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SCOPE OF WORK

Guatemala Health Sector Assessment

(Including Nutrition - Phase I)

5200000.2

USAID Guatemala
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PURPOSE

Sector assessments are collaborative analyses, which are jointly undertaken by host governments and USAIDs, and which utilize technical assistance from regional organizations such as Pan American Health Organization and INCAP, as well as from U.S. institutions. The objective of the health sector assessment, which includes a nutrition component, is to describe and analyze the myriad of health problems and suggest feasible alternative strategies and programs for addressing these problems.

Another objective of this assessment is to analyze the priorities of AID development assistance in health and nutrition in Guatemala for the next three to five years in order to prepare a revised DAP for health, including nutrition, by mid CY 1977. For this purpose the assessment will focus on:

- 1) A detailed consideration of the activities included in the proposed FY 78 health loan¹ to determine the priority and need for such a loan, and to define further the specific loan activities; and
- 2) The identification and evaluation of alternative activities in health and nutrition that might warrant AID development assistance in the next several years.

The Assessment is intended to define these priorities in a way that fully reflects the policy of the Government of Guatemala, as well as the priorities of AID.

As a result of the assessment process, the Government of Guatemala will be assisted both in developing and analyzing its own priorities in health and nutrition; and in increasing its own analytical and planning capabilities.

PRIORITY AREAS FOR INVESTIGATION:

The Assessment will concentrate on those topics which are defined by the Five Year Health Plan as priority policy

1 See FRP Rural Health Loan, Dec. 1975, in Annex 2.

areas and which are also priority areas for AID assistance.

Five specific policy areas are emphasized by the Guatemalan Plan:

1. Increase in the coverage of health services, emphasizing the most vulnerable groups;
2. Increase in the efficiency of use of the existing infrastructure of the health system;
3. Improvement in the supply and distribution of human resources for the provision of health services;
4. Development of a multi-sectoral/food and nutrition policy to improve nutritional status;
5. Improvement in the quality of the environment.

How measured

AID considers key problem areas in the health sectors of developing countries to include 1) excessive population growth, 2) lack of cost effective health-delivery systems, 3) poor capability in health planning, 4) lack of environmental sanitation services, and 5) lack of an intersectoral planning capability and multisectoral programs in nutrition.

In discussions with representatives from AID, the Guatemalan National Planning Council, and the Ministry of Health, it was evident that a strong area of common concern in these areas existed, and that the assessment should explore program priorities for both AID and other donor assistance in the five specific policy areas listed in the Guatemalan Plan. The Guatemalan officials suggested these policy issues be examined from an intersectoral perspective. Finally, after a series of meetings in which AID, Planning Council, and Ministry of Health officials participated, major issues and activities were identified for the Assessment. The priority areas identified appear to be those most likely to be eligible for future AID assistance.

In the following five sections each of the policy areas is discussed individually. The text identifies the activity

or problem area the assessment will address and describes the scope of work required to analyse it adequately and make program recommendations.

The final section of this paper describes the administrative arrangements for implementing the scope of work and gives summary time schedules and budgets. A description of the Guatemalan health sector is included in Annex I as background for the scope of work.

I. EXTENSION OF COVERAGE

A. Review of Delivery System

Expansion of coverage refers to the organization of resources to serve the population better through specific programs, but geared especially to the most vulnerable groups, i.e. mothers and children and rural populations.

In this context, the health sector assessment (HSA), will focus on the existing health system, reviewing its legal and formal aspects, and analyzing the progress made in its development and improvement during the last 2 years. Forecasting the system's future resource needs will also be included in the HSA.

Since the health delivery system is in the process of undergoing a reorganization, the GOG plans to hold a workshop with the Area Health Chiefs. The workshop will identify the constraints and administrative, technical, organizational and human problems afflicting the operational capacity of the ministry's programs.

The comprehensive review of the health care delivery system is to be conducted in terms of the scope and definition of its components, resource allocations, and productivity in terms of yield, instrument utilization, and manpower utilization. An in-depth analysis of how to extend coverage of all the various program areas in the health sector is beyond the scope and purpose of this assessment. Instead, a few selected areas will be studied in detail during the assessment. These areas include maternal and child health (MCH), communicable disease control, nutrition¹ and family planning, all of which

1 Nutrition will not be discussed in this section because it is the subject of a separate chapter.

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impact on the most vulnerable groups. In addition, the assessment will study ways to increase community participation in village health programs and to provide health services on large, private farms (fincas). Finally the mechanisms for financing the costs of increased coverage will be thoroughly analyzed.

Scope of Study - The definition of programs and description of the overall health system and its operations will be carried out during a 1 to 2 month period by GOG personnel under the direction of the Planning Council's Health Sector Planning Unit. Near the end of this period, the 2 day workshop of area health chiefs will be convened to provide information on the problems of extending coverage of the delivery system.

Resources - Arriving in Guatemala just prior to the workshop, a health administrative or systems analyst will be contracted for a period of 1 person-month (Feb. 20 - March 20, 1977) from PAHO or by AID to analyze all the formal information collected and to attend the workshop. This person will report conclusions, logistical, administrative or personnel bottlenecks that impede program extension and recommend GOG/AID actions to remedy the problems.

B. Maternal and Child Health Services (MCH)

The National Health Plan emphasizes the priority of extending coverage to women (particularly mothers) and children under 5. This target group is clearly consistent with AID priorities.

Three aspects of MCH will be addressed by the assessment: prenatal care, attention during delivery, and postpartum care. The assessment will examine the GOG priority of developing a more effective system for referring high and medium-risk patients. It will analyze current practices of referral of medium-risk and high-risk pregnancies by nurse auxiliaries and midwives to centers or hospitals, and make recommendations for improving referrals, revising criteria or overcoming bottlenecks such as transportation.

A study of the effectiveness of comadrona (midwife) training and supervision is also required in order to suggest

improvements and to attempt to identify reasons why only 905 of 6,000 midwives trained during the last 20 years are currently participating.

The efficiency of the production of MCH clinic visits and impediments to increasing demand will also be studied.

Resources - A month's consultation by an experienced MCH specialist with planning and practitioner skills, in collaboration with an anthropologist/sociologist (0.5 person-months) would be required. Field interviews with midwives and health post personnel would require one week. Curriculum evaluation, referral criteria review and discussion with MOH officials require a second week. Other aspects of the MCH program and report writing will fill the remaining two weeks. A counterpart MCH specialist will be assigned for .5 person-months from the Ministry of Health to work on these tasks.

C. Family Planning

Family Planning programs fall into several functional areas: clinical services, information, education and communication, logistics, training, supervision, evaluation, research, community distribution and private sector activities. In addition, cultural and behavioral aspects of each of these areas need to be considered. The Assessment will address nearly all of these functional areas.

The Mission has recently submitted a Project Paper in family planning which describes the objectives of current programs, and can be used as a source of data for the follow-up studies in the assessment. Three separate assessment activities are planned in family planning (FP).

1. Clinical Services and Distribution System. Acceptors of family planning through the public clinics have barely increased in recent years, while private sector acceptors have increased 100% since 1970. The factors inhibiting expansion of clinic coverage will be assessed. Demand and supply of infertility counseling and treatment in clinics is unknown and should be addressed. The feasibility of expanding FP clinical services to new outlets such as day care centers (guarderías) should be explored. Factors inhibiting the expansion of clinic coverage should be systematically explored and analyzed and recommendations made for future activities.

2. Family Planning Constraints. A study of the demographic, sociological, and cultural constraints to effective family planning will be assessed. User satisfaction, for example, will be assessed. The impact of continued population growth on all aspects of health problems will be projected. Increased nutritional demand by the population, greater requirements for aqueducts and latrines, and the continued growing demand for trained manpower to deliver more services to more people will be addressed. In the assessment report, the multi-dimensional impacts of continued population growth at current levels should also be noted in chapters on nutrition, human resources, and environment sanitation.

3. Research Activity. A comprehensive review of existing literature (articles, books, studies etc.) related to family planning in Guatemala will be carried out. This inventory of existing studies will include USAID files, APROFAM library, INCAP and GOG sources. An annotated bibliography will be developed and data gaps identified. Data which exists, but which is not being applied will also be identified.

4. Resources. The clinic and distribution study will be carried out by APROFAM, the IPPF affiliate in Guatemala, during a 2 month period. APROFAM is currently the leading distributor of commodities in Guatemala, and its operational, research, educational and administrative capabilities are supported by AID. J. P. James, AID Population Officer, will participate.

The constraints assessment will be done principally by INCAP, through its demographer, Charles Teller, requiring up to 3 person months. Financing for both the studies is available through PHA - Title X funding.

A local Guatemalan researcher will be contracted by APROFAM to work with AID in the literature review. Mr. James will be responsible for coordinating and monitoring all three of the family planning analyses and will write the family planning chapter of the assessment in collaboration with APROFAM. The chapter will document existing and future problems, make alternative recommendations for AID and GOG programs, and describe AID's population policy for Guatemala:

D. Communicable Disease Control (CDC)

Expanding the coverage of communicable disease control programs includes increased coverage of immunization programs but also depends on adequate laboratory services, supply systems, epidemiological surveillance, and educational activities. Thus, for effective extension of communicable disease programs we need to know which aspects of the system are preventing the extension, which are most amenable to change, and where the greatest impact on morbidity and mortality can be made.

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Scope of Study. The assessment should describe and assess communicable disease incidence and prevalence for the following diseases: diphtheria, whooping cough, tetanus (in new-borns, children and adults), polio, measles, TB and leprosy. Other disease frequencies, including parasitic, pulmonary, and diarrheal, should also be described. Incidence of these diseases reported in clinic and hospital visits should be compared with mortality figures for these diseases. Estimates of actual coverage of immunizations and other control measures for these diseases should be made.

An evaluation of attitudes toward disease and treatment which impede further coverage should be made. This task will require the participation of an anthropologist/sociologist. The conclusions of a recent MOH study of social, cultural and psychological reasons for accepting and rejecting immunization¹ should be consulted before the analysis begins.

Analysis of data from the post earthquake surveillance system established with U.S. participation, should also be described and analyzed.

Particular attention should be given to tuberculosis case-finding and treatment. The proposed FY 78 health loan proposes that TSR's (Técnicos en Salud Rural) and promoters be financed to promote the tuberculosis program. This loan activity should be evaluated with recommendations on its feasibility.

1 MSP, Investigación sobre Factores Condicionantes de la Aceptación y Rechazo de Programas de Inmunización, 1976 (MOH, Research on Factors Conditioning the Acceptance and Rejection of Immunization Programs, trans. USAID/G).

The consultant should work with MOH personnel from the Division of Laboratories to assess the adequacy of current lab facilities for effective communicable disease control and evaluate the proposed laboratory network being developed by the MOH. The laboratory assessment should be coordinated with any lab analysis being done by environmental sanitation consultants to prevent possible duplication of effort and to share findings.

As a conclusion to this study both the communicable disease specialist and anthropologist should make summaries of current CDC programs, describe gaps in coverage and other problems, and recommend program strategies for resolving the problems. GOG officials should work with them in this activity.

Resources. One CDC specialist with experience in Central America/Guatemala, and expertise in TB and laboratory facilities will be required for up to 3 weeks. One week of this time would be devoted to the epidemiology of health problems specific to the finca workers described in a later section of this work scope. Dr. Harrison Spencer of El Salvador office of DHEW/CDC or his equivalent is recommended. One anthropologist for one week would collaborate with CDC specialist in the study of factors relating to resistance to treatment.

E. Community Participation

The GOG policy of extending coverage of services specifically states that increasing community participation is an important element. Similarly, AID policy resulting from the Congressional mandate in 1974, emphasizes the need to focus on increasing community participation.

