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SUBJECT: DAEC REVIEW - NICARAGUA RURAL COMMUNITY HEALTH SERVICES PROJECT PAPER (GRANT)

1. THE PP FOR THIS INNOVATIVE PROJECT WAS REVIEWED BY THE DAEC ON NOVEMBER 21, 1975, AND WAS APPROVED BY THE AA FOR FUNDING THROUGH FY 1977.
2. PROGRAM COSTS. MISSION IS REMINDED THAT IN IMPLEMENTING THE PROJECT, SPECIAL ATTENTION BE DEVOTED TO RECORDING ALL COSTS TO THE GOVERNMENT AND TO THE COMMUNITIES OF ESTAB-

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LISHING THE PROTOTYPE SYSTEM IN ESTELI DEPARTMENT. THIS WOULD INCLUDE BOTH INITIAL INVESTMENT COSTS AND OPERATING COSTS, INCLUDING DONATIONS, IN ORDER TO PERMIT A JUDGMENT AS TO THE FEASIBILITY OF REPLICATION IN TERMS OF THE GON'S BUDGET, AS WELL AS PROVIDE A BASIS FOR THE SUBSEQUENT LOAN FINANCIAL PLAN. IT WILL ALSO PROVIDE A BASIS FOR DETERMINING WHETHER OR NOT THIS IS, IN FACT, A QUOTE LOW COST UNQUOTE SYSTEM.

3. CONSULTANT ASSISTANCE. IF REQUIRED AID/W CAN ASSIST MISSION IN IDENTIFYING APPROPRIATE CONSULTANTS. THESE INCLUDE THE MANAGEMENT CONSULTANT IN THE HEALTH EDUCATION DIVISION TO BE PROVIDED UNDER A USAID-FUNDED TASK ORDER WITH APHA, AS WELL AS OTHERS (HEALTH PLANNER, ECONOMIST, EPIDEMIOLOGIST) REQUIRED TO SET UP THE INFORMATION AND EVALUATION SYSTEM. MISSION MAY ALSO WISH TO TAKE ADVANTAGE OF ALTERNATIVE FUNDING SOURCES FOR TECHNICAL ASSISTANCE IN ORDER TO AUGMENT THE PROJECT BUDGET.

4. AN ALLOTMENT INCREASE IN HEALTH AND POPULATION OF DOLLARS 85,000 FOR THIS PROJECT WILL BE FORWARDED ASAP BY SEPTEL. INGERSOLL

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I SUMMARY AND RECOMMENDATIONS

A. See Project Paper face sheet for summary of fiscal data and project purpose.

B. Recommendations

Grant Activities	385,000
Total new AID Obligations	385,000

C. Description of the Project

This project will establish a viable model of an integrated rural health delivery system. The components of the system are the development of rural health promoters for the delivery of basic preventive and curative health services in isolated rural areas; the establishment of a community health committee in each of the target area communities for the support of community health activities; a micro-analysis of the community health problems and resources; community implementation of selected health projects, primarily potable, water supply and waste disposal; personal and community oriented preventive health education activities which will feature a radiophonic school with regularly scheduled broadcasts (approximately 3 times weekly for 15 minutes); a redesigned curriculum for health educators and a strengthened curriculum for rural health promoters; and improved administrative support system for rural health programs to include improved coordination between GON agencies directly charged with bettering the living conditions of the rural poor.

To assist in the attainment of high level performance in the above areas, it will be necessary to finance the following technical assistance with AID grant funds: a health educator with experience in radio broadcast health education, administration, and experience with the Nicaraguan health sector, 36 man months; a health administrator with experience in coordinated supervision, 4 man months; a paramedical educational team for implementing a paramedical training and evaluation program, 26 man months; and an epidemiologist for establishing data measurement criteria and evaluating the epidemiological impact of program, 4 man months. The following technical assistance

will be obtained with GON counterpart funds: a maternal and child health consultant, 6 man months; a nutritionist, 3 man months; an agriculture extension agent, 3 man months; a health statistician, 3 man months; an epidemiologist/statistician, 6 man months; a sanitary engineer, 3 man months; a civil engineer, 1.5 man months; a malariologist, 2.25 man months; a physician in tropical medicine, 1.5 man months; a general practice physician, 3 man months; a social worker, 3 man months; and a radio programmer, 6 man months.

The Health Education Section of the Ministry of Health will be the principal implementing agent for the project. Full time central office and regional coordinators will be assigned to the project by the health education section. A full time health educator consultant will assist the personnel of the Ministry in the direction of the project. CEPAD, a local Private Voluntary Organization (PVO) associated with Church World Service, will utilize their considerable experience in the education of paramedics to train and evaluate the progress of the community health promoters. Trained health educators will be responsible for motivating communities to form community health committees, select community health promoters for training, and to evaluate the health status and resources of the community. The community health committees, guided by the health educators, selected MOH consultants and other rurally oriented representatives of GON agencies, will implement the community health projects and health education activities. The radio education programs will be developed after an analysis of the community health surveys by the health educator consultant, MOH and Radio Nacional personnel.

It is expected that the combined inputs of technical and financial assistance will provide a suitable medium for the development of a national model for an integrated community health delivery system. The many phases of evaluation which are integrated into the project will provide constant feedback by which to adjust the project model. The overall project model will be evaluated from the baseline and final data collected through the community health surveys which should indicate both lower incidence of prevalent diseases (enteritis, communicable diseases, etc.) and basic improvement of living conditions (potable water, waste disposal, etc.) during the life of the project.

The end of project status which will contribute to this improved health situation and living conditions in the community are:

1. Forty-five villages of under 2500 people will be developing an integrated health program.

2. Community health committees will be established in each of these 45 locations.

3. Community health statistics will be completed and analyzed on all 45 rural communities before the start of health projects and at yearly intervals.

4. Primary and preventive care will be extended to the community members by community promoters.

5. The level of health knowledge in the community will improve with the combined personal and mass media health education approval.

6. Community health projects will be completed which will reduce health dangers in the community. Approximately 80% of the target population will be inoculated, 60 wells installed and 3,000 latrines completed.

