence of malaria, which is from May to November during the rainy season, and during the periods in which the population moves about to attend regional meetings, etc. The medications used under the A.I.D. financed project were primaquine and cloroquine.

Spraying of houses:

Spraying the walls of houses with residual insecticide is the traditional method of malaria control. Baygon has been determined to be the most effective insecticide available and for that reason was selected for use in the Mosquitia. The three potential vectors in the Mosquitia, the Anopheles Albimanus, the Crucian and the Gabaldoni, are all susceptible to this product.

One spraying was scheduled in each of ten communities during 1985. This resulted in the spraying of 1,479 houses. Two sprayings were performed during 1986, resulting in 9,330 houses being sprayed and two sprayings in 1987 reached 7,176 houses. At the conclusion of the project, services had been provided to nearly 100 communities.

Case Finding and Treatment

The graphs on the following two pages show the results of tests performed on febrile patients during the three years of the project. The graphs indicate that malaria incidence has been significantly reduced overall.

D. Environmental Health

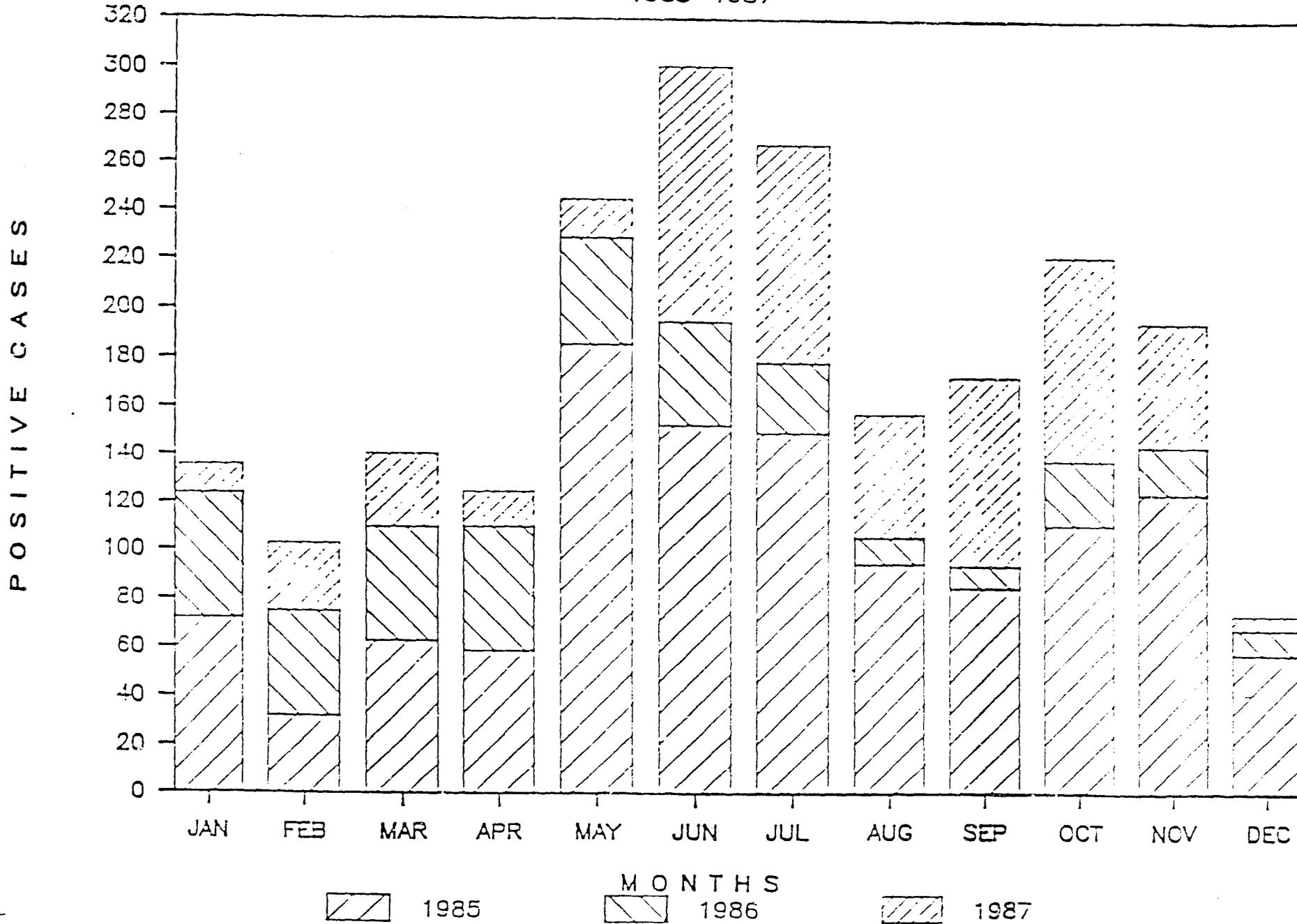
The Environmental Health Program activities began in September 1985. This program started nine months behind other programs because the Puerto Lempira MOH staff wanted to train Miskito promoters in a course entitled, "Course for Health and Community Development Promoters." The course was held in Danli and 24 Miskitos participated. The course lasted three months and of the 24 Miskitos that were trained, 11 were selected and hired. The new promoters began work in February 1986.