One of the purposes of the proposed rural health loan is to improve the TSR's ability to increase community involvement in health by providing tangible benefits to communities which need or demand services and projects. Community health committees would be strengthened by training promoters and TSRs for this purpose. The advisability and priority for such an activity will be assessed.

Scope of Work - Two activities are proposed:

(1)
A study will be made of the competitiveness and lack of coordination among community development programs sponsored by GOG agencies. Many of these agencies train promotors, who, at worst, give conflicting advice and, at best, work with little coordinated effort. This study should enable the GOG and AID to determine how to assist in community participation and whether a promoter approach within the health program is contraproductive. Because the National Economic Planning Council is charged with overall development planning, and any recommendations for GOG national bureaucratic or local reorganization to deal with this problem would require familiarity with GOG agencies and personalities, it is proposed that a staff person on the Planning Council's Health Sector Planning Unit carry out this task. One full-time staff member will work with the GOG's Health Assessment Coordinator for two weeks on this study. Minimal time from the Planning Council's top staff will be required for review and approval of recommendations.

A second activity for assessing community participation will involve the use of an anthropologist to analyze the problem. By review of the literature, the anthropologist will identify various possible modes of participation in the health sector, describe the current state of such participation in Guatemala, and assess the obstacles to, means of, and likely consequences of expanding such participation in future programs. Up to two weeks will be budgeted for this purpose.

F. Health Services for Fincas

A special health problem exists for farm workers and their families who reside on a permanent or migrant basis on large farm holdings. These large farms include the coffee fincas in the western highlands, the vegetable farms of the northern highlands, and the cotton, banana, and sugar plantations of the Pacific lowlands. The large landholders are primarily under private ownership, although there are some communal and government-owned fincas. Many of the fincas are fairly inaccessible and exist as rather independent and self-contained

units in terms of the lives of the worker population. The scattered and migrant nature of the population gives rise to the unique problems that this population faces in terms of disease and of health services. For the many migrant workers, living conditions are characterized by temporary living quarters and temporary communities that lack sanitary services and water.

Access to health services by farm laborers and their families is currently very limited. At least one private voluntary organization (PVO) is currently selling services to coffee fincas, but this model has not spread to other areas. A relatively small number of workers are legally covered by Social Security health benefits, although such services are not now generally available, nor is their extension being planned by IGSS. None of the various current efforts to extend services to rural areas (e.g. sanitation, nutrition, rural health auxiliaries) adequately deals with the needs of this target population.

Scope of Work - The principal product of this component of the assessment will be a set of alternative models for a finca-based health delivery system. Models to be contemplated will include both public and private sector approaches to financing, staffing, supply, types of facilities, payment mechanisms, and any feasible mixes of those two major approaches. The expected costs, as well as the economic and social benefits, of each alternative model will be estimated and compared. Finally, the relevant cultural, social, and political variables will be entered into the calculation of the implementation potential for each model.

Several analyses with different foci will feed into the design of the alternative models. These analyses include the following:

1. A description of the farm laborer population, with emphasis on such demographic characteristics as age, sex, population size, migration history and patterns, and issues of density. This population portrait will also include family size and structure, division of labor at the household and finca levels, estimates of domestic income, supplemental subsistence activities, and such other social and cultural data as seem appropriate to this phase of the activity. Among the

Does it affect productivity?

latter will be an attempt to identify attitudes of farm laborer families toward health and health services, both preventive and curative.

2. An inventory of the current health services provided to farm labor population, for the purpose of assessing current coverage and to identify the effectiveness of models that currently exist. This analysis will be heavily focused on the sanitation practices and level of nutrition of the population. It will also include the provision of basic curative services through such mechanisms as PVO's, individual private medical practitioner and rural health auxiliaries and promoters.
3. Several models developed in other countries for the provision of preventive and primary health care to isolated rural populations will be considered. Additional models will be designed as appropriate to Guatemalan conditions. All models will be assessed based on their effectiveness in providing needed services, as well as their likelihood of being implemented and maintained. In designing models for nutrition, sanitation and medical care services, efforts will be made to assure they are integrated with existing systems as appropriate and possible. Success in implementing and maintaining the services will depend to a great degree on cost and financing considerations, as well as the level of participation of the landowners, and these factors will be included in the analysis.
4. A study of the economic impact of a health services program on the farm labor market. This study will consider the role of farm labor as an input to agricultural production and the implications of changing health programs on labor cost and productivity. The study will also study the impact of such programs on the standard of living of farm workers, and the potential impact of changes in such standards on the supply of farm labor.

Resources. Several experts in areas related to the planning of health services in rural populations will be required for this study. A generalist health planner with rural expertise for

overall conceptualization will be required for 6 weeks. The assessment of demographic and social and cultural characteristics will require the consultation of an anthropologist/sociologist for approximately 6 weeks. A study of the etiological and ecological aspects will require a ~~one week~~ effort of an epidemiologist. An agricultural economist will be needed for two weeks to develop an analysis of the effects on agricultural production of altering the cost and productivity of farm labor inputs.

This team approach to defining the health care problem on fincas and plantations should include representatives of finca owners and associations, as well as PVO and Social Security representatives. As with other aspects of the assessment, the participation of GOG health professionals in the study is essential. A minimum of 3.5 person-months of AID-sponsored consultant time will be required, including 6 weeks for the planner, 1 week for the epidemiologist, and 6 weeks for the anthropologist. The agricultural economist will be secured from AID Guatemala for 2 weeks. Some 4 weeks effort by representatives of the Planning Council, MOH and other GOG analysts will be required, as well.

G. Financing and Extension of Coverage

Any increase in coverage of health services must be financed. Two alternatives are:

1) Increase the efficiency of production of health services.

2) Increase the income for the health sector. The two alternatives are not mutually exclusive. The first alternative is discussed in Chapter II. It appears useful also to study alternatives to increase the income of the health sector. A basic concern is the "affordability" of health services -- e.g. the amount of financing that would be allocated to efficient and appropriate health services according to the value systems prevalent in Guatemala.

In Guatemala currently four major sources are used for financing in the health sector: 1) private fee-for-service, 2) general tax revenues, 3) special Social Security tax revenues, 4) foreign donor financing. Currently each sub-sector depends strongly on a single source of financing:

e.g. Ministry of Health services on general tax revenues, Social Security services on Social Security taxes (and some general tax revenue), private medical services and pharmaceutical distribution on fee-for-service private payments. ✓

Alternative sources of financing have been used in other Latin American countries, including excise taxes (cigarettes, alcohol), lotteries, pre-paid insurance, and cooperatives. It is interesting to investigate the flexibility of existing sources, both in terms of the amount of income that they might generate, and in terms of this recombination or complementation with alternatives. A study will be conducted for that purpose.

Scope. The study will focus on the financing of operational and investment budgets of inpatient and outpatient medical services.

Current sources for financing such services will be inventoried and estimates made, of the total flow of funds from each source (by type of service financed) for 1970 and 1975.

Each source will be discussed in general in terms of its effects on: 1) the utilization of health services, 2) the efficiency of health services, 3) the distribution of income, 4) the gross "yield" of the method, 5) the efficiency of the method (e.g. cost of collection per quetzal collected), 6) the satisfaction of users of the method, 7) the acceptability of methods.

Alternative financing sources not now used in Guatemala will be identified, drawing on the findings of a current study in Bolivia, Colombia and the Dominican Republic (and other sources if available). Those appearing to be appropriate to the Guatemalan situation will be discussed in the framework defined above.

Alternatives to increase the financing of health services in Guatemala will be formulated and evaluated on the basis of the information identified in the previous paragraphs. If one or more development assistance projects appears warranted to improve or extend the financing available (in order to extend coverage of services), such projects will be described including: 1) technical description of the project, 2) potential beneficiary target population, 3) appropriate timing, 4) costs, 5) benefits, 6) socio-political feasibility.

Resources. It is recommended that Dr. Robert Robertson be contracted to be responsible for this substudy. This health economist is currently financed by AID to develop a methodology for such analysis, and to carry it out on a test basis in Bolivia, Colombia and the Dominican Republic. Thus, he combines special methodological insight with information of comparable financing systems.

Early in the assessment process and prior to an on-site visit, the consultant will submit a list of proposed sources of financing to be studied, suggest formats for displaying and organizing data, and describe the specific kinds of data required. Officials from the Planning Council and Ministry of Finance will judge the availability and feasibility of obtaining such data and contract with research assistants to begin collecting, organizing and displaying the data. Upon completion of a large portion of the data tabulation, the consultant will visit Guatemala for one month to assist in ironing out difficulties that have arisen with the format, and to work with GOG counterparts in analyzing the data. The consultant will write the final report of the substudy in such a form that it may be incorporated directly into the final assessment document.

II. INCREASING THE EFFICIENCY OF THE EXISTING INFRASTRUCTURE OF THE HEALTH SYSTEM

A major policy area in the Guatemalan Five Year Health Plan is the increase in the efficient utilization of health resources. In implementing its health program, for example, the Ministry of Health proposes to cut hospital stays in half while maintaining high average bed occupancy, and simultaneously to increase patients seen per physician hour from two to four.¹ If, in fact, the Ministry of Health can double productivity in a span of several years, it should be possible to both increase coverage of existing hospital and physician outpatient services and increase coverage in the rural areas through the

1 The bed discussed is an "instrument" measuring the complete set of physical, human and financial resources necessary to care for one hospitalized patient. Physician hour is similarly an "instrument" measuring the resource for outpatient case.

development of a greatly extended outreach program with little or no increase in the portion of GDP going to health. On the other hand, with a rapidly expanding physical infrastructure and a rapidly growing corps of relatively highly paid professional health workers (physicians), if efficiency is not increased then serious consequences may be forthcoming.

It is, therefore, proposed to assess the possible improvement of health service efficiency in Guatemala, both to understand the financial implications for health programming and to examine the need for additional development assistance to successfully carry out the Five Year Health Plan.

Scope of Work - A brief assessment will be made of the current efficiency of health services, using available information. Of particular importance are studies done in 1975 and 1976 by the Ministry of Health, documenting the productivity of all inpatient and outpatient facilities. (See also IGSS, Costos Unitarios en las Unidades Médicas propias, 1973, and Von Hoegen, M., Propuesta para Implementos Gastos Corrientes en Hospitales Generales, 1974).

Projections of the budget required for hospital and physician outpatient services will be made for a period of ten years (1977-1987). The projections will include the operational budget implications of the current investment program in construction and reconstruction of hospitals, health centers and health posts. Several projections will be made including: 1) continuation of current average productivity (rendimiento) in the expanded system; 2) full achievement of the goals of the health agencies in increasing productivity; 3) partial achievement of these goals (25%, 50% and 75% of goal achievement). The budgets of the Ministry of Health and Social Security Institute will also be projected, according to recent trends, for comparison with projected medical service budgets. Conclusions will be drawn about the requirements for further efforts to improve efficiency, and the possibility of programs to further expand coverage, given these projections.

A. Institutional Coordination and Overview.

An assessment will be made of the activities of the Government of Guatemala to develop increased cooperation

and coordination between the Ministry of Health and the Social Security Institute. The objective will be to identify the rate at which the development of such cooperation is improving the efficiency of the health system.

An assessment will be made of the effect of inefficient referral patterns on service costs. It is understood that the Ministry of Health currently has data on this subject. The Ministry expects that the current health facility construction program will correct the majority of existing problems of inefficiencies due to inappropriate use of expensive facilities by patients requiring only lower-cost care. Therefore, the assessment will quickly confirm or challenge that assumption. If the assumption is judged unwarranted, further research will be recommended.

The optimum composition of the rural health service is, itself, the subject of a million dollar evaluation project in Guatemala and, therefore, will not be treated in this assessment. In the face of such complexity, the assessment can not expect to treat the theme analytically.