7. Educational models for rural health promoters will be defined by job description and curriculum.

8. Overall evaluation of the project will include recommendations for augmentation or modification of appropriate GON health programs.

D. Summary Findings

This project is a vital step for synthesizing an integrated rural health delivery system by the GON. At present the GON has given priority to rural health development as set forth in the recent Ministry of Health (MOH) 5 year plan (published in July, 1975) but has yet to develop a community level policy. The MOH has been preparing and is ready to begin, at the earliest moment, implementation of this project which will attempt to integrate many of the successful aspects of previous or present private and GON health policies. The project meets all applicable statutory criteria, as determined by MOH officials.

E. Project Issues

The major issues related to this project are: the degree to which the community members can be motivated to participation; the degree to which the program may be politicized; the ability of MOH personnel to manage and evaluate this program; and the ability of the MOH to transfer the applicable parts of this model into a functioning national rural health program.

II BACKGROUND AND PROJECT DESCRIPTION

A. The rural health program in Nicaragua has been the focus of increasing governmental, voluntary and international agency attention over the last ten years. The Ministry of Health (MOH) has extended limited health care through its health centers to approximately 120 permanent locations. The National Hospital Board (JNAPS) has initiated realistic steps to upgrade the rural hospital system by establishing minimum level of services, maintenance, administration and personnel for every in-patient facility and also improving the referral network. Private voluntary organizations, especially the Church World Service (CEPAD), the Moravian Mission, the Catholic Church of Zelaya and CARE, have pioneered in the development projects. The international agencies have encouraged rural health delivery with sizeable contributions by the UNDP-PAHO for clinic and sanitation project construction in rural areas and by USAID for health center construction, mobile clinics, and a malaria program implementation loan.

The USAID loan of \$3.0 million for the construction of 56 health centers was completed in December 1974. This has provided the base from which the GON now hopes to increase the coverage and services to the rural population.

The expanded health center system has vigorously tested the administrative, financial, human resources capacity, and philosophy of the MOH and the health sector. The Ministry has sought consultant help (including AID sponsored management consultants) and is in the process of planning for additional assistance to increase the effectiveness of present services. To improve the administrative infrastructure of the MOH, AID is presently planning a grant financed health sector training and institutional development project. Additionally, as put forth in its July 1975, 5 year plan, the MOH is planning to initiate several ambitious and innovative programs to assist it in increasing coverage of the population from an estimated 40% in 1975 to 90% by 1980.

B. Description of the New Project

The new project is an attempt by the MOH to develop and refine an extended rural health delivery system through the use of paramedical personnel, village health committees, and mass media instructional assistance in coordination with existing health sector and other community resources. This project will be carried out north of Managua in the mountaneous, densely populated, but geographically small, department of Esteli which is within the rural area of concentration of the Mission and the newly initiated AID-financed INVIERNO program (Agriculture Sector Development Loan 5247-031).

The project intends to utilize in its design the successful results of other public and voluntary health related programs undertaken in Nicaragua and Central America. The project will be managed by a project director from the health education office of the MOH with a regional office in Esteli.

The basic human element of the extended health system will be the "promotor rural de salud" who will serve in every community below 1,500 people. The promoter will be selected by the local village health committee to attend a two month course in basic medicine and community organization. The promoter will then assist the committee in detecting its health problems and initiating collective solutions, coordinating actions of health or health related agencies, and providing basic preventive and curative health services. The model curriculum and text will be adopted from the excellent course now in process in-country under the sponsorship of CEPAD, a PVO organization which is part of Church World Services, and is staffed by highly qualified educational and medical personnel. The basic supervisory and leadership unit is the community health committee, a representative and responsible health body. Members of the committee will be initially chosen by local officials to include health, education, and religious leaders or by village vote. These committees will be responsible for supervising and assisting all health workers and health activities to include the initial and continuous analysis of community health problems with the assistance of the local promoter and health educator, who will decide on feasible courses of action, and generate community resources to achieve solutions to the health problems.

An extremely successful community health committee model was recently generated as a spin-off from an AID sponsored management improvement program. This project demonstrated the ability of the MOH to operate successfully in the rural areas, and to motivate the local populous to support and even initiate health programs. This model will be utilized as a basic framework for the operation of the community health committees. Technical and administrative support will be supplemented (promoter, health educator, local consultants, mass media education, and inter-intra-agency coordination) to provide a more dynamic program.

A major product of the efforts of the community health committee will be community action projects (wells, latrines, health posts, vaccination campaigns, gardens, etc) which enlist the active participation of a large number of citizens. A program of adequate maintenance for these projects will also be stressed to insure continued utilization and health impact.

The basic coordinating elements for the MOH will be rural health educators who will be retrained or trained under the project to activate and supervise the community health committees, promoters, and community projects within their areas. An important portion of their work will be the community health diagnosis which will assess the major health problems, community economic/physical resources and health manpower resources and establish base line statistics. The initial formation of the village health committees, the collective establishment of a community health plan, the liason to bring adequate technical and economic resources to the assistance of the health committee, and the health education activities through the village health committees to include mass media education program will be additional responsibilities of the health educator.

The mass media health education program is designed, utilizing as its model, the successful Accion Cultural Popular (Radio Sutatenza) in Colombia and will utilize the experience of the recently successful agricultural program in Guatemala. Additionally, the project will utilize the mass media expertise that has been developing in Nicaragua under the present AID sponsored standard mathematical education program and the soon to be initiated Manoff nutrition program. The 1/4 to 1/2 hour regularly scheduled A.M. broadcasts from a local Esteli station will be received in organized classes with accompanying visual aids and texts. Formal class participants will be initially supervised under the leadership of the village promoter, health educator or interested citizen. These classes will complement the village based health education efforts. Informal listening will also be encouraged in the target area. Additionally, a short local health news bulletin will provide motivational messages by acknowledging the accomplishments of various committees or health personnel.

The effect of these classes on the level of health information and knowledge will be measured at yearly intervals between control and participating communities. For purposes of evaluation the communities will be separated into:

- Type A - personal, community, and mass media radio education with formal classes.
- Type B - personal, community, and mass media without formal classes.
- Type C - personal health education only.
- Type D - mass media health education only.