The Environmental Health Promoters' duties included:

1. Periodic area sweeps to determine status of community health in their section of responsibility.
2. Organize community health and water groups.
3. Conduct meetings in the communities on community health.
4. Provide technical assistance to communities to promote the construction and maintenance of wells and latrines.
5. Distribute educational health material.
6. Report on:
 - a. Children under 5 years of age with diarrhea and provide rehydration packets.
 - b. Children with upper respiratory infections and refer to a health clinic.
 - c. Children requiring vaccinations and vaccinate during next vaccination campaign.
 - d. Women pregnant and refer to a health clinic.
 - e. Persons suffering from dog and snake bites and refer to a health clinic.

MALARIA INCIDENCE

1985-1987



1001

CASE FINDING



49

The main emphasis of the program by the Ministry's Environmental Control Section was to install latrines and wells in as many communities as possible. An initial target of completing 4,320 latrines and 432 wells was established at the beginning of the project. Later, the target for latrines was downgraded to 3,200 while the number of wells remained the same. The Ministry determined that the need for latrines was more realistically around 3,200. At the conclusion of the project the MOH promoters, working with the communities, completed 2,141 installations. According to the MOH the remaining 1,059 latrines will be constructed as they are required. The high, ground water table, found at most settlements located near rivers and lagoons, made latrine siting difficult. The remaining inventory of latrines is held at the MOH warehouse in Puerto Lempira.

The 158 wells left to be dug will be completed by the MOH as required. The inventory of commodities needed to complete the installation of handpumps is held at the MOH warehouse in Puerto Lempira.

OUTPUT	LOP TARGET	ACCOMPLISHMENTS
Number of Immunizations	25,000	38,966
Persons trained short term in-country	25	66
Water systems and/or wells	432	274
Latrines	3,200	2,141
Nutrition - No. of children with 2nd or 3rd degree malnutrition to be benefitted	376	376
Health clinics constructed	6	6
Area Hospital constructed	1	1
Warehouses constructed	2	2
Vector Control		
A) No. of houses sprayed	700	17,985
B) No. of people medicated	15,000	144,532

E. Summary of Lessons Learned

1. Project designs for the Mosquitia should take into consideration the fact that the MOH commits significantly fewer financial and human resources to this region than to other more populated regions. In project implementation, this requires longer lead times than might otherwise be programmed and technical assistance/training for many of the MOH-provided personnel.

2. The MOH has limited concern for the special needs of the refugees in the Mosquitia, and therefore should not be relied upon heavily for implementation of projects designed to assist them.

III. INFRASTRUCTURE COMPONENT

A. Background

This component of the Mosquitia Relief and Development Project was designed to facilitate the movement of people and commerce in the region. To facilitate the transportation of goods and medical supplies, special interest was placed on connecting refugee communities with the main roads. SECOPT was involved in the design, planning and execution of the following activities:

1. Rehabilitation of a canal connecting Laguna Sirpe and the Kruta river.
2. Improvement of the road network.
3. Construction of three reinforced concrete bridges on the road from Rus-Rus to Ahuasbila.
4. Construction of a suspension bridge across the Rus-Rus river near Mocerón.
5. Repair of 13 minor wooden bridges where road rehabilitation was conducted.