B. Health-related activities of PVO's.

An assessment of the Private Voluntary Organizations (PVO s) in Guatemala will be carried out, which will discuss questions of efficiency and extension of coverage. To the extent possible, it will relate geographic coverage and patient load to costs of PVO operations. The study will focus, however, on extent of coverage of PVO health programs and relationship of such programs to the GOG local health system. It will inventory PVO health, nutrition and sanitation training and delivery of service programs.

C. Maintenance Services.

An assessment of the existing situation and projected needs for maintenance in the health system will be carried out. The importance of maintenance facilities and personnel at all levels, from community water systems to national hospitals, as well as the priority which maintenance programs are accorded in the proposed FY 78 Health Loan will be taken into account.

The maintenance study will examine the needs for maintenance personnel whose efforts will provide a hierarchy of services that will satisfy the needs of the health care delivery system from community health post to national referral hospital. The maintenance facilities to be studied will include medical equipment, hospital equipment of all types including laundry and kitchen, telephone and radio communications, vehicles and buildings. The study will indicate the levels of services needed to provide maintenance on a prompt and cost-effective basis. The feasibility of establishing area, regional, and national maintenance services, as well as hospital repair shops, will be investigated. Recommendations will be made regarding numbers, characteristics (building, equipment and staffing), locations, estimates of capital and recurrent costs, and appropriate training programs for maintenance personnel. Technical assistance requirements will be described.

Resources

A. Institutional co-ordination and overview

It is proposed that Dr. Ivan Videla, specialist in health care, programming and budgeting who is to be employed by the Health Sector Planning Unit as a full-time consultant under loan 021, be assigned two person-months during the assessment and accept the responsibility of coordination of this component with AID and Government of Guatemala counterparts. The Government of Guatemala may assign additional people to this study, representing the National Planning Council, Ministry of Health and the Social Security Institute.

Videla and GOG counterparts will be responsible for: assessing current information on efficiency; projecting hospital and outpatient budget requirements in the sector; evaluating the assumed correction of inefficiencies in referral patterns; and assessing sector-wide coordination and cooperation activities.

B. Health-related activities of PVO's

The PVO assessment requires 2 months and is currently being conducted by a USAID PSC contractor, Mr. Charles Keaty, a health planner/administrator with prior experience with PVO's in Guatemala. The study will be completed by December 31, 1976.

C. Maintenance Services

A maintenance engineer will be required for a total of 3 person months, 2.5 of which will be used to complete the multiple tasks outlined above, and the remainder (0.5) to assess the problem of rural water system maintenance (see Chapter V.).

D. Report Consultation

To bring together the threads of these various pieces of the improved efficiency section, a consultant health planner will be required for up to 0.5 person months, working collaboratively with Dr. Videla and a Planning Council counterpart on this section, which will include a summary.

III. HUMAN RESOURCES

The National Health Plan focuses on the problems of human resources for health:

"It must be recognized that the shortage of (health) personnel of all types and their maldistribution constitutes one of the major obstacles for the development and improvement of health services outreach, and consequently, is a threat to the success of health planning".

The majority of health workers serve in the capital city, which contains approximately 18% of the total population. Sixty nine per cent of physicians, 60% dentists, 63% graduate nurses, 53% auxiliary nurses 63% laboratory technicians and 50% pharmacists serve this metropolitan population. Thus, the geographic maldistribution of health workers is seen to be serious, to the detriment of non-metropolitan areas.

When it is realized that the major causes of morbidity and mortality are due to infectious diseases and other essentially preventable conditions, and that half of all deaths occur in children under the age of 5 years, a further manpower imbalance is observable. The majority of medical manpower focuses on the clinical treatment of illness. Manpower for promotive and

preventive services (nutritionists, sanitary inspectors, rural health technicians) are in the minority. Thus, while major emphasis ought to be placed on programs designed to prevent infectious disease in children, production and deployment of health manpower does not reflect this priority.

As is noted in the National Health Plan, the successful deployment of health personnel in the total development sector, and in coordination with other health outreach programs, is seen as a priority. The need for such deployment, particularly in a way that permits mutual reinforcement of health personnel and outreach programs, is also viewed with interest by AID.

Similarly, basic and intermediate level manpower are of special concern to AID, both because of their fundamental role in extending care to the poorest majority and because of AID loan financing for the TSR program. Thus, the assessment will focus on the demand and supply for such personnel and, specifically, on the design and priority for the proposed FY 78 health loan which completes the institutionalization of the TSR. Manpower needs and usage in maintenance of facilities - long recognized as a major problem in the health sector in Guatemala - will also receive special emphasis (see Chapter IV, Improving Efficiency for the Maintenance Personnel Study).

In summary, the priority problems of health manpower appear to be:

- 1) Geographic and demographic maldistribution of manpower.
- 2) Mismatch of medical manpower with actions that need to be undertaken to promote health and prevent disease.
- 3) Provision of acceptable services.
- 4) Lack of coordination between training institutions (public and private), and failure to base training on task analysis and insufficient emphasis on the "health team" approach.
- 5) Inadequate maintenance personnel and support systems related to medical equipment, hospital equipment, services of all types, vehicles, and communications systems.

The manpower assessment will focus on problem 1, 2 and 5 above. Areas 3 and 4 are being addressed by the Rural Health Evaluation Project funded by AID, and number 3 is further examined in the section on Community Participation.

The health manpower priority problems described above identify the studies needed as a basis for future programming and planning. A summary scope of work for the studies and resources needed to perform the studies follows:

Scope of Work.

A. Inventory of Health Workers.

This study shall be directed to the organization and interpretation of data regarding the numbers and kinds of professionals and auxiliary health workers in both public (MOH and IGSS) and private sectors (including missionary and other foreign-assisted programs) on a sample basis in relation to their distribution by geographic, ethnic, urban/rural, and economic dimensions. Information to be summarized shall include education, type of practice, and location of practice. This information exists and needs only to be gathered from available sources.

B. Model for Projecting Demand for Staffing Facilities

The Ministry of Health is currently programming the staffing of its facilities. This is a major problem due to the expansion of the physical installation for health services that is currently being loan-financed by international donors. The assessment, drawing on this programming effort, will summarize employment requirements for different types of health workers. It is hoped that the GOG concurrently, with AID assistance, will identify a model staffing pattern for health facilities which would allow for the study of the implications of improved staffing patterns on the demand for personnel.

In addition, the demand for basic and paramedical personnel not necessarily associated with facilities (e.g. promoters, TSR's comadronas) will be projected.

C. Analysis of Institutional Personnel Practices and Policies.

An analysis will be made of the personnel practices of the MOH and IGSS. Hiring practices, career ladders, salaries and salary increase schedules, job stability, and continuing education programs will be examined. The assessment of existing practices will be based primarily on existing information, while policies regarding broader questions of health manpower will be addressed by executive level personnel.

Resources

A. Inventory

A health manpower planner will be provided by the Guatemalan Academy of Sciences to consult on the manpower planning aspect of this study for one month. Additionally, DHEW is contracting for the development of a manual for manpower planning for health sector assessments, and it is proposed that the Public Health Service Officer acting as technical consultant for this effort will be made available for this consultation for 0.5 PM.

B. Model for Projecting Demand for Staffing Facilities.

It is suggested that AID/W economist, Ben Severn, assist this assessment by developing a manpower planning model for projecting manpower requirements under differing assumptions including a model staffing pattern. Data requirements for the model will be developed in Washington by Severn in consultation with AID and DHEW/OIH personnel.

Three weeks of Mr. Ben Severn's time will be requested to work with the health manpower planner in using computer programs for the manpower projection.

The assessment of the health manpower situation will involve making policy and program recommendations, as well as actually drafting the manpower chapter of the assessment document. GOG representatives from the Planning Council, Ministry of Health, IGSS, and Ministry of Education should allocate at least two person-months to work on the various sub-studies and policy recommendations in order to insure that the recommendations reflect GOG, as well as AID, policy directions.

C. Analysis of Institutional Personnel Practices and Policies.

This study will be carried out by personnel of the Division of Human Resources, MOH, a counterpart in IGSS, a Planning Council staff member, with the Technical Divisions of the Budget Office and Civil Service. The duration of the study will be approximately one month.

D. Report Compilation

AID/G in cooperation with the Planning Council and the Guatemala Academy of Sciences (IPM) will devote 0.5 PM to compilation of final report on human resources.

IV. NUTRITION

A. Background: The publication in 1969 of the Guatemalan National Nutrition Survey carried out in 1965, focused a great deal of attention on the critical problem of malnutrition and its significant impact upon the health and vitality of the Guatemalan people. The survey revealed that approximately 80% of the children under five years of age suffered from some degree of protein-calorie malnutrition. In addition, specific nutritional deficiencies, such as Vitamin A, riboflavin, and iron deficiencies, were identified as affecting a broad spectrum of the population with particularly severe impacts upon the health status of pregnant and lactating women and the elderly.

The impact of malnutrition is evident in its contribution to elevated levels of infant and childhood mortality. The five principal causes of mortality in Guatemala in 1973 were: 1) acute respiratory illness; 2) diarrhea; 3) malnutrition; 4) perinatal illness; and 5) parasitic diseases. Numerous research studies have documented the intimate synergistic relationship that exists between malnutrition and infectious disease from both the points of view of frequency of occurrence and severity. Therefore, as in the case of Guatemala, when infectious disease mortality rates reach levels significantly higher than those encountered in the industrialized countries, the assumption can be made that malnutrition is the pervasive contributing factor underlying the direct cause of death.

Recognizing the severity of the current nutritional problem the Government of Guatemala has included in its Five Year Plan, as a priority, the improvement of the nutritional status of the population.

B. Proposed Work Plan: It is proposed to develop two reports that address the nutrition problem. The first report, to be prepared during Phase I activity and submitted by May 31, 1977, will be included in the Health Sector Assessment Document. This will allow for a holistic view of the health sector programs and priorities at the time of presentation of the Health Sector Assessment Report. The second report, to be prepared during Phase II, will include the broader issues--agriculture, education, and economic issues--relating to nutrition. It is presently anticipated that Phase II will begin during March, 1977, and conclude before the end of 1977.

It is currently estimated that a total of 28.5 person-months of professional involvement will be required in order to complete the entire amount of nutrition activity envisioned, both under the Health Sector Assessment (Phase I) and under the Nutrition Assessment (Phase II). Because of the multisectoral nature of nutrition problems, a variety of different types of expertise will be needed.

It is expected that the Institute of Nutrition for Central America and Panama (INCAP) will be able to provide a maximum of 10.5 person-months of professional time under their current nutrition planning grant funded by ROCAP. The Institute's past research experience in Central America, particularly in Guatemala, its physical location in Guatemala City, and its abundant store of nutrition data, make it the logical choice to be a key contributor to the assessment.

Concurrent with initiation of the nutrition component of the Health Sector Assessment, a team including representatives from the GOG, INCAP, ROCAP, USAID/Guatemala and TA/N will develop a conceptual framework for the Nutrition Assessment which will contribute to defining with greater precision the total nutrition scope of work. This scope of work will reflect the inputs to be provided by all parties concerned, and develop a detailed schedule for the allocation of these inputs to the various assessment tasks.

C. Development of a Conceptual Framework. To understand with greater precision the nutrition problem and be able to identify

specific areas susceptible to intervention, it will be necessary to develop a conceptual framework which captures and describes the multiple and interrelated elements of the nutrition problem.

Based upon past experience and research, the conceptual framework will first allow for identification and description of the relevant variables, and then will permit the formulation of hypotheses concerning direct and indirect causal relationships among the variables. The framework will serve as a guide to the collection, analysis, and tabulation of data by revealing the kinds of indicators necessary for each variable.