Type E - Community health education only.

The null hypothesis is that there is no difference between the level of health knowledge information, between types of communities.

To facilitate administrative cooperation within the MOH, the project manager will be given an equal administrative status on the "Consejo Técnico" or decision making body for the MOH. A health administrator/ consultant will assist in the design of an effective and efficient management component by stressing coordinated supervision and resolution of problem areas. The consultant will also assist the MOH develop contingency plans for expanding this project to a national scale. Additionally, an interagency governmental committee will be formed to insure that a coordinated effort will be made at the ministerial and community level.

1. Statement of Project Goal:

a. Goal Statement: The principal aim of this project is to provide a national implementation model of an integrated community health program that improves the living conditions and health level of the rural and marginal sub-urban population.

b. Measures of Goal Achievement: The measurement of goal achievement will include:

A decrease in the morbidity rates for majority prevalent diseases (enteritis, malaria, communicable diseases, abortions, etc.) as determined by repeated community health assessments; a demonstration of increased community participation in community health activities to improve living conditions, such as new potable water supplies, waste disposal facilities, and immunization campaigns.

c. Means of Verification: The basic mechanism for verification is the community health survey which will be conducted by the health promoters in coordination with the community health committee, health educators, and other health personnel.

d. Assumptions About Goal Achievement: (1) the rural population can be motivated to effective participation. (2) there will be reasonable political tranquility and political support in the rural area of the project. (3) the MOH and AID will have an adequate administrative response to the needs of the program.

2. Statement of Project Purpose

a. Project Purpose: To stimulate participation of the population in the development and implementation of health programs through the formation of village health committees to oversee the delivery of health information, health services, and simplified medicine to the rural, isolated population through the development of an effective and efficient cadre of community level health workers and through the integration of health related governmental and voluntary agency activities at the community level.

b. End of Project Status

1) Forty-five communities of under 1,500 people developing an integrated community health program.

1.1) A community health committee established in each of 45 rural communities.

1.2) Community health statistics collected and analyzed in all 45 rural communities before the start of projects and at yearly intervals.

1.3) The extension of primary and preventive health care by community promoters in communities with the assistance of MOH personnel, particularly health educators.

1.4) The upgrading of community health knowledge.

1.5) Successful implementation and maintenance of community health projects, including approximately 60 wells operating and serving 200 people per well; approximately 3,000 latrines improved; 80% of the population immunized

2) Educational courses designed for rural health promoters and health educators.

3) A complete evaluation of the project model for the purpose of augmenting or modifying appropriate GON health programs.

c. Means of Verification

1.1) Minutes and records of community health committees.

1.2) Statistics from the village health survey and report of micro epidemiological analysis for each community.

1.3) Personal health records and health education records (immunizations, prenatal visits, breast feeding, family planning participants, etc.)

1.4) A comparison of questionnaire administered to the population which demonstrates an increased level of health knowledge among the populations of selected communities.

1.5) Inspection of reports for the 45 village health projects.

1.6) Job description for promoters and rural health educators in MSP operational administrative regulations.

1.7) Yearly evaluation report of the project with recommendations to GON health agencies for utilization of the successful aspects of the project and a description of their incorporation into other GON health programs.

d. Assumptions

1) That the MOH can recruit and motivate high quality human resources at all levels for the project.

2) That the present level of integragency operation created by current health leaders will be maintained and improved during the course of the project.

3) That increased knowledge of health problems and health solutions will begin to modify poor health practices.

3. Statement of Outputs

a. Outputs

1) Approximately 20 trained health educators with special abilities in developing integrated community level health programs.

1.1) Development of an ongoing curriculum which stresses community analysis, motivation, organization, implementation of self-help projects and evaluation of health projects.

1.2) Development of a continuing education program for health educators in rural health system skills.

1.3) Program standardization in the form of "cookbook" procedures for the basic steps in the development of community health projects undertaken during the project period.

1.4) Quarterly/annual evaluation meetings of the health educators, promoters, health committee, and MOH direct administrative support for continuous evaluation of ongoing projects.

2) Approximately 45 locally trained health promoters with basic skills in community health analysis, first aid, basic primary-preventive care, and basic community health organization.

2.1) Refinement and modification of the basic curriculum and instructional material now being utilized by voluntary groups within the country.

2.2) Refinement and modification of the promoter "community kit" with supplies of basic medicines, medical-dental equipment, self-instruction medical education materials, and audio-visual equipment for community health education.

2.3) Development of a continuing-education program for rural health promoters.

2.4) Quarterly/annual evaluation meetings of health educators, promoters, health committee and MOH direct support administrative personnel.

3) Diagnostic and analytic methodology being utilized for determining community health problems and health resources.

3.1) Continuous micro-epidemiological study for the establishment of major morbidity-mortality indicators to include; infant death rate; maternal death rate; birth rate; death rate; infant weights.

3.2) Basic micro-sociocultural economic study undertaken each year to determine major sociocultural influences on major disease problems, patterned after present health sector analysis survey.

3.3) Basic micro-health resource evaluation of institutional, human resource, and program capacity undertaken each year to determine the status of community health programs, and the relationship of the community with the nearest referral hospital, clinic, or health organization/facility.

3.4) Quarterly community level analysis are conducted to ascertain status of health problems and community health programs, and to modify community health programs to better utilize community resources.

3.5) Yearly MOH report on the health status and problems of the communities.

4) Community health education program (motivation, organization and training) to energize community participation in the health system.

4.1) Personal level (person to person) health education program through promoter and GON health related personnel (sanitary engineers; malaria sprayers; health center and PUMAR doctors, nurses, auxiliaries, etc.) that emphasizes improvement of personal or family health habits, e.g. specific health education with the service being received.

4.2) Community level health education programs directed at community health committees and health leaders through the health educators and specific.

4.3) GON officials and consultants assisting and instructing a community in a health project.

4.4) Combined personal and community health education programs through the utilization of radiophonic schools which emphasize the format of Radio Sutatenza (radio script which follows a predistributed picture book format.)