B. Canal Rehabilitation

Plans called for the rehabilitation of 12 kilometers of canal to a width of 24 feet and depth of 8 feet. A dredge to perform the work was purchased in the United States and was shipped to the Mosquitia. Many problems were encountered during the dredging that delayed the rehabilitation work. The main obstacle was the tree trunks and roots embedded in the canal that the dredge could not remove. Secondly, the material being excavated was a dense, abrasive sand that severely abraded the dredge's pumping mechanism.

The dredge was used to rehabilitate five kilometers of the planned 12 kilometers of the canal and three kilometers were rehabilitated by manual labor during the dry season. The rehabilitated canal permits passage of dug-out canoes and small power boats year round from the Laguna Sirpe to the Kruta river. Use of the canal's original alignment negated the need to excavate the other four kilometers of the canal.

The following communities are benefitting from the rehabilitated canal:

<u>Community</u>	<u>No. of People</u>
1. Kanko	209
2. Yamanta	130
3. Kruta	393
4. Konotigne	107
5. Kalpo	169
6. Suabila	41
7. Curi	251
8. Humurru	44
9. Tuburus	160
10. Tikirraya	503
11. Siacualaya	207
12. Baycantá	99
13. Usan	67
14. Kinya	22
15. Turralaya	41
16. Hutlamata	35
17. Levenkrit	44
18. Laka Olancha	55
19. Laka Tayliyari	42
20. Laka Laur	29
21. Laka Tawansilpi	8
22. Laka Tabila	254
23. Laka Dacoratará	197
24. Laka Tuntuntara	261
25. Laka Awaslupia	115
26. Usibila	467
27. Pacui	392
28. Tusidaxa	114
29. Karashuatla	156
30. Titi	193
31. Benk	367
32. Raya	871
33. Klupki	558
34. Mangotara	306
35. San Bernardo	231
36. Itaya	969
TOTAL.....	<u>8,107</u>

C. Road Improvement and Reconstruction

The main road in the Mosquitia, an all weather road generally following high ground, connects Puerto Lempira on the Caratasca Lagoon with Ahuasbila on the Coco river. A branch of this road connects with Mocoron, the center of UNHCR refugee assistance activity. A series of trails connect a number of small communities to the principal road. Other communities benefitted are Karasanka, Lasatigni, Asang, Suhi.

Ahuasbilla is a food producing center. Beans, rice, cacao and bananas are produced and transported by truck to the main markets in Puerto Lempira. A part of this produce is further transported by boat from Puerto Lempira to La Ceiba and other Honduran market centers.

The main goal of this component was to rehabilitate the road between Rus-Rus and Ahuasbilla and to build the necessary bridges to keep the road open during the raining season.

b. Bridge Construction

In 1984, investigations were conducted to determine priority infrastructure activities. Along with a strong indication that road improvements were required to support improved economic productivity in the area, it was apparent that key river crossings warranted attention. While a decision was being made regarding the type of structures suitable for major and minor crossings, SECOPT installed a light cable ferry at the Rus-Rus River crossing to facilitate the movement of lightweight vehicles, materials and personnel into part of the project area. The ferry functioned well during most of the year but at times of high water, it would be washed away. Thus, a ferry was not considered to be a suitable long-term river crossing solution.

Several possible bridge crossing sites were studied prior to selection of the site where bridges had been constructed previously as the most suitable site for construction of the new bridge. At least three other bridges have been built at this site. Two were destroyed by flood and one by military action.

SECOPT selected a bridge design that it had used successfully before. The design called for a rigid-deck, suspension bridge with an overall length of 98 meters. The suspended span was to be supported by two concrete towers spaced 60 meters apart. Two gravity blocks at each end of the bridge would anchor the suspended cables. Construction was initiated in May 1985 but work advanced slowly due to the lead time required to procure materials and transport them to the Mosquitia.

In August of 1986, as construction of the Rus-Rus bridge was nearing completion, the entire Mosquitia was subjected to heavy rainfall causing an unprecedented Rus-Rus river flood. During the flood, the course of the river changed at the bridge site, redirecting the uncommonly heavy flow into one of the newly constructed bridge towers. The strong current undermined the tower causing it to tilt about 10 degrees out of plumb. A damage assessment, performed after the flood waters receded, indicated that the tower would have to be replaced. Work was stopped and the bridge was redesigned by a local structural engineer with assistance from a United States engineering firm. The modified design called for lengthening the structure to 173 meters and placing the support towers 114 meters apart.