The development of the conceptual framework and subsequent analytical activities, will be carried out with an attempt to disaggregate all information as much as possible along three lines: geographic location; socio-economic status; and functional status (such as women in fertile age, school children, and pre-school children). This will permit better pin-pointing of where nutritional deficiencies lie, in terms amenable to the design and targeting of interventions.

This activity to develop a conceptual framework will continue into March, 1977. It will involve representatives of the GOG, INCAP, USAID/G as well as outside consultants to be provided by AID/W, (approximately 2 person-months) with expertise in such areas as the treatment of agricultural nutrition relationships.

D. The Nutrition Component of the Health Sector Assessment (Phase I).

Overall direction, coordination, and final responsibility for the completion of the nutrition component of the Health Sector Assessment will be provided by INCAP. The following tasks are to be included in this first phase of nutrition assessment activity, and the final report will be submitted to the GOG by May 31.

1. The assessment will provide a comprehensive description of the current nutrition problem in Guatemala. Beginning in January, 1977, INCAP will employ a research assistant for one month to gather and analyze available nutrition data. This assistant will work under the supervision of a senior analyst

who will prepare the corresponding sections of the assessment document. The GOG will provide an equal number of person-months of assistance for the completion of this task.

2. The examination of the biological utilization of nutrients and its consequent impact on nutrition can be accomplished with the application of one-half person-months. It is expected that a gastroenterologist with expertise in malabsorption studies will be available to spend about a week on this subject. His research interests in malabsorption lend themselves ideally to such applied work. A week of research assistant time will also be required, in addition to equal amounts of counterpart time from the Ministry of Health. The importance of potable water and environmental sanitation measures in improving nutritional status will be part of this task.

3. Approximately 3 person-months will be needed in order to bring together the numerous anthropological studies relating to food habits and the demand for food. This activity will be initiated in Phase I and completed in Phase II. An INCAP anthropologist will provide overall direction for this segment of assessment activity. Because of the limited time available from the INCAP anthropologist, two weeks of assistance will be provided by another anthropologist residing in Guatemala. An INCAP research assistant and a GOG counterpart will provide an additional 2 person-months of assistance for general information collection and synthesis.

4. The nutrition programs in the health sector and the effect of health programs on nutritional status will be analyzed by a nutrition planner from INCAP and health planners from the Ministry of Health and the National Planning Council. Each of these individuals will work half time for four weeks on this aspect of the assessment. During this period, they will be assisted by an INCAP research assistant who will work for approximately 2 weeks.

5. The short term impact of family planning programs will be analyzed by an INCAP analyst who will spend one week on the task, in collaboration with GOG personnel. The long term effects will be analyzed in Phase II.

E. Tentative Outline of the Nutrition Assessment
(Phase II).

The following components are envisioned:

1. Identify, gather and analyze information documenting the existence and impact of malnutrition in Guatemala. Since 1965 great quantities of data have been collected by INCAP and the Ministry of Health, concerning nutritional status of specific age groups, specific geographic areas of the country, and specific socio-economic groups. This existing information will be analyzed to demonstrate the national and regional prevalence as well as the severity of malnutrition, and to ascertain which potential target populations are most severely affected by the problem. It is anticipated that no new data need to be collected, but rather that the information now available will be sufficient to document the continuing reality of malnutrition in Guatemala. The impact analysis will further trace the impact of nutritional status on health problems, especially the problem of infection, upon individual behavior, and upon worker productivity.

2. Assess the effects of employment, agricultural land use, income and housing trends on the nutritional situation and on the economics of rapidly expanding food production to meet the increased needs of a larger population. Numerous studies are available which provide population projections for Guatemala, and computer programs are available at the University of Illinois, G.E. Tempo, and the Bureau of the Census in Washington to do the necessary economic analyses.

3. Assess the relative impact of those health factors which contribute to poor biological utilization of nutrients and suggest possible strategies for improvement. For example, the role of potable water and communicable diseases in better utilization of nutrients should be examined. As a consequence of that examination, the potential effect of improved and expanded potable water supplies and communicable disease control on nutrition should be discussed and related to other sections in the Assessment.

4. Evaluate patterns of food consumption by specific foods, nutrients, target groups, and socioeconomic levels;

and compare these patterns with an analysis of food availability by the same variables cited above. Demonstrate how these patterns have changed over time and project future patterns based on current population growth. Currently, FAO with the collaboration of personnel from INCAP is preparing balance sheets. These data should be incorporated into the analysis. This evaluation should pinpoint which nutrients and foods are not getting to specific target groups; e.g. mothers and children.

5. Study personal, family and community behavioral patterns to determine socio-economic factors which impact nutritional status. Particular attention should be directed to superstitions related to food consumption, food-preparation practices, intra-family distribution of foods, and treatment within the family of persons with clinical deficiency disease. A considerable library of anthropological work exists for Guatemala which may be searched for such information. Similarly INCAP has information from several studies which may be used for the analysis.

6. Analyze the economic aspects of consumption, focusing on price and income elasticities of demand and marginal propensities to consume various foods. The mathematical models of family food purchase decision in Guatemala, currently being developed by Poyner International, Inc. should be used in this assessment. Similarly, analysis developed in the Tripartite Agriculture Sector Assessment would be very pertinent. The information should be used both to project the nutritional implications of alternative economic development patterns (related to 2 above), and to derive economic criteria for the study of nutrition policy.

7. Assess the pattern of food availability as influenced by the food marketing system in Guatemala. The study should include both the cost increase and the food loss involved in marketing. AID's FY 77 agricultural marketing project, now in preparation by AID, may also provide some initial data for the analysis. INDECA also has several types of data potentially useful for the Nutrition Assessment. The study should assess the potential impact of improved marketing mechanisms on nutrition patterns in Guatemala, focusing on the proposed AID loan for small farmer marketing systems.

8. Study the effect of the food transportation and storage system on food availability and food prices in Guatemala. The study should focus on the nutritional impact of improvement of transportation and storage facilities.

9. Study the nutritional impact of agricultural programs that increase productivity of subsistence farmers. An attempt should be made to utilize the small farm survey work, undertaken by the Rural Development Division of AID, in linear programs using nutritional restrictions similar to those used by Margaret Andrews in Guatemala and the Dominican Republic, and by Michael Demetre in Peru, to evaluate the impact of small farm improvements on family nutrition.

10. Study the effect of agriculture policies modifying crop patterns and productivity on the nutritional situation in Guatemala. The information and analysis of the recent Tripartite Agriculture Assessment, together with work done by INCAP on food balance sheets, should form the basis for this study.

11. Based upon the analyses made, the assessment will describe and critique current programs in health, agriculture and education, and recommend possible program improvements, alternative programs, and possible AID assistance. Specific programs in the various sectors are:

a. Health Sector: Initially the assessment should analyze the governmental infrastructure and the available human resources directed toward nutrition, in order to recommend alternative strategies for instituting an effective administrative and support system and for developing the appropriate manpower required to implement nutrition interventions in the health sector. Attention should be given to the distribution and effectiveness of nutritional recuperation and rehabilitation centers. It is appropriate that the health sector provide medical attention to malnourished individuals. The assessment should question if malnourished people are being effectively cared for, and, if not, how that care can be improved and extended.

Potable water and environmental sanitation form an important part of the health sector picture, and will be treated separately in this assessment (see Chapter V).

Supplementary feeding programs, under the auspices of the World Food Program, are currently being carried out by the Ministry of Public Health. The assessment should carefully examine the administration, cost, and impact on the designated target groups of this program in order to recommend alternative programs or strengthening of the existing system.

Finally, the assessment should explore the possibility of implementing a portion of a comprehensive nutrition surveillance system within the existing rural health system.

b. Population Programs: The assessment will study the effect of family planning programs on nutrition. The short term effects of improved child-spacing and smaller family size on both maternal and child nutrition status will be considered. Similarly, the long term effects of lessened population pressure on food resources will be studied. An evaluation will be made of the adequacy of current population programs in light of the nutritional situation.

c. Agricultural Sector: Within this sector it will be necessary to assess the nutritional efficacy of programs aimed at: 1) reducing economic income constraints on the purchase of adequate diet; 2) improving the marketing of foods; 3) improving the transport and storage of foods; 4) improving the production of foods for small farmers for home consumption; 5) increasing the production and decreasing the price of foods through more efficient agricultural production. Secondary attention will be given to the effect of programs in the food processing industry which deal with specific nutrition deficiencies (e.g. INCAP's study on the costs and benefits of vitamin A fortification of sugar). Data generated during the development of the Tripartite Agricultural Sector Assessment can serve as the basis of this analysis. Other sources of information include the Agricultural Census of 1964, the Small Farmers Survey of 1975, GAFICA studies, INDECA, ROCAP figures, and the developing AID marketing surveys. The assessment may recommend future AID programming in this area.

d. Education Sector: The assessment should focus on Ministry of Education and other education programs and techniques for providing nutrition information to the illiterate. Specifically, the potential use of mass media for dissemination of information at low cost should be explored.

e. Central Coordination: Finally the assessment must examine the need for an intersectoral nutrition planning and coordinating body which could interrelate, in a coherent national strategy, the many different programs impacting on nutrition. The need of a centrally coordinated nutrition surveillance system will also be assessed. The potential role for AID to provide financial and technical assistance for the development and institutionalization of a nutrition planning capability must be assessed as well.

V . ENVIRONMENTAL SANITATION

The Ministry of Public Health and Social Assistance has placed a high priority on environmental sanitation. It is recognized that it is less expensive to prevent disease than to attempt to cure it. Table A shows the ten leading causes of death for 1973. It is quite evident from the table that environmentally-related diseases, as a group, are the leading cause of death in Guatemala.

DISEASE	CASES	RATE cases/10,000	PER- CENTAGE
1. Acute Respiratory Problems	14,593	25.37	20.83%
2. Diarrhea	13,063	22.71	18.64
3. Deficiency Diseases	4,783	8.31	6.82
4. Infant Mortality	4,228	7.35	6.03
5. Intestinal Parasites	2,306	4.01	3.29
6. Respiratory System Problems	2,210	3.84	3.15
7. Cancer	1,594	2.77	2.27
8. Heart Disease	1,558	2.70	2.22
9. Senility	1,349	2.34	1.92
10. Whooping Cough	1,271	2.21	1.81
All Other Causes	23,090	40.15	32.96
TOTAL	70,045	121.81	100.00

Table A. Ten Leading Causes of Death in Guatemala for 1973.
Source : Unidad de Planificación y Estadística

Planning for environmental sanitation is conducted by the Health Sector Planning Unit of the National Planning Council. A sanitary engineer is a member of the Health Planning Unit staff. On the operational level, the Division of Environmental Sanitation is part of the General Medical Services Division of the Ministry of Public Health. A number of other private and public institutions are also concerned with various aspects of environmental sanitation. For example, the Institute for Municipal Development (INFOM), the Department of Water and Sewerage of the Ministry of Communications and Public Works, CARE, the Municipal Potable Water Enterprise (EMPAGUA), the Mariscal Company (a private water company) are a few of the many separate entities involved in the construction, operation, and maintenance of water supply systems. This multiplicity of responsibility has been largely the cause for the absence of a rational, comprehensive water supply program for the country.

A. Water Supply and Sewerage Disposal: Of the urban population, approximately 74% is served with potable water, and 33% is served with sewerage. Of the rural population, 13% is served with water and estimates run from 10% to 36% of the population which is served with some method of excreta disposal. Urban is defined as those communities which are county seats (cabeceras municipales and departamentales) regardless of population. The remainder of the country is defined as rural.

A publication by the World Bank/World Health Organization entitled, Sector Study of Water Supply and Sewerage is currently being revised for final publication. This report should be incorporated into the Health Sector Assessment because it contains all of the information that would be needed for this portion of the assessment. The publication recommends actions related to organizational restructuring, financial policy, and the establishment of rational sector policies and goals. The HSA will assess the priority of these recommendations in terms of future AID programming.