5) Specific community action projects which are organized through the community health committees and which address the most important community and personal health problems determined by the health survey and analysis. The program will focus, but will not limit itself, on the following:

5.1) Environmental Sanitation

- (a) Latrification
- (b) Wells and small aqueducts
- (c) Vector extermination

5.2) Nutrition (assistance from PRODESAR, PMA, and Caritas).

- (a) Organization of family vegetable gardens.
- (b) Organization of school vegetable gardens
- (c) Club de Madres, preparation and handling of foods.

5.3) Maternal and Child Health

- (a) Immunization programs
- (b) Combined program against enteritis (education, latrinification, potable water, etc.)
- (c) Family planning services to include identification of fertile age and pregnant women for prenatal, delivery and puerperal assistance and educational; stressing of breast feeding; and well baby visits.

6) Improved intra and interagency administration and coordination.

6.1) Biweekly meetings of the Committee for Coordinated Supervision within the MOH to identify and resolve program problems.

6.2) Monthly meetings of interministerial/inter-agency committee for program coordination to include as a minimum the PRODESAR component of MOH, Ministry of Agriculture and Ministry of Education personnel to identify and resolve program problems.

b. Means of Verification

1) MOH personnel records

Minutes of village health committees for attendance of health educators.

Number of Health education activities organized.

1.1) Curriculum for health educators

Manual for health educators which parallels curriculum

1.2) Curriculum for continuing education program for health educators.

Schedule for health education and continuing education program.

1.3) Manual for the development of community health projects.

1.4) Minutes of annual evaluation meeting.

Per diem records for annual evaluation meeting.

2) Community health committee records on reimbursement of health promoters for medicines. MOH records of supervisory visits to health promoter:

Health promoters records of patients. Monthly statistics forwarded to MOH on reportable diseases.

Community health analysis updated every six months by the health committee and promoter.

2.1) Published curriculum and instructional material.

2.2) MOH records on distributed and resupplied "promoter kits".

2.3) Published curriculum and schedule for continuing education program.

2.4) Minutes from annual evaluation session.

Per diem records from MOH on promoter attendance

3) Published "Cookbook guide" to community health analysis for determining health problems and health resources.

3.1) Annual published report by MOH on major morbidity-mortality data for 45 communities by month.

3.2) Annual published report by MOH of the micro sociocultural economic influences on disease.

3.3) Annual published report by MOH on health resource data (institutional, human resource, program) and effectiveness of referral pattern.

3.4) Copies of quarterly community health committee analysis.

3.5) Annual published report by the MOH on the health status and problems of the target communities.

4) Schedule of community health activities for each participating community which is based upon the community health survey and developed from the "Cookbook" standard formats which is modified for each community.

4.1) List of patient contacts.

Activity list for health education by promoters and clinics. PUMAR personnel publication of standard health education components for the major personal health problems is cookbook format.

4.2) Activity schedule for GON health officials providing technical assistance for community health projects.

Per diem records for technical assistance.

4.3) Schedule of broadcasting. Scripts for community health and personal health messages over radio.

"Classroom" records for individuals participating at the local level in the formal classes.

Distribution schedule for accompanying visual aids and programmed text.

5) Quarterly community health committee plan of action developed from the quarterly analysis and survey, community health records of the scheduling and completion of projects.

Financial allocation and disbursement of funds for projects at MSP level and community level. Per diem allocation for technical assistance for projects.

6) Minutes of inter (MOH, MOA, MOE) and interagency (Consejo Técnico) groups meetings which demonstrate timely identification and resolution of problems. Minutes of community health committee meetings which demonstrate assistance provided by higher level GON health personnel in the identification and resolution of problems.

4. Inputs

a. AID inputs will be in the form of travel and maintenance costs for participant training, continuing education activities, and technical assistance; commodity purchases design material, and transportation costs for community projects; and costs related to the radio-
phonic school for the sum of \$385,000.

b. MOH/GON inputs will be in the form of salaries, office equipment and space, maintenance of equipment, cement latrines, and gasoline transportation. For the sum of approximately \$268,400.

c. The individual communities will make inputs in the form of basic medical supplies and medicines for the promoter; basic indigenous materials in construction, and labor for community health projects for a total of approximately \$76,005.

d. Details on the specific inputs and their costs are shown on the following pages.

A. I. D.

	1976	1977	1978	Total
<u>TECHNICAL ASSISTANCE</u>				
Health Educator (12 mm x 1,5000/m) (10% increase 3 rd year)	\$ 20,000	20,000	22,000	62,000
Health Administrator in Coordinated Super- vision 4 mm.	5,000	7,500	7,500	20,000
Rural Health Paramedical Training Team (16 mm) CEPAD	8,000	8,800	9,600	26,400
Epidem...ologist (4 mm)	5,000	7,500	7,500	20,000
Sub-Total	\$ 38,000	43,800	46,600	128,400

FOREIGN TRAVEL

Radiophonic School Bogotá, Colombia (\$359 round trip x 3 persons) + (5 days x 40/per day x 3 people)	1,400	1,540	1,700	4,640
Agriculture Radio School and Quirigua School, Guate- mala (\$130/round trip x 3) + (3 people x 5 x 40)	1,000	1,100	1,250	3,350
Community Health Committees Panamá (\$150/round trip x 3) + (3 x 5 x 40)	1,100	1,250	1,400	3,750
Sub-Total	\$ 3,500	3,890	4,350	11,740

	1976	1977	1978	Total
<u>LOCAL TRAVEL AND PER DIEM</u>				
Consultants	\$ 1,000	1,000	2,500	4,500
Program Coordinators	2,000	1,500	1,000	4,500
Technical Assistance/Local (21 mm x \$140/mm)	3,000	3,000	3,000	9,000
Sub-Total	\$ 6,000	5,500	6,500	18,000
<u>Miscellaneous</u>	\$ 2,000	2,000	3,000	7,000
	\$ 49,500	55,190	60,450	165,140