Work at the Rus-Rus bridge site was resumed on February 3, 1987, and ten months later, December 9, 1987, the first vehicle crossed on the completed structure.

Two 15 meter concrete bridges were built on the north approach to the principal Rus-Rus structure to serve as flood relief structures.

Thirteen small bridges were improved on the rehabilitated road network.

The following communities benefited directly from the access provided by the Rus-Rus river bridge crossing:

<u>Community</u>	<u>Population</u>
Anuasbila	962
Asang	309
Crasa	83
San Carlos	83
Sausa	168
San Esquipulas	98
San Sang	230
Lasatigni	246
Asansirpe	115
Karasanka	708
Saupani	106
Wiwinak	132
Rus Rus	658
	<u>3,898</u>

It is important to highlight the economic importance of this area as the most important food producer for Puerto Lempira and the rest of the Mosquitia.

TARGETS AND ACHIEVEMENTS

<u>OUTPUT</u>	<u>TARGET</u>	<u>ACHIEVEMENTS</u>
1. Road reconstruction	55 km	122 km
2. Bridge construction	4 bridges	4
3. Bridge repairs	7 bridges	13
4. Canal reconstruction	12 km	8 km

E. Status of the Infrastructure Component

From a financial perspective, SECOPT has had an extremely difficult period. Not only was its budget limited by the President's austerity measures, but it also has had unanticipated costs related to country wide flooding. Nevertheless, SECOPT budgeted L50,000 to recondition road maintenance equipment it has in the Mosquitia. SECOPT is petitioning the Ministry of Finance to obtain approximately L200,000 to carry out a modest maintenance program in the Mosquitia during 1989. Through the ongoing A.I.D. financed Rural Roads II Project, SECOPT is maintaining a presence in the region, however, routine maintenance of the roads in the Mosquitia is practically nonexistent.

F. Summary of Lessons Learned

The execution of the infrastructure component may have been less of an administrative burden for SECOPT and A.I.D. if it had been contracted out to one or more Honduran contractors. One drawback to the contracting out approach is that it may not have employed as many of the local population and thus would not have provided as high an effect in stabilizing the Miskito economy. If a similar activity were considered by A.I.D. for future financing, it would be necessary to weigh the value of completing the work according to a rigid time schedule against allowing more flexibility and using larger numbers of local labor. Skilled labor in the Mosquitia is extremely limited in supply since work opportunities are scarce.

IV. EDUCATION COMPONENT

A. Background

Initially the Mosquitia Relief and Development Project was designed to focus on public health services and transportation infrastructure. However, it was subsequently decided to offer some educational services adapted to the needs of the Miskito population living in the region as well. Design criteria for the educational component included ease of implementation and magnitude of immediate impact in the region.

Based on those criterion, an educational radio project was designed. The concept of providing education by radio offered many advantages compared with working through a formal school system or through a promoter-based informal education system. Radio service can be put on line quickly compared to building schools and training teachers or organizing a network of community learning centers. Radio can have an extremely wide impact because it reaches the remotest communities and houses. Radio, having been used successfully in many developing countries for adult education, literacy training, formal in-school instruction in mathematics, language skills, and social marketing campaigns, is an extremely versatile and economical medium of education.

B. Development of Sani Radio

In July 1985, a \$900,000 Grant Agreement was signed with the IRC to install a community-based educational radio service in Puerto Lempira. The service was designed to serve the Miskito and Spanish-speaking population of the Department of Gracias a Dios with a variety of instructional services. IRC hired a project manager who had prior experience in the Mosquitia with Friends of the Americas. The IRC team was quickly expanded by the addition of a logistics organizer and expeditor, a radio engineer and a former Peace Corps volunteer from the Mosquitia with a background in bilingual education. The team proved to be very effective.

The radio system uses a short wave frequency called, "Tropical Band." The advantages of tropical band are: (1) reliable coverage over a far greater range than is obtainable with FM or AM and, (2) relatively low antenna and transmitter costs. The IRC survey indicated that almost all of the radio listeners in the region owned radios with shortwave bands because shortwave broadcasts were the only radio programs available in the region.