B. Solid Waste Management: Most of the responsibility for collection and disposal of solid waste is in the hands of small, private enterprises which collect garbage for a small fee and dispose of the wastes at the most convenient place. There is only one sanitary landfill in the country, which is located in Guatemala City. Disposal is accomplished generally by open dumping and communities frequently have various unauthorized dumping sites. Even in the communities where there is a collection system, only a fraction of the population is served.

The assessment will explore the financial feasibility of municipalities becoming responsible for the collection and disposal of solid waste. Further study will be made concerning the disposal practices of waste generated both in public markets and at the household level, as well as means for their disposal. The assessment will also evaluate current programs by the MOH in the field of solid waste management and determine ways to strengthen these programs.

C. Excreta Disposal in Rural Areas: As indicated in the Water Supply and Sewage Disposal paragraph, there are really no hard figures as to the actual population served with some means of excreta disposal. Some very crude estimates have been made which indicate that the population is served could be anywhere from 10% to 36%. The assessment will determine, as accurately as possible within the time limitations, the population not served by some means of excreta disposal. The MOH has a program for constructing 10,000 latrines per year serving an estimated population of 50,000 persons per year. This rate of construction can not keep up with the population growth in the rural areas, nor improve the general sanitation level of the population. The assessment will investigate the possibility of increasing the staff of the agency within the MOH in charge of the latrine program, and will explore the desirability of financing a program that would provide latrines for 50% of the rural population within a period of 5 years.

D. Rabies Control: Rabies has become a major concern in Guatemala. In 1974, over 200 animals were proven to be rabid. All eight reported cases of human rabies were fatal. The assessment will review the latest data available on cases of animal and human rabies and the current programs for rabies control. Currently rabies control is the responsibility of the Department of Epidemiology, Division of General Health Services, Ministry of Public Health. The assessment will explore the feasibility of constructing animal observation facilities in the municipal capitals. The assessment will also determine whether the laboratory backup services are adequate for the examination of specimens for rabies detection, and whether transportation of specimens from the field to the laboratory is readily available. If specimens cannot be transported within 24 hours, alternative means of laboratory verification of suspected rabies cases will be explored. The assessment will consider the feasibility of

constructing facilities to destroy stray canines in all areas of the country and implementing a program to eliminate such stray populations. Feasibility and costs of canine vaccination programs will be determined. Almost every program area mentioned above requires strengthening of the existing institutional structure.

E. Human Resources: The total number of sanitary inspectors is approximately 175. The assessment will analyze the coverage that is being reached with this number and describe additional manpower needs. The assessment will explore the possibility of training sanitary inspectors. An assessment will be made of the environmental sanitation activities and capabilities of the TSRs.

The ability of the regional and central office of the MOH to provide materials and personnel to the TSR for programs in potable water, latrines, garbage, collection and disposal, control of hygiene of foods and public markets, vaccination of animals, and human tuberculosis case-finding, treatment, and follow-up will be examined.

There are a number of programs in environmental sanitation that require laboratory support. Water quality monitoring, rabies control programs, and environmental quality control are a few examples requiring reliable laboratory facilities. The assessment will review the laboratory services which are available within the country and the additional manpower and financial resources required to develop effective laboratory services.

There are various organizations within and outside of the GOG performing functions that frequently overlap. The assessment will review overlapping functions and recommend possible changes to be made to maximize limited resources. This study will not be made for water supply and sewerage because this area has been fully examined in the World Bank/WHO study.

F. Community Participation: Quite frequently the best programs in construction of facilities fail because operation and maintenance considerations are not included in the design.

This is especially true with rural aqueducts and wells. The assessment will determine the extent to which community participation is used in the construction of facilities. Simplicity of design and on-the-job training of community members in the operation and maintenance of facilities is essential to the success of such programs. The assessment will recommend alternatives for the construction programs which will increase community participation.

G. Maintenance: The continuing operation of water supply systems is dependent on sound engineering design and organizational logistic systems, as well as community participation. The assessment will review the technology being used in developing rural water projects to see if the most cost effective methods are being used in Guatemala. The assessment will also evaluate the maintenance and logistics systems of the implementing agencies. An attempt will be made to assess the average down time of rural water supply systems and study the benefits in improved service that would accrue from improved maintenance. Appropriate projects will be suggested. This maintenance assessment will be done in coordination with the overall sector maintenance study proposed in Chapter II. As such it will include a consideration of the alternative of one maintenance system for water projects as well as hospitals and health centers, versus two distinct entities given the special requirements of water system maintenance. The exact portion of the 3 person-months of maintenance engineer time devoted to this part of the maintenance assessment will be defined.

H. Financing: Numerous environmental sanitation projects were described in the FY 78 health loan PRP. Many different program alternatives could result from the multi-faceted assessment of sanitation problems proposed in this scope of work as well. The economic feasibility, financing requirements, and cost/benefit comparisons of these projects will be examined.

Resource Requirements: The team with responsibility for preparing the environmental sanitation chapter should be composed of an AID Sanitary Engineer consultant, the Sanitary Engineer from the CNPE Health Unit, the Chief of Environmental Sanitation

Division of the MOH, the Sanitary Engineer consultant of the PAHO/WHO office in Guatemala, and an anthropologist. The two GOG members of the team will arrange for the services of other GOG individuals in specific areas as the study proceeds. The AID Sanitary Engineer consultant should have knowledge and experience in all of the areas recommended for study. The approximate amount of time required from the AID Engineering consultant is 4.25 person-months. The total estimated input from the GOG is 4. person-months. The total estimated input from PAHO is 1.5 person-months. An anthropologist for 1 month is also required.

Ideally, a single engineer will be contracted for 4.25 months to work on all the aspects of sanitation described above (except rabies) and to write this chapter of the assessment. About 3 person-weeks of the consultant engineer's time will be required to assess and recommend further action on the water and sewerage disposal area, 3 weeks on solid waste, 3 weeks on excreta disposal in rural areas, 2 weeks on human resources, and 2 weeks to write the final report. A consultant on rabies for up to two weeks is also required. Possible consultants would be the Guatemalan specialist, Dr. Jacogo Sabaj, Dr. Ralph Frerich, an epidemiologist veterinarian at Tulane University, or Dr. Harold Hubbard, Chief of PAHO's Division of Animal Health.

In each of the assessment areas for environmental sanitation, there will be at least 1 person-week of time requested for sanitary engineers from the Ministry of Health, the Health Planning Unit of the Planning Council, and with the exception of the human resources study, from PAHO/Guatemala. GOG personnel will, therefore, be participating in the report writing and review process.

An anthropologist will be contracted for one person-month. The focus of this input will be twofold: 1) examination of the realities and potential of community participation in planning, constructing, and maintaining environmental sanitation projects; 2) observation and analysis of community and household behavior as applied to program planning and implementation. The anthropologist will also assist in writing the chapter summary.

Finally, an economist will be required for 2 weeks to analyze the financial and economic impact of various environmental sanitation interventions. This will be the same economist working on the overall health sector financing study, so that a global perspective will be included in this sub-sector analysis.

PREPARATION OF FINAL REPORT

The Health Sector Assessment is a comprehensive examination of priority areas for AID financial assistance in Guatemala. Consequently, the five specific substudies, which are focused on the policy areas of greatest concern, must be coordinated and integrated into a holistic document. A central coordinating group will, therefore, be established with responsibility for administering the Assessment, for coordinating activities and personnel, for writing introductory and concluding sections of the Assessment report, and for integrating the separate reports of the various assessment teams into a coherent, well written final document.

A consultant will be contracted for the length of the assessment to take responsibility for coordinating AID inputs (foreign consultants) and to coordinate jointly the overall effort with Dr. Carlos Estrada Sandoval, Chief of the Health Sector Planning Unit in the National Planning Council. Dr. Estrada will assign personnel under his supervision from the unit to assist in the coordination, as required. AID will finance the employment of a full-time Guatemalan professional to assist the Council during four months to assure that the additional efforts involved in the Assessment do not interfere with the important, on-going duties of the Council's health planning staff. AID will also finance technical assistance for the Council in health and nutrition planning from loan 021 to continue developing their capability in these fields. AID will also hire a Guatemalan health planner to work half-time for six months to assist the U.S. contractor. The U.S. contractor health planner, Dr. Estrada, and their assistants will form the project coordinating group. They will work in close collaboration with Dr. E. Croft Long, Public Health Advisor, who will be USAID/Guatemala's project manager for the health sector assessment. Dr. Kenneth Farr, DHEW/Washington, will be responsible for review and coordination of the project from AID/W and will travel to Guatemala four times

during the assessment to assist in the coordination and writing of the final document.

The overview of the health sector will be reviewed by the project coordinating committee, with the principal responsibility for writing that portion of the assessment assigned to a professional health planner to be contracted. That overview will briefly treat: 1) the role of the health sector in national development in Guatemala; 2) the history and institutional organization of the health sector; 3) the physical infrastructure for health services; 4) health planning and health policy in Guatemala; and 5) donor activities, particularly those pertaining to health and reconstruction. The attached table relates the indexing of the library of health planning materials gathered for the assessment to the topics to be studied by the different work groups.

In addition, the health planning consultants will also specifically assess the priority for health planning and technical backstopping activities identified in the proposed FY 78 health loan.

The assessment report will contain a final section which discusses the interrelationship of the specific analyses and recommendations made in prior sections and defines overall recommendations and priorities. This section will not only include recommendations for the definition of programs, but also the identification of areas which require additional analysis or collection of new data in order to identify program priorities.

The final section of the report will be prepared in consultation with the Planning Council by the following persons:

1. A health planner consultant
2. Dr. E. Croft Long
3. Mr. J. P. James
4. Dr. Kenneth Farr.
5. Mr. Lawrence Heilman

The preparation and editing of the final report is expected to occur in two phases: phase one after the completion of the sections dealing with internal aspects of the health services sector; and phase two after the completion of the entire report.

During this period Dr. Farr and a junior health planner from the DHEW staff will also assist in writing the document. To facilitate final report writing, each consultant will write a summary of his or her conclusions and recommendations.

COORDINATION AND ADMINISTRATION

In order to complete the multiple tasks outlined in this scope of work, it is critical that adequate administrative and logistical support be provided. The Mission proposes to contract with the Guatemala Academy of Sciences for this purpose.

The Academy is an appropriate organization to provide administrative support because it has sufficient resources, is already responsible for the Rural Health Evaluation Project financed by an AID grant, and is a Guatemalan institution, which will help to increase Guatemalan participation in the assessment process.

The academy will provide office space for visiting consultants, secretarial support, translating, and contracting services for local consultants. An administrative assistant will supervise these activities and be responsible for drafting contracts for GOG technicians participating in the assessment. The AID Assessment Coordinator will have his office located in the Academy.

Academia de Ciencias Médicas, Físicas y Naturales

Budget for Proposed HSA

Other Costs

1. Project Manager 7 months 4 hrs./day (50% effort) at Q400/month	Q2,800.00
2. Local Consultants up to 15 man-months at NTE Q750/month	Q11,250.00
3. Secretarial Services up to 10 man-months at NTE Q400/man month	Q4,000.00
4. Office supplies and duplication	Q5,000.00
5. Per-diem and local travel for local consultants	Q1,200.00
6. Miscellaneous	Q1,000.00
7. Overhead ^{1/}	Q2,500.00
	<hr/>
	Q27,750.00
	<hr/> <hr/>

1/ includes: Bibliographic and reference services
Local telephone
Light and Power
Space rental
Consultation with Academy health professionals
Graphic arts services and use of equipment and
facilities
Janitorial services.