EDUCATION COURSES

Promoters - Basic Course (15 promoters x 56 days x \$5/day)	\$ 4,200	4,620	5,000	13,820
Health Educators - Basic Course (5 x 176 days x 6.50/day)	5,720			5,720
Promoters - Continuing Education \$5/day x 6 days	450 (15 promoters)	900 (30)	1,400 (45)	2,750
Health Educators - Continuing Education \$6.50/day x 12 days x (2 x yr.)	1,860 (12 health educators)	2,700 (17)	2,700 (17)	7,260
Lecturers (\$15/hr for special classes not given by regular lecturers)	1,800	750	750	3,300
	14,030	8,970	9,850	32,850

	1976	1977	1978	Total
<u>RADIOPHONIC SCHOOL</u>				
Broadcast Time	8,000	8,800	9,600	26,400
Tape Preparation	1,200	1,300	1,440	3,960
Radiophonic Texts 50 families x 10 subjects x 15 promoters x \$.75/text (30 promoters in second year and 45 in third)	5,700	11,400	17,100	34,200
Total	14,900	21,520	28,140	64,560

EVALUATION REPORT

Data Collection			800	
Analysis			560	
Publication/Binding of Report			800	
Total			2,160	2,160
	28,930	30,490	40,150	99,570

EVALUATION SEMINARS

Community Health Committees and Promoters (Semi-annual)				
Community Per Diem (7 people/village x \$5 day x 3 days)	3,200 (15 vil- lages)	6,400 (30 vil- lages)	12,800 (45 vil- lages)	22,400
Lecturers	600	800	1,000	2,400
Material Costs (Publications, special dis- plays)	600	800	1,000	2,400
Total	4,400	8,000	14,800	27,200

	1976	1977	1978	Total
Health Education (Semi-annual)				
Educator Per Diem (15 Educators x \$7 x 3 days)	630	700	800	2,130
Lecturers	600	700	800	2,100
Materials (as above)	150	200	250	600
	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Total	1,380	1,600	1,850	4,830
 Inter-Intra Ministerial (Semi-annual)				
Lecturers (INCAE) (5 days x 138/day x 2 lecturers)		1,400	1,500	2,900
Lodging (\$25 x 15 x 3 days)		2,200	2,400	4,650
Materials (as above)		200	250	450
		<u> </u>	<u> </u>	<u> </u>
		3,850	4,150	8,000
	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Total	5,780	13,450	20,800	40,030

	1976	1977	1978	Total
<u>COMMODITIES</u>				
AM Radios, portable, 4" C" Batteries \$25/radio	400 (16)	440 (16)	440 (16)	1,280
Batteries "C" \$.40 each x 4/radio x 10/year	250	550	850	1,650
Multigraph	580			580
Projectors, 16 mm, Sound portable, 60 cycles C\$420. each	880 (2 ea)	480 (1 ea)	520 (1 ea)	1,880
Screens, 60" x 60", steel case, Tripod (\$50/ea)	120 (2 ea)	70 (1 ea)	80 (1 ea)	270
Power Plant, portable, gasoline, 13455 watts, 115 V, 60 cycles \$250 ea	600 (2 ea)	330 (1 ea)	360 (1 ea)	1,290
Extension Cords, 14 gauge, 13 amp, 100 ft. length	120 (4 ea)	70 (2 ea)	80 (2 ea)	270
Vehicles				
Audio-visual, 4 wheel, 4 - 6 passenger/ea	9,000 (1 ea)	18,000 (2 ea)		27,200
Typewriter, large carriage, electric	1,000			1,000
Teaching Materials				
Health Educator Texts	700	200	220	1,120
Promoter Texts	600	900	1,200	2,700
Community Teaching Aids (Texts, Visual Aides, Films, Blackboards, Writing Ma- terials)	1,500	3,000	4,500	9,000

	1976	1977	1978	Total
Water Pumps, hand (350/ea)	1,200 (3 ea)	11,850 (28)	11,645 (25)	24,695
Design Improvement (design assistance, drilling, cement pipes, tanks, etc.) (\$125/ each)	375 (3 ea)	3,540 (28)	3,610 (25)	7,825
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Total	17,325	39,430	23,505	80,260
TOTAL	101,535	138,560	144,905	385,000

	1976	1977	1978	Total
<u>PERSONNEL</u>				
<u>Salaries</u>				
Health Educators (10)	17,742	17,742	17,742	53,226
Central Coordinator (1)	4,286	4,286	4,286	12,858
Regional Coordinator (1)	4,286	4,286	4,286	12,858
Departmental Supervisor (2)	4,286	4,286	8,572	17,147
Drivers (4)	8,000	8,000	8,000	24,000
Sanitary Inspectors (3)	7,715	7,715	7,715	23,145
Nurse Auxiliaries (3)	7,715	7,715	7,715	23,145
Artists (1)	1,715	1,715	1,715	5,145
Total	55,745	55,745	60,031	171,521

TECHNICAL ASSISTANCE
(MSP, MOA, MO, Radio
Nacional)

2500/mm Material (Child Health (2 mm/year)	715	715	715	2,145
2500/mm Nutritionist (1 mm/year)	360	360	360	1,080
2500/mm Agriculture Exten- sion Agent (1 mm/year)	360	360	360	1,080

	1976	1977	1978	Total
3000/mm Health Statistician (1 mm/year)				
4000/mm Epidemiologist Statistician (2 mm/year)	1,142	1,142	1,142	3,426
5000/mm Sanitary Engineer (1 mm/year)	714	714	714	2,142
7000/mm Civil Engineer (5 mm/year)	500	500	500	1,500
6000/mm Malarialogist (.75 mm/year)	642	642	642	1,926
3000/mm Radio Programmer (2 mm/year)	860	860	860	2,580
3500/mm Social Workers (1 mm/year)	360	360	360	1,080
5000/mm Physician - Tropical Diseases (.5 mm/year)	600	600	600	1,800
5000/mm Physician - General Practice (1 mm/year)	715	715	715	2,145
Total	6,968	6,968	6,968	20,904