The meaning of Sani in the Miskito language is oral communication; thus, the station is named "Sani Radio." The frequency of Sani Radio is 4.755 MHz.

The system assembled by IRC was ingenious. IRC purchased components and installed the system in a small mobile home in the U.S. The mobile home, equipped with two fully-functioning radio production studios, was then shipped, intact, to Puerto Lempira. In addition to the two production studios, the completed radio station includes a 10 kilowatt transmitter, two diesel generators, and a wooden building for administrative staff and scriptwriters.

During the first quarter of 1986, the commodities needed for the station were procured and shipped. A plot of high, dry land near the Puerto Lempira airstrip was purchased and by March, 1986, most of the equipment had been received in Puerto Lempira. The speed of the procurement and delivery of the equipment was remarkable. Construction of the buildings and installation of the electronic equipment and generators took place between March and August, 1986. At the same time, a staff of about 30 individuals, many of them local schoolteachers, was recruited.

The staff was trained on-site between April and August, 1986. Training in scriptwriting and radio production was initially provided by two experienced educational radio broadcasters provided from Radio Sutatenza in Colombia.

Subsequently, two of the new station's most promising staff members were trained at a special community radio training center called CIESPAL in Quito, Ecuador. This training was financed by the Government of Holland. Two educational broadcasters from the RADECO project in the Dominican Republic provided on-the-job training for the whole staff in Puerto Lempira and an experienced radio producer from the Academy for Educational Development provided specialized training in studio skills and tape editing.

C. Programming

The station was inaugurated in August, 1986. Initial broadcasts included music, news, public service announcements and general adult educational programs in areas such as health, agriculture and fishing. News broadcasts are taken from three sources. International news is provided by rebroadcasting the Spanish language version of "Good Morning America," an excellent news program broadcast by the Voice of America. National Honduran news comes from HRN, the largest private national radio network.

Local news is gathered by the station staff. Music being broadcast is a mixture of locally recorded Miskito music, Latin music, Reggae from the Eastern Caribbean and U.S. country/western music. An extremely popular cultural program has been developed by taping, in their own words, favorite stories and myths of Miskito respondents. A library of over 200 stories has been collected and the response to the rebroadcast of the stories is very positive. The radio station is used by public service organizations and development projects throughout the area to announce activities and to promote their services. It is also used by individuals as a regional communication system to transmit personal messages.

A network of 40 community listening centers, with solar-powered receivers, was organized to receive more structured educational broadcasts. Each of these centers has seating space for about 40 listeners with a local promoter in charge of organizing and promoting local participation. In June, 1987, formal educational broadcasting began with a bilingual education series for school children. The listening centers were oversubscribed for the series. The station had to organize a second session and air the program twice each day to permit more listeners to participate.

D. Impact

Indications are that Sani Radio is extremely well-accepted in the Mosquitia. Visits to Puerto Lempira, Rus-Rus, and Mocorón by the A.I.D. project manager to interview families and development workers, revealed that most people in the region listen to the station. Over 1,000 letters a week are received from listeners. Sani Radio is the only Honduran station that reaches the Department of Gracias a Dios and the only station broadcasting in the Miskito language. Because of its local content and orientation, it has become respected, trusted and used by the people of the region.

E. Institutionalization

The work of IRC OPG along with all the other components of the Mosquitia Relief and Development Project was extended by A.I.D. to December 31, 1987. The extension was needed to provide time for the arrival and installation of commodities that had been ordered by IRC. IRC and A.I.D. arranged to transfer the radio station to AVANCE, a Honduran PVO, upon completion of the IRC Grant. AVANCE agreed to assume IRC's contract obligations and to continue the operation of the station.

F. Evaluation

An evaluation was made of Sani Radio to document the extent of the audience and the impact of the station. A communication researcher from Indiana University surveyed listeners to determine their listening patterns and their program preferences. She also studied the utility of the different Sani Radio services to determine the kinds of information being learned from the station's educational programs. The evaluation, in general, was positive and supportive of the IRC approach to the activity. The key recommendation was that AVANCE and Sani staff pursue plans for implementing more educational programming.