Relation of Bibliographic System
to Areas of Emphasis of the Assessment:
(Subjects Covered per Area)

Area of Subject Emphasis Headings	Expand Coverage	Increase Productivity	Human Resources	Food and Nutrition	Environmental Sanitation	Overview
1. Demographic Characteristic	X					
2. Health and Development						X
3. Health Status	X					
4. History						X
5. Organization of Sector		X				X
6. Administration	a	X				
7. Health Manpower	a		X			
8. Physical Resources	a					X
9. Health Program Activities		a	a	a	a	
10. Environmental Sanitation					X	
11. Nutrition				X		
12. Health Planning						X
13. Health Policy	a	a	a	a	a	X

Area of Subject Emphasis (Headings)	Expand Coverage	Increase Productivity	Human Resources	Food and Nutrition	Environmental Sanitation	Overview
14. Financing	X	X		a	a	
15. Demand for Service	X	a			a	
16. Quality	a	a				
17. Auxiliary Services	X	X				
18. Social Aspects	a	a	a	a	a	
19. Donor Activities	a	a	a	a	a	X
20. Reconstruction						X

a: as pertains to area of emphasis, but not the general topic.
 X: subject principally discussed within area.

EXTERNAL TECHNICAL ASSISTANCE
SUMMARY, BUDGET, TASKS & SCHEDULE FOR U.S.A

AREA OF ANALYSIS	SKILL	Reference No.	SOURCE	SCHEDULE		ESTIMATED MM	ESTIMATED TOTAL COST	ESTIMATED COST TO	
				FROM	TO			HSA	BUDGET
I. EXTENSION OF COVER- AGE									
A. Review of Delivery System	Health Administrator	1.1.1	APHA, PAHO, OIH	Feb. 20	March 20	1	3,000	-	
B. MCH	MCH Specialist	1.2.1	APHA	Jan. 20	Feb. 20	1	3,000	-	
	Anthropologist	1.2.2	USAID/G, Harrison PSC	Jan. 15	Jan. 30	.5	1,250	1,250	
C. Family Planning	Program Analyst	1.3.1	APROFAM	Jan. 20	March 20	2	6,000	-	P/HA
	Population Specialist	1.3.2	USAID/G	Apr. 11	May 11	1	3,000	-	
	Social/Anthrop.	1.3.3	INCAP, PP/HA Fund	Feb. 7	May 7	.4	8,500	(8,500)	P/HA
	Research on FP		USAID/G	Completed		0	3,000		
D. Comm. Dis. Control	Epidemiologist	1.4.1	CDC/CARS	Feb. 17	March 4	.5	1,500	1,500	
	Anthropologist	1.4.2	USAID/G, Harrison PSC	March 1	March 4	.2	350	350	
E. Community Partic.	Anthropologist	1.5.1	USAID/G, Harrison PSC	Feb. 1	Feb. 13	.5	1,250	1,250	
F. Finca Health	Health Planner	1.6.1	USAID/G, Brown PSC	Feb. 14 Apr. 11	Feb. 28 May 11	1.5	6,750	-	6,750
	Epidemiologist	1.6.2	CDC/CARS See 1.4.1						
	Anthropologist	1.6.3	USAID/G, Harrison PSC	Feb. 14 Apr. 11	Feb. 28 May 11	1.5	3,700	-	3,700
	Ag. Economist	1.6.4	USAID/G Staff	Feb. 14	Feb. 28	.5	1,500		
G. Financing	Health Economist	1.7.1	OIH (PSSA) Robertson	Apr. 11	Apr. 30	.75	4,500	-	
H. Report Compilation	Health Planner	1.8.1	OIH and/or Brown PSC	May 12	June 12	1	4,500	4,500	
	Anthropologist	1.8.2	USAID/G, Harrison PSC	May 22	June 2	.5	1,250	1,250	
						(17.45)	(53,050)	(20,550)	

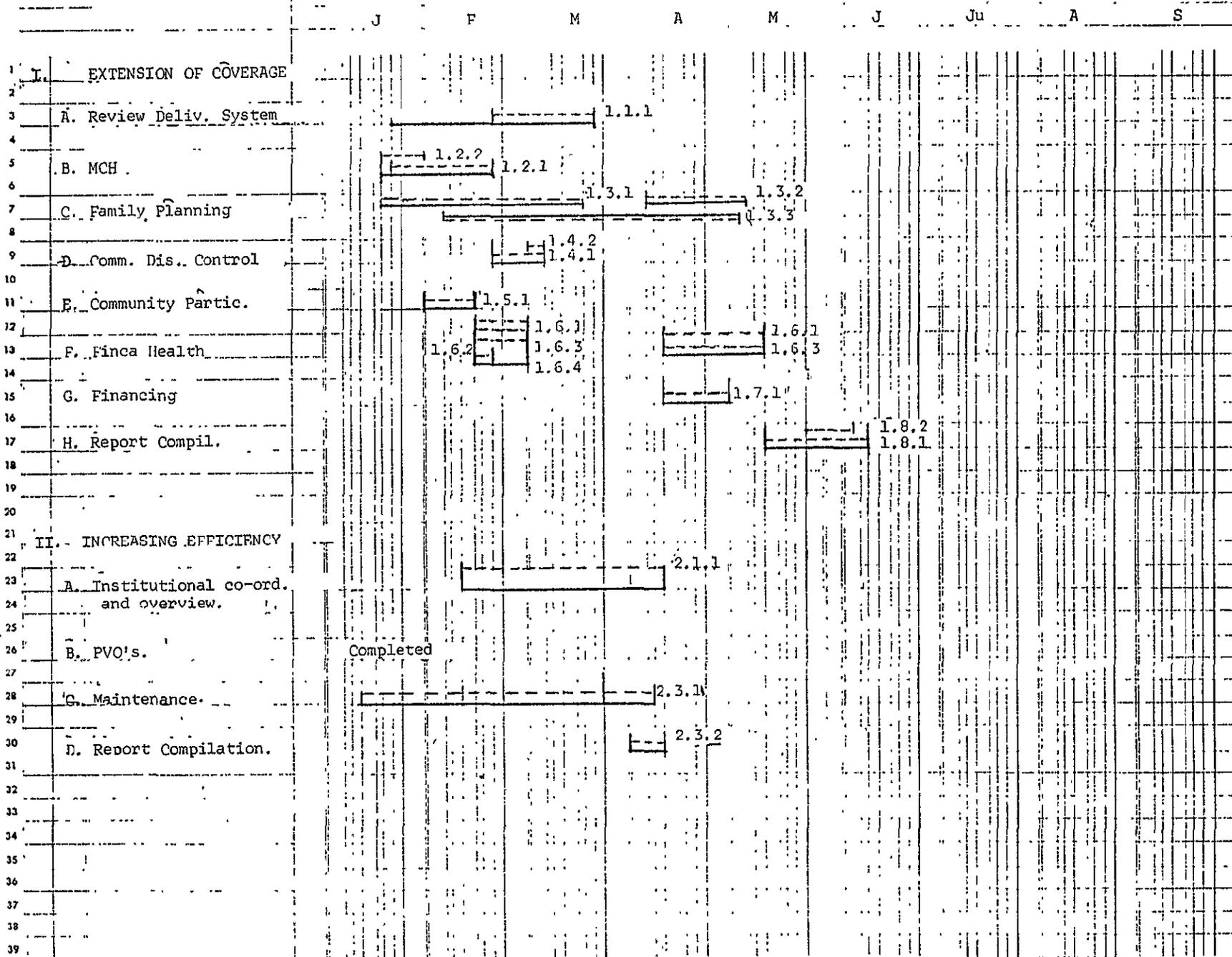
AREA OF ANALYSIS	SKILL	REFERENCE No.	SOURCE	SCHEDULE		ESTIMATED	ESTIMATED	ESTIMATED	USA BUDGET
				FROM	TO	MM	TOTAL	COST TO	
II. IMPROVED EFFICIENCY									
A. Institutional Coord.	Health Planner	2.1.1	CNPE/GOG Videla	Feb. 15	Apr. 10	2	6,000		
B. PVO Study	Health Planner/Adm.	2.2.1	USAID/G, Keaty PSC	Sept. 2 '76	Nov. 30 '76	2	4,370	4,370	
C. Maintenance	Maint. Engineer	2.3.1	FAHO or USAID/G PSC	Jan. 15	Apr. 15	3	13,500	13,500	
D. Report Compil.	Health Planner	2.3.2	USAID/G, Brown PSC	Apr. 1	Apr. 10	.5 (7.5)	2,250 (26,120)	2,250 (20,120)	
III. HUMAN RESOURCES									
A. Inventory	Manpower Planner	3.1.1	HEW	Feb. 1	Feb. 5	.5	1,000	1,000	
	Manpower Planner	3.1.2	USAID/G, Guate. Acad. Scie.	Jan. 15	Feb. 15	1	700	700	
B. Model	Economist	3.2.1	AID/W, Severn	March 1	March 21	.75	2,350		
C. Personnel Practices	Personnel & Mgt. Planner		CNPE/GOG, MSPAS, IGSS, Min. Finance	Feb. 1	Feb. 28	3	3,000		
D. Report Compil.	Manpower Planner	3.3.2	USAID/G, -Long USAID/G, Guate. Acad. Scie.	March 21 March 21	April 7 April 7	.5 1 (6.75)	1,600 700 (9,350)		700 (2,400)
IV. NUTRITION									
Phase 1.	Demog, anthrop., Nutrition planner		ROCAP/INCAP	Oct. 30 '76	April 7	4	11,000		
Phase 2.	Various		ROCAP/INCAP	Oct. 30 '76	Aug. 31 '77	8	25,000		
	Nutrition Planner		AID/W, TA/N, Poyner et. al	Oct. 30 '76	Aug. 31 '77	9 (21)	27,000 (63,000)		(-)

AREA OF ANALYSIS	SKILL	REFERENCE NO.	SOURCE	SCHEDULE		ESTIMATED	ESTIMATED	ESTIMATED	
				FROM	TO	MM	TOTAL COST	COST TO HSA BUDGET	
<u>V. ENVIRONMENTAL SANITATION</u>									
A. Water Supply & Sewage Disposal	Sanitary Eng.	5.1.1	AID/W, TA/H	Feb. 15	March 6	.75	3,200	1,200	
B. Solid Waste Mgt.	Sanitary Eng.	5.2.1	AID/W, TA/H	March 7	March 31	.75	3,200	1,200	
C. Excreta Disposal	Sanitary Eng.	5.3.1	AID/W, TA/H	Apr. 1	Apr. 21	.75	3,200	1,200	
D. Rabies Control	Veterinarian	5.4.1	AID/W or PAHO (Hubbard)	March 15	March 30	.5	2,000	750	
E. Human Resources	Sanitary Eng.	5.5.1	AID/W, TA/H	April 21	May 7	.5 (3.35)	2,000 (13,600)	750 (5,100)	
F. Community Partic.	included in I. E. 1.4.1 and 1.4.2								
G. Maintenance	included in II. C. 2.3.1								
H. Financing	Health Economist	5.6.1	OIH (PSSA) Robertson	May 1	May 11	.5	3,000	-	
I. Cultural Aspects	Anthropologist	5.7.1	USAID/G Harrison PSC	Apr. 26	May 11	.5	1,250	1,250	
J. Report Compil.	Sanitary Eng.	5.8.1	AID/W, TA/H	May 8	May 21	.5	2,000	750	
Coord. & Final Report							(1.5)	(19,850)	(7,100)
	Generalist	6.1	OIH (2)	June 7	July 7	.2	6,000	-	
	Health planner	6.2	USAID/G. Brown PSC	June 13	July 7	.75	3,400	3,400	
Administrative Unit.	HSA Coordinator	6.3	USAID/G. Keaty PSC	Jan. 1	July 31	.7	15,300	15,300	
	Manager	Guate. Acad.		Jan. 1	July 31	(9.75) 3.5	(24,700) 2,800	(18,700) 2,800	
	Local Consultants	" "		"	"	15	11,250	11,250	
	Secretarial Services	" "		"	"	10	4,000	4,000	
	Office Supplies & Duplicating	" "		"	"		5,000	5,000	
	Per Diem and local travel	" "		"	"		1,200	1,200	
	Miscellaneous	" "		"	"		1,000	1,000	
	Overhead 1/	" "		"	"		2,500	2,500	
						(28.5)	(27,750)	(27,750)	

1/ Includes bibliographic and reference services local telephone, light and power, space rental, consultation with Academy health professionals, graphic arts and use of equipment and facilities, janitorial services.