MATERIALS AND SUPPLIES

Cement Latrines 5 latrines/month x \$7/latrine	3,150 (15 promoters x 6 months)	9,450 (15 x 12 months) (15 x 6 months)	9,450 (15 x 12 months) (15 x 6 months)	22,050
Office Equipment and Materials	5,715	5,715	5,715	17,145
Typewriter	580	0	0	580
Office Paper	5,000	3,930	3,930	12,860
Total	11,295	9,645	9,645	30,585

	1976	1977	1978	Total
<u>TRANSPORTATION</u>				
Gasoline and Vehicle Maintenance	6,000	8,000	9,000	23,000
<u>AUDIO VISUAL MAINTENANCE</u>		200	200	400
	<hr/>	<hr/>	<hr/>	<hr/>
Total	83,158	90,008	95,294	268,460

	1976	1977	1978	Total
<u>COMMUNITY HEALTH COMMITTEES</u>				
Promoter Basic	525	550	575	1,575
Medical Kit	(15)	(15)	(15)	
\$85				
Restack Kit		1,100	1,150	2,250
<u>PROJECTS</u>				
Well	1,290	12,040	10,700	24,030
Construction and	(3)	(25)	(25)	(56)
Installation 430 ea				
Latrine	8,400	21,000	21,000	50,400
Construction and				
Installation 7 latrines	(1200)	(3000)	(3000)	(7200)
	<hr/>	<hr/>	<hr/>	<hr/>
Total Community Contribution	10,215	34,690	33,425	78,255

III PROJECT ANALYSIS

A. Technical Analysis including Environmental Assessment

The technology involved in this project is well within the technical abilities of the personnel involved and the technical framework of the GON health related agencies, particularly the MOH. For many years the MOH has been involved in various short term efforts to develop integrated community health programs. This project represents the first time sufficient resources, energy, and planning have been concentrated to develop a feasible model. The feasibility for replicating this system for the entire country will be constantly evaluated throughout the project by MOH personnel and consultants with an estimation of the resources required presented along with the recommendations in the final report.

The medical technology required is a basic medical knowledge of first aid, and preventive and curative medicine. The texts and teaching materials have been developed for the promoter by various programs throughout Central America and for Nicaragua by CEPAD. CEPAD, a voluntary organization, will act as the instructional cadre for the promoters trained in the program. In addition, CEPAD will complete a series of instructional or "cookbook" manuals which will be in the form of indexed flow charts with yes or no choices. These will be addressed to the basic medical problems confronting the isolated rural promoter.

The technology required for the community health survey is available in many forms. This project will base its health survey on the Guatemala Quirigua model with amplification of the epidemiological analysis. This will be done in coordination with CEPAD, the consultant epidemiologist, the CDC epidemiological field team stationed in El Salvador, and hopefully the AID/W unit now engaged in Progress Indicator Retrieval Programs (IA/DP/ES). The health sector assessment team has recently developed a macro health survey instrument under AID financing which will be utilized along with the Colombian health survey to identify appropriate inputs into the micro health resource, and socio-economic survey to be utilized at the community level.

The radio mass media health education program will involve technology that is relatively new for the MOH. Previous radio educational efforts have been in the form of a family planning motivational program through spot messages and advertisements for polio and other vaccination programs. Survey studies of Radio listening habits/schedules and of radio ownership exist for the major urban areas of

Nicaragua but not for the isolated rural sections. The ownership of radios and listening schedules will be ascertained by the micro community surveys as part of the economic analysis. An approximation of popular listening times from the urban areas indicates 6-8 A.M., 1-2 P.M. and 9-10 P.M. as the high use hours. These are thought to radically differ in the evening hours for the rural population, 6-8 P.M. being the peak hours.

The health messages prepared for radio broadcast and the accompanying texts have been in development and use for over 15 years by Radio Sutatenza of Colombia. The methodology for developing the radio messages has also been carefully documented. An attempt will be made to integrate the recent successes of the AID agrarian radio program in Guatemala by means of repeated technical visits. The development of this program will employ the full time consultant services of a health educator familiar with the methodology of Radio Sutatenza. The experience gained with AID-financed Stanford University math project in Nicaragua will also be utilized and Stanford personnel will be asked to review material prior to taping and broadcast. The evaluation of the increment gain in health information will be made through a questionnaire to be administered by MOH personnel trained during the Health Sector Assessment and developed through methodology. No attempts will be made to evaluate attitudes in the classical Lazars Field manner. The assumption to be utilized is that the attitude change theory concerning comprehension of information will lead to an attitudinal and then a behavioral change.

The engineering skills requested for latrine installation, water table analysis, design of wells and other community health projects are within the capability of the GON professionals to be utilized by the project.

The environmental impact of this project is minimal in terms of the ecosystem but significantly positive in terms of the human organisms benefiting from the programs. The elimination of human wastes under the supervision of the sanitary engineers and sanitary inspectors will not endanger any potable water supplies. The soil absorptive capacity should be adequate in all areas of this mountainous region. The effect of the proposed ground wells on the water tables should also be minimal, as the pumping devices, when needed, will be manual and intended for human and household needs. Protective sleeves will be installed on all ground wells to prevent surface contamination. These projects will come under the supervision of consultant engineers for technical conformation to sound environmental practices.

COSTING OF PROJECT OUTPUTS

PROJECT No. 524-0110 RURAL HEALTH DEVELOPMENT

PROJECT OUTPUTS	1	2	3	4	5	6	All
AID	44,760	68,200	71,890	111,300	58,800	30,050	385,000
GON	38,500	38,500	44,068	41,480	55,272	50,640	268,460
COMMUNITY HEALTH COMMITTEES	3,825				74,430		78,255
TOTAL	83,260	110,525	115,958	152,780	188,502	80,690	731,715

B. Financial Analysis

The MOH is capable of meeting the financial obligations of this program which primarily involve personnel costs. The personnel problem for the MOH is essentially one of efficient utilization of present personnel. In addition to the full time personnel to be reassigned and hired for the project, we expect that the MOH will provide project personnel by reassigning presently underutilized personnel from lower priority activities to work full time on this project.