G. Future Actions

Education Component: The station's major challenge under AVANCE is to find a suitable permanent institutional and financial base. The station is expensive to operate and it has had limited success in its effort to generate revenues on a local level by selling advertising in the Department of Gracias a Dios. Factors to be considered for future operation include: (1) costs will be lower following the completion of production of the school broadcasts; (2) because the school broadcasts, once recorded, are being used repeatedly without having the necessity to maintain the existing, expensive team of scriptwriters and actors, the staff has been reduced from its prior level of thirty to a core staff of ten or less. Alternatives for financing the station include: 1) turning it over to the Government's broadcasting network, Radio Honduras, 2) turning it over to one of the commercial networks, 3) AVANCE could decide to retain the station, subsidizing it with revenues from its planned commercial printing operation, or, 4) the station could become independent and self-financing, possibly by moving it to La Ceiba, where it could continue to serve the Miskito population in Gracias a Dios while offering other programming for northern Honduras and the Bay Islands.

Health Component: The Ministry of Health should consider performing internal evaluations of its regional program in the Mosquitia until the activities are operating smoothly. In addition, the Ministry should weigh the implications of inviting an international PVO to operate the Hospital on a fulltime basis. This should be attractive to the MOH because it should mean that their contribution to the region would be less than the amount presently required for a year's operation.

Infrastructure Component: When the new rural road maintenance project is functioning there should be funds allocated for road maintenance in the Mosquitia. This activity would consist of typical road and bridge maintenance along with minor canal improvement and rehabilitation of the physical plant and equipment. Without occasional maintenance, the work performed under the Mosquitia project will deteriorate.

H. Summary of Lessons Learned

1. IRC initially had difficulties in understanding procedures to introduce imported commodities into Honduras. Over time, IRC overcame this difficulty.
2. Pre-assembly sound studios made the task of establishing a radio station much easier.
3. The radio is an important means of communication in the Mosquitia.
4. Finding professionals that spoke Miskito was a key to the success of effective programming.
5. During project implementation, more thought should have been given to income generation for perpetuation of the station.

V. FINANCIAL STATUS

	<u>DOLLARS</u>			
<u>HEALTH</u>	<u>OBLIGATED</u>	<u>COMMITTED</u>	<u>DISBURSED</u>	<u>UNEXP.</u>
Phase I	497,890	497,890	497,890	0
Infrastructure	1,420,355	1,407,964	1,407,964	12,380
Basic Water & Sanitation	639,511	639,511	639,511	0
Malaria Vector Control	904,995	904,995	904,995	0
Administration	271,420	271,420	271,420	0
Puerto Lempira Hospital	58,674	58,674	58,674	0
Training	7,155	7,155	7,155	0
SUBTOTAL	<u>3,800,000</u>	<u>3,787,620</u>	<u>3,787,620</u>	<u>12,380</u>
 <u>INFRASTRUCTURE</u>				
Roads and airfield reconst.	911,781	836,042	836,042	75,739
Bridge construction	782,555	782,555	782,555	0
Rehabilitate canals	357,423	357,423	357,423	0
Administration	232,577	232,577	232,577	0
Contingencies	136,354	136,354	136,354	0
SUBTOTAL	<u>2,420,690</u>	<u>2,344,951</u>	<u>2,344,951</u>	<u>75,739</u>
 <u>EDUCATION</u>				
IRC	900,000	900,000	877,719	22,281
 <u>ADMINISTRATIVE</u>				
SUBTOTAL	<u>379,310</u> ^{1/}	<u>377,562</u>	<u>377,409</u>	<u>153</u>
SUBTOTAL	<u>1,279,310</u>	<u>1,277,562</u>	<u>1,255,128</u>	<u>22,434</u>
GRAND TOTAL	7,500,000	7,410,133	7,387,699	110,553

According to the Pipeline Report dated 01/24/89.

1/ \$1,748 were de-earmarked from the administrative account in 1987.

<u>Disbursed Funds</u>	=	7,387,699	=	98.5%
<u>Obligated Funds</u>		<u>7,500,000</u>		

LOCAL CURRENCY

During the course of the project, L 1,275,000 was assigned to the project through Economic Support Fund local currency generations. These funds were used for construction activities on the Rus Rus River bridge and on a small portion on the canal reconstruction. There is an unexpended balance of L27,463 which should be deobligated.