HEALTH AND NUTRITION SECTOR ASSESSMENT
GUATEMALA 1977

(Keyed to p.42-44 Summary, Budget, Tasks and Schedule for HSA)

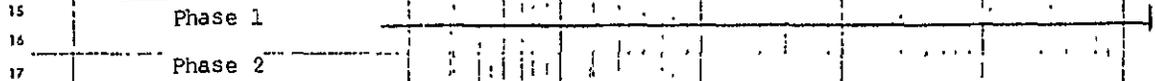


J F M A M J Ju A S

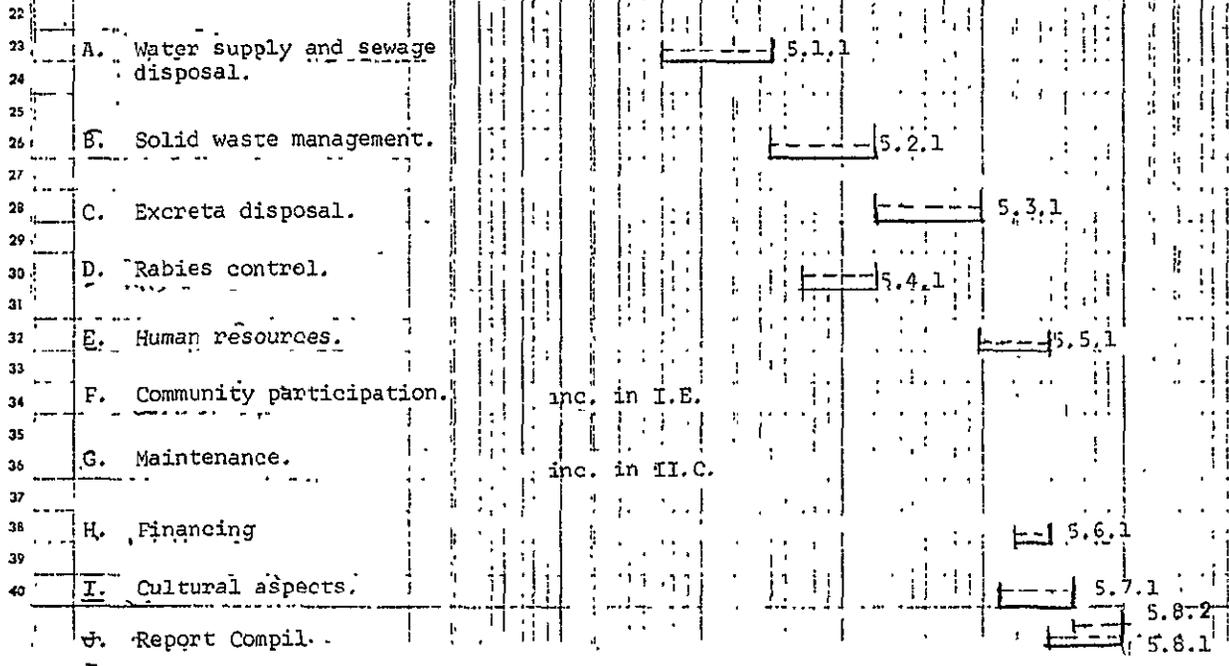
1 III. HUMAN RESOURCES



14 IV. NUTRITION



20 V. ENVIRONMENTAL SANITATION



CONSULTANTS - IN - COUNTRY AND EXTERNAL

SUMMARY	INCAP	DIS	CNPE	MSP	IGSS	MIN, FINANCE	AID/W	USAID/G	APROFAM	CDC	APHA	HEW/OIH	PAHO	ACAD.	TOTAL
I. EXTENSION OF COVERAGE	4		1	1				8.2	2	5	2	2.75	1	.5	22.95
II. INCREASE EFFICIENCY			3	1	.5	.5		5.5					3	.5	14.00
III. HUMAN RESOURCES			1.5	.5	.5	.5	.75	2.5				5		1	7.75
IV. NUTRITION	12		1		1		9							1	24
V. ENVIRONMENTAL SAN.		1	1				3.75	5				5	.5	3	10.25
Coord. & Final Report								7.75				2			9.75
Admin. Unit															
TOTAL	16	1	7.5	2.5	2	1	13.5	24.45	2	5	2	5.75	4.5	6	88.70

Note: 1/ Totals do not necessarily agree with those in External Assistance, Summary Budget, Tasks & Schedule for HSA. In several cases, schedule offers alternative organizations to provide consultants (e.g. OIH or PSC). All alternatives are included in this table.

2/ 15 MM local consultants are shown in Acad. budget; 9 MM will involve consultants from CNPE, IGSS, DIS, etc. 6 MM will be contracted by Academy from other sources.

	ESTIM. MM	ESTIM. TOTAL COST	ESTIM. COST TO HSA BUDGET
I. EXTENSION OF COVERAGE	17.45	53,050	20,550
II. IMPROVED EFFICIENCY	7.5	26,120	20,120
III. HUMAN RESOURCES	6.5	9,350	2,400
IV. NUTRITION PHASE I	4	11,000	
V. ENVIRONMENTAL SANITATION	3.35	13,600	5,100
Coord. & Final Report	9.75	24,700	(48,170) 51%
Administrative Unit	28.5 ^{1/}	27,750	18,700 20%
	(77.30)	(165,570)	(66,870) 29% ^{2/}
Nutrition Phase 2.	9	63,000	(94,620) 100%
TOTAL	86.30	228,570	94,620

^{1/} Includes 15 MM of local consultants for I - V.

^{2/} If 15 MM local consultants excluded from Administrative Costs, administration of project reduces to 17% HSA budget or 7% estimated total cost of HSA/NSA.

Technical Support Budget
for Health Sector Analysis

Estimated Cost to HSA Budget (see page 48)	<u>94,620</u>
Technical Support FY 77 available	50,000
Supplementary Funds Needed	<u>50,000</u>
	<u>100,000</u>

Annex 1

OVERVIEW OF GUATEMALAN HEALTH SECTOR

GENERAL

The Republic of Guatemala, a Central American country bordered to the north by México and to the south by Honduras and El Salvador, is characterized geographically by the Sierra Madre mountains which effectively regionalizes the nation. In 1976 it is estimated that Guatemala has a population of 6.4 million; of which nearly two-thirds are located in rural areas. Including Belice, the country has an area of 131,800 Km² resulting in an average population density of 52.8 inhabitants per Km². However, density ranges from a low of 1.1 people/Km² in the Department of El Peten to a maximum of 617.3/Km² in the Department of Guatemala. Population growth has been calculated at 3.1% annually which if this rate persists, indicates a doubling of population in about 23 years.

HEALTH STATUS

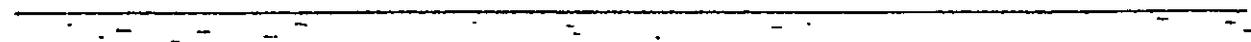
Life expectancy at birth in 1970 was 53.2 years, one of the lowest levels in Central America. However, this is an uneven distribution as studies done by the Planning and Statistical Unit of the Ministry of Public Health and Social Assistance have pointed out. The life expectancy for Indians groups who generally live in the rural areas is 44 years, while the rest of the Guatemalan population hovers around a 60 year life expectancy mark.

Infant mortality, a major contributor to high levels of general mortality, was estimated at 81 deaths per 1000 births in 1973. Since only 20% of all deaths are medically certified, this number is very likely lower than the actual rate.^{1/} The majority of infant and child deaths are caused by preventable infectious diseases and diarrhea. Malnutrition must be considered the underlying catalyst generating lowering levels of protection against infections. The INCAP study of 1965 revealed that approximately 80% of all children under the age of 5 years suffered from some degree of malnutrition.

THE ENVIRONMENT

Many of the diseases which inflect Guatemala with elevated mortality and morbidity levels are water-borne and/or fecally-related. Therefore, it is not unexpected that only 40.5% of the urban population has home connection for potable water. There are still 53 municipal country-seats which don't enjoy the service of potable water, and in the rural areas only 12% of the population has clean water.

The other side of the equation - excreta disposal - also represents a serious problem. Only 40% of the urban population has sewerage, while for all intents and purposes no system exists in the rural areas.



^{1/} Underreporting of deaths is estimated to be at least 10% overall, probably higher for infants.

CURRENT HEALTH PROGRAMS

As in most countries, there are several distinct sources of health service in Guatemala. These may be summarized under the following categories:

- (1) Ministry of Public Health and Social Assistance (MOH)
- (2) Guatemalan Institute of Social Security (I.G.S.S.)
- (3) Other Governmental Entities
- (4) Organized Voluntary Entities
- (5) Private Sector (modern and traditional)

The largest organized programs are under the control of the first two categories above, the MOH and I.G.S.S. The fifth category however (the private sector), must be substantial, although little quantitative data are available on its extent. A few highlights may be presented on each of these categories.

(1) Ministry of Public Health and Social Assistance

This Ministry was established in 1944 and is the principal governmental agency responsible for health services, both curative and preventive (personal and environmental) throughout the nation. Over the last 30 years it has gradually grown in importance, as additional governmental funds have been allotted to it, and additional resources, both human and material, have been acquired. In general, the resources and services of the Ministry have been heavily concentrated in the national capital

(Guatemala City), but in the last five years, increasing attention has been given to strengthening the services in the rest of the country, especially for the rural population.

The programs of the Health Ministry include the preventive activities typical in Latin America, emphasizing control of the communicable diseases, environmental sanitation, and maternal and child health. But the Ministry also operates hospitals throughout the nation, and its health centers and health posts offer curative services along with the preventive.

(Both general and special facilities) were reported as follows:

	<u>Facilities</u>	<u>Beds</u>	<u>% Beds</u>
Guate. Depto.	11	4,851	58
Rest of nation	<u>27</u>	<u>3,492</u>	<u>42</u>
T O T A L	38	8,343	100

It may be noted that 58 percent of the hospital beds are located in the metropolitan capital department where 24 percent of the population reside, while 42 percent of the beds are intended to serve the remaining 76 percent of the population.

As noted, however, heavy emphasis has been put in recent years on strengthening the rural health services, and this has been done mainly through increasing the facilities and personnel for ambulatory services, both preventive and curative. As of 1976, these ambulatory care facilities were as follows:

	<u>Health Posts</u>	<u>Health Centers</u>
Guate. Dept.	20	43
Rest of nation	<u>88</u>	<u>391</u>
Total	108	434

The above are from conversations with the Division of Programing MOH, July, 1976.

Damaged beyond repair in the 1976 earthquake were: 3 Hospitals, 5 Health Centers, and 46 Health Posts. Another 11 Hospitals, 22 Health Centers, and 25 Health Posts were damaged but are repairable. These statistics are particularly significant because most of the damage was done to rural facilities. In the quake area, 70% of the Hospitals, 51% of the Health Centers and 39% of the Health Posts were seriously damaged.