The impact on the MOH for implementing this program countrywide is significant and well beyond the present capacity of the Ministry. However, it must be remembered that the MOH is committed by its goals to increase its coverage of the population by 100% over the next five years. This project, as designed, represents a relatively low cost methodology to achieve this coverage and at the same time improve the quality of the present coverage for rural health care. This is done by maximizing community participation and contribution of personnel services.

The financial plan for the program places the greatest allocation of funds (26%) into the development of community health projects. This is appropriate since an objective of this project is to develop community participation in correcting the health problems of the community.

The next largest expenditure of funds (21%) is directed towards community and personal health education activities. To deliver low cost health services, one of the most important aspects is to sensitize the population to the health problems and then to motivate the population at risk to adopt the appropriate preventive health and curative measures. This expenditure of funds should insure an adequate awareness of the major health problems and feasible alternatives for their resolution.

Approximately 16% of the funds are spent for evaluation and monitoring of the project. One of the objectives of the project is to see it expanded for use in other rural areas of the country. This percentage needs to be programmed to insure adequate and reliable data, timely feedback and an in-depth analysis prior to the presentation of feasible recommendations for a national program.

Approximately 15% of the funds are devoted to the training and the activities of the rural health promoter with the remainder

evenly divided between the administration requirements of the project (11%) and the training of health educators (11%).

The financial plan appears adequate to accomplish the purpose of the program and to develop the base from which the GON can, with minimal costs, adapt the project to a country wide program.

C. Social Soundness Analysis

The rural population in the region of Esteli has an estimated per capita income of approximately \$120/year. They are, for the most part, small subsistence farmers, Ladino in origin, and Catholic by religion. They live in unsanitary housing (Type C dwellings) with dirt floors, and walls and roofs of inferior materials which deteriorate rapidly. They endure crowded living conditions of some four people to a small room. Approximately half of the dwellings are without adequate waste disposal and only about 6% have direct access to potable water supplies. Only about 8% of the population finished elementary school and approximately 40% of the population is illiterate.

The village health structure is usually headed by the partera or curandero who earn a small income from dispensing herbs and medicines and from attending deliveries. There is a belief in the effectiveness of modern medical methods, but the expense and difficulty of entering the system usually preclude involvement until a medical crisis has developed and traditional homeopathy fails. The campesino usually comes into contact with the formal health services in the terminal state of illness, if at all. This behavioral pattern tends to be the basis of the common view of the hospital as a place to die. Family planning has generally been heard of, but few women actively participate. Fertility is usually controlled by breast feeding or by taking ineffective means such as purges and herbal medicines. The average number of children is approximately 7 and the number of pregnancies 11. Approximately 16% of the fertile women have utilized modern contraceptive techniques. The infant death rate is approximately 127/1000 with a high morbidity pattern involving the communicable disease. The average caloric intake is 1980 cal/day (minimum recommended 2700 cal/day, and the most prominent vitamin/element deficiencies concern iodine, Vitamin A, and iron.

The social structure and formal organization of the village, as analyzed by the agriculture study group (UNASEC), usually responds readily to outside stimulus but rarely shows initiative in adopting or sustaining programs which require behavioral modification. Approxi-

mately 75% of family heads show unfavorable attitudes towards social participation without strong motivational stimuli.

The project attempts to utilize existing community leadership and personnel as much as possible to evaluate the health problems, plan a course of community actions, and develop the human resources to achieve the project goals. The project will encourage the training of parteras or curanderos to be promoters, when feasible. The project will utilize successful models of community participation projects, such as Cinco Pinos, Prodesar, PMA, and voluntary agency programs, as its basis, for the program development.

The acceptance and participation in this project by the community will present a new opportunity for community leadership. It is anticipated that this opportunity will be seized upon by members of the political party in power to insure their power base. As a result of these actions, it is doubtful whether this project will greatly alter the formal organization of the community. It is not anticipated that this association with the political party in power will significantly damage the effectiveness of the project.

D. Economic Analysis

The budget of the MOH represents 10% of the total budget for the GON. This represents approximately \$16.3 million. The MOH has experienced a relative increase in its budget of 15% yearly over the past 10 years or approximately \$2.8 million in terms of the current budget. This probably represents in real disposable investment potential approximately 5% yearly, when considering population and inflation, or \$840,000 in terms of the current budget.

The cost of the project is approximately \$217,000 per year which includes the start up costs of training and the initiation and maintenance of basic services for 45 communities of less than 1,500 population (an approximate target group population of 67,500). The average expenditure by the MOH per person served is \$7.63; the average expenditure under the project is estimated at \$3.20 per person. There are approximately 1.1 million rural inhabitants in Nicaragua and the MOH estimates that some 45% or 90,000 have access to rural care. The MOH wishes to double this number by 1980. The cost of doubling the coverage of the population utilizing the design of the project would be approximately \$1.57 million, within the anticipated yearly budgetary increase of the MOH, but nearly 1.9 times the real disposable increase.

The cost to the MOH utilizing its current programmatic approval would be \$3.74 million which is 1.3 times greater than the anticipated yearly increase and 4.5 times greater than the anticipated disposable income. Utilizing this analysis, the benefits of such a low cost delivery system become readily apparent. The costs for reaching the 90% coverage called for in the 5 year plan are more realistically achieved under present budgeting expectations, by the adoption of a low cost delivery system along the design of this project model.

IV IMPLEMENTATION ARRANGEMENTS

A. Analysis of the Recipient's and AID Administrative Arrangements

The MOH is the implementing agent for the project. Its internal administration for this project will utilize a project director from the health education office who will coordinate the overall project with concentration on the central administrative procedures of the MOH and the requirements of AID. A regional coordinator will operate from a regional center in Esteli and be responsible for the field performance and coordination of personnel, and the utilization of resources. The health educators will operate under the direction of the regional coordinator and will be responsible for the support and motivation of the community health committees. The community health committees will be responsible for generating community financial, material and human resources in support of its activities.

The MOH will receive all reports and problems from the project in the Consejo Técnico. The project director will have a coequal status in its membership. The Consejo Técnico, which consists of all of the program directors and section chiefs from the Ministry, will assign responsibility for the resolution of problems to the appropriate section or program director.

The MOH will also establish a bimonthly intra agency ^{meeting}/for the maximization of resources and resolution of problems. The MOH, the Ministry of Agriculture, the Ministry of Education are the basic agencies of the GON which will be in attendance.

There are several basic administrative problems inherent in the MOH organization which will have direct relevance to this project, the most important being a failure to insure coordinated supervision and quick resolution of identified problems. The Health Adminis-

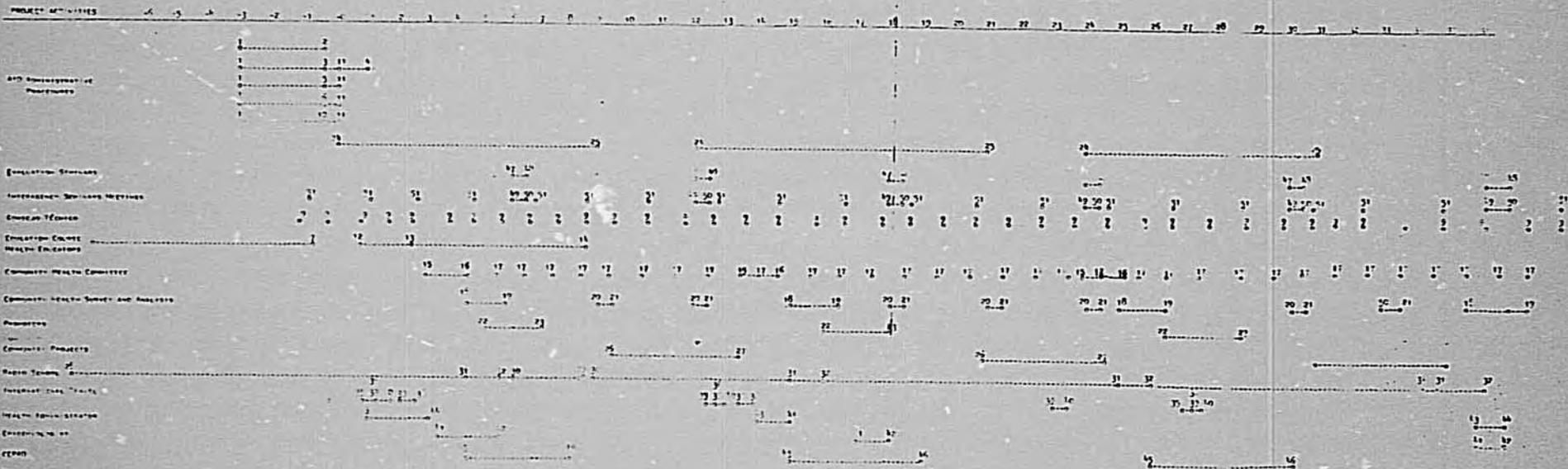
tration consultant in this area should strengthen the MOH's ability to react more favorable in these areas.

The MOH with the proposed technical assistance assigned by the project should be capable of carrying out its assigned administrative responsibilities.

AID

AID will monitor the progress of the projects through: the community health surveys; regular meetings of community health committees; evaluation conferences of promoters, health committee members and health educators; coordination meetings of the Consejo Técnico ; and regular meetings of the interagency coordination committee in addition to the normal financial monitoring through the voucher. receipt system, and regular reports of consultants.

B. Implementation Plan (See Chart).



- #1 NOTIFICATION OF PROJECT APPROVAL
- #2 NOTIFICATION OF WAIVER FOR HEALTH EDUCATOR
- #3 COMPLETION OF NEGOTIATIONS WITH CONSULTANTS ESTABLISHING AVAILABILITY
- #4 SIGNING CONTRACT WITH CONSULTANTS
- #5 ESTABLISHMENT OF REGIONAL AND CENTRAL OFFICE DIRECTORS
- #6 ESTABLISHMENT OF FINANCIAL ACCOUNTING SYSTEM
- #7 ESTABLISHMENT OF FINAL CURRICULUM FOR HEALTH EDUCATOR COURSE
- #8 ESTABLISHMENT OF FINAL CURRICULUM FOR PROMOTER COURSE
- #9 MEETINGS OF CONSEJO TÉCNICO FOR INTERNAL ADMINISTRATION
- #10 ASSIGNMENT OF PROGRAM EQUIPMENT AND FINANCING BY MOH
- #11 PROJECT AGREEMENT --FUND ALLOCATION
- #12 BEGINNING OF HEALTH EDUCATOR TRAINING
- #13 TERMINATION OF DIDACTIC PORTION OF TRAINING
- #14 TERMINATION OF PRACTICAL PORTION OF TRAINING
- #15-16 COMMITTEE FORMATION, 15 COMMITTEES
- #17 COMMITTEE MEETINGS
- #18-19 ANNUAL COMMUNITY HEALTH SURVEYS
- #20-21 QUARTERLY COMMUNITY HEALTH SURVEYS
- #22-23 TRAINING OF PROMOTERS
- #24 COMMODITY PIO/C
- #25 DELIVERY OF PIO/C MATERIALS
- #26-27 PROJECT PERIOD OF EMPHASIS (WELLS, LATRINES, VACCINATIONS, ETC.)
- #28-29 PREPARATION OF RADIO MESSAGES
- #30 INCORPORATION OF HEALTH SURVEY INFORMATION
- #31-32 ANALYSIS OF HEALTH KNOWLEDGE OF POPULATION
- #33-34 RADIO BROADCASTING
- #35-36 RADIO SATUTENZA, BOGOTÁ, COLOMBIA
- #37-38 QUIRIGUÁ, GUATEMALA AND AID AGRICULTURE RADIO
- #39-40 COMMUNITY HEALTH COMMITTEES, PANAMÁ
- #41-42 EPIDEMIOLOGIST
- #43-44 HEALTH ADMINISTRATOR
- #45-46 CEPAD TRAINING UNIT
- #47-48 EVALUATION SEMINARS
- #49-50 INTERAGENCY SEMINARS
- #51 INTERAGENCY MEETINGS