Negotiated before the quake and modified after, a International Development Bank Loan of \$32,600,000 has been signed to construct 5 Hospitals, 53 Health Centers, and 170 Health Posts. If all facilities are constructed as planned, by 1980 the new inventory will be:

44 Hospitals
161 Health Centers
614 Health Posts

Most of the health centers are staffed by a single doctor plus auxiliary personnel, these being designated Type B Centers.

Type A health centers have a staff of two doctors and a small

number of hospital beds for maternity cases, trauma, and other simple conditions that do not require referral to a hospital. The health posts are staffed only by allied health personnel, usually an auxiliary nurse who has had only a few months of training following elementary school. As a result of a new training program started in 1972 with USAID assistance, 67 health posts have recently be staffed with a new type of Rural Health Technician (TSR or "Técnico de Salud Rural"). The TSR has received two years of training (at a special center in Quirigua) following secondary school, which stresses preventive services, rather than solely primary treatment. Division of programing, MOH, reported 2,650,000 physician consultations in 1976. The nation-wide rate for consultations is an extremely low figure of about 0.3 consultations per person per year (about one-twenty-fifth of the U.S. rate of 5.0 contacts per prson with doctors); in the metropolitan department, however, it is much higher at about 0.7 consultations per person per year. These rates only include physician visits since the majority of rural consultations are performed by non-physicians. Significantly, approximately 3% of all visits in 1973 were classified as "initial" this indicating a low rate of MOH service use on a follow-up basis.

In 1974 the Ministry of Health spent 25,181,000 quetzales (one quetzal = one U.S. dollar) or about \$4.60 per person per year. Based upon data from an earlier year, about two-thirds of this is spent in the capital department and one-third in the rest of the country. Furthermore the great bulk of expenditures go for curative services in hospitals - about 80 percent - with only 20 percent going for the support of all the health centers and health posts, as well as training activities.

%

To carry out this work, the Ministry had in 19... a personnel complement of 12,400 persons. The largest share of these, about 3,000 were auxiliary nurses; registered nurses, 600. The doctors numbered 700, but virtually all of these conduct private practices as well - even the Director General of Health, whose official workday ends about 4 p.m., after which he sees private patients. This pattern is, of course, common in Latin America, where official salaries are so low that the doctor naturally wants to enlarge his income with private earnings.

(2) Guatemalan Institute of Social Security (I.G.S.S.)

A law for work-injury compensation was enacted in Guatemala as far back as 1906 - the first such law in Latin America - but it was never implemented. In 1946, the social security legislation now in effect was passed in the wake of World War II.

As in most Latin American social security systems, the greatest share of the I.G.S.S. resources go for medically-related purposes - over 62 percent in 1972. In fact, if the administrative costs of the medical care program, as well as the direct expenditures, are considered, the total would amount to about 75 percent of expenditures. Also, as in most other Latin American countries, the percentage of the population actually covered by the program is quite small - hardly 10 percent. In so far as general medical care is offered, it is currently confined to covered workers in the capital department of Guatemala.

Outside the metropolitan department, however, the health -related

services offered to covered persons, are rather unique in Latin America. They are confined to the treatment of accidents - both work-related and other. This unusual definition of benefits means that, outside the metropolitan center, the I.G.S.S. has had to set up a network of facilities and staff, the functions of which are confined to treatment of trauma. This constitutes, of course, only a small fraction of health care needs. On the other hand, covered workers - unlike many Latin American countries - include those engaged in agriculture, provided they work for an employer who has 5 or more workers (3 or more in the capital department) and the work-tenure has exceeded six months. Because of this restrictive definition, however, only 27 percent of the nation's agricultural workers actually have social security protection.

Coverage of dependents for any health-related benefits is also confined to the metropolitan department, and their entitlements are also limited. They include maternity care for the wife (legal or "common law") of the insured worker, and general medical care of children only up to two years of age. (Working women who are insured in their own right are intitled to general medical care in the capital department) More specifically, the covered population and the services to which they are entitled are as follows (for 1974):

	<u>Guate. Depto.</u>	<u>Rest of Country</u>
General medical care	165,906	-0-
Maternity services (wives)	86,537	-0-
Accidents of all types	-0-	333,520
Child care (to age 2)	40,000	-0-

Thus considering any health-related service, about 626,000 persons or about 11 percent of the 1974 population of Guatemala are covered. For general medical care, however, only the primary workers and their small children in the metropolitan department (about 206,000) or about 4 percent of the national population are covered.

To provide this combination of services, the I.G.S.S. maintains a complement of hospital facilities and beds as follows (1973):

	<u>Hospitals</u>	<u>Hospital Beds</u>
Guate. Depto.	7	1,257
Rest of country	<u>24</u>	<u>841</u>
T O T A L	31	2,098

It is evident from the above figures that in the capital department, the hospitals are relatively large, averaging 180-bed capacity, while in the rest of the country the I.G.S.S. hospitals are small with an average of 35 beds. In fact, some of the non-metropolitan beds consist of those in special wards rented from the hospitals of the Ministry of Health - contracts

being in effect in about 10 such MOH hospitals.

In addition, the I.G.S.S. operates ambulatory care facilities (1973) as follows:

	<u>Clinics (Consultorios)</u>	<u>First-Aid Posts</u>
Guate. Depto.	7	4
Rest of country	<u>8</u>	<u>20</u>
T O T A L	15	24

From the benefit entitlements, it is evident that the 11 (7 plus 4) of these units in the capital department provide general medical care, while the 28 (8 plus 20) in the rest of the country are limited to the treatment of trauma cases. Of these trauma cases, it is of interest that of the 139,000 treated in 1973, some 70 percent were work-related and only 30% were outside of work. Since it is very likely that non-work accidents (at home, on roads, elsewhere) are actually commoner than those in employment, one might infer that an appreciable share of non-work-connected accidents among covered persons are not receiving care under the I.G.S.S. programs.

Funds to finance the entire I.G.S.S. program are derived from statutory contributions from employers and workers. As noted above, these are mandatory in enterprises with 3 or more workers in the capital department and with 5 or more workers elsewhere in the country-including both industrial and agricultural

enterprises. Workers in both private and governmental employment are covered, although the vast majority - 87 percent in 1973 - are in the private sector. The percentage of wages or salaries that must be paid to the social security fund for health-related services varies as between the capital department and the rest of the country, corresponding to the differential benefits. These rates are represented in the following tabulation:

	<u>General sickness & Maternity</u>	<u>Accidents</u>	<u>Total</u>
Guate. Depto. Employer	4%	3%	7%
Worker	2%	1%	3%
Rest of country Employer	-0-	3%	3%
Worker	-0-	1%	1%

The total income of the I.G.S.S. in 1973 was \$27,181,000. On the basis of the 75 percent estimate for health-related benefits stated above, this would mean about \$20,385,000 for health services - an amount only slightly less than that spent by the Ministry of Health which is expected to serve the entire population. This imbalance, frequently observable in Latin America, is naturally reflected in the resources available to insure workers compared with the rest of the population. Hospitals beds, for example, may be calculated to be available at a ratio of 4.2 per 1,000 insured persons and only 1.5 per 1,000 in MOH facilities serving

the general population. Moreover the amplitude of personnel and equipment available per bed in I.G.S.S. facilities is much higher. It has been estimated as involving expenditures of about \$23 per patient-day, compared with between \$3 and \$14 per patient day (perhaps an average of about \$8) in MOH facilities. This differential is explained both by larger relative members of personnel and higher salaries for them in I.G.S.S. facilities.

In 1972, the I.G.S.S. program provided a total of 954,000 ambulatory consultations (including both sickness and accidents) in the Department of Guatemala. For the 177,000 eligible persons in the metropolitan department that year, this amounted to 5.4 ambulatory health services per person per year. This may be compared with the nation-wide figure of 0.2 such services per person per year in MOH facilities, reported earlier. (Within the Department of Guatemala, where the MOH ambulatory services were 0.5 per person per year, the differential was still more than 10 to 1.)

(3) Other Governmental Entities

The armed forces in Guatemala, as in most countries, have a well developed health service program, with its own hospitals and medical personnel. To a lesser extent this also applies to the national police. The "civic action" program of the military forces also includes some health activities in rural districts.

The national Ministry of Public Works is responsible for construction

of public systems of sanitation - both water supplies and sewerage systems - in cities and towns throughout the nation

The University of San Carlos is an autonomous entity which derives most of its funds from the government through the Ministry of Education. It operates Guatemala's school of medicine, which graduates about 300 doctors per year. Quite relevant to national health needs is the requirement that all final year medical students must provide a year of service to the government, principally outside the national capital. Thus, in 1974, of the approximately 300 graduates, 190 went to a rural district; half the year is usually spent in a non-metropolitan hospital and the other half at a health center. The Director-General of Health points out, however, that these young "interns" spend more of their time carrying out socio-medical surveys than in rendering health service.

Ultimately, it has been estimated that in recent years, of the medical graduates of San Carlos University, about 10 percent get appointments in the social security or Ministry of Health program, 15 percent go abroad for further study, and 75 percent go directly into private practice; of the latter about half stay in the national capital and half go elsewhere. Exact data on this medical manpower flow would obviously be worth obtaining.

Directly responsible to the President of the Republic - or more specifically his wife - is a program of social welfare for mal-nourished children which includes medical care along with the nutritional build-up given in special facilities.

Finally, among governmental entities providing health services, note must be taken of Guatemala's 327 local municipalities. Many of these, especially the larger ones, take responsibility for water supply systems, garbage disposal, and other aspects of environmental sanitation. In addition, some provide limited personal health services, such as emergency first-aid stations or maternal and infant health clinics.

(4) Organized Voluntary Entities.

Private voluntary organizations (PVOs) play a large part in Guatemala, health care delivery, especially in reaching isolated groups. Thirty-One PVOs reported in 1974 that they quoted medicine in public health programs.

With few exceptions, the PVO's are supported by religious missions. The church-related "benificencia" hospitals found in many Latin American countries play a small part in Guatemala, and are found in remote rural areas. Numerous ambulatory care clinics under different religious and non-religious sponsorships exist throughout the country. The Mary Knoll Fathers operate the largest program of clinics and Hospitals. One of the better known of the non-religious sponsored programs is the project for health service and training of auxiliary health workers in Chimaltenango. Started originally by the Lutheran Church from the United States, the project is now supported by a private foundation established by the

project's director, Dr. Carroll Ehrhorst. This project is unique in its policy of having the "promotores de salud" chosen by the villagers themselves (currently about 60 are at work) and its inclusion of an agricultural loan and educational program. Funds for this and other similar types of PVO programs come from voluntary contributions both from abroad and from wealthy families in Guatemala. In 1974, 54 PVOs expenditures in health and other community development activities was estimated to be \$5,855,067 per year. Subsequent to the quake estimates are that this number has at least doubled and that medical programs constitute a very large post of total expenditures.

The Red Cross in Guatemala, as in many countries, is devoted largely to providing emergency health services in the national capital and in several other cities throughout the country. These involve operation of first-aid stations, ambulance transportation, blood collection and distribution, and so on. Red Cross Volunteers give instruction in courses on first-aid and also assist in governmental programs for mass immunization or in attendance at Ministry of Health clinics. The Red Cross society is subsidized by governmental grants, in addition to its support from private donations and volunteer (non-remunerated) services. The Society to Protect the Child provides nutritional and some medical services in the national capital. The Lions Club also provides certain health services for poor children. National Lotteries raise thousands of Dollars each year for eye care and Childrens Services.

To fight specific diseases there are other voluntary agencies.

The League Against Cancer is one of the most important of these; it is playing a significant part in establishing a new hospital in the national capital for treatment of cancer patients with the most modern methods of surgery, radiation, and chemotherapy.

There are also voluntary societies concerned with the fights against tuberculosis, heart disease, poliomyelitis, and other disorders. The specific programs of these agencies, of course, also require investigation.

(5) The Private Medical Sector

While not organized in the sense applying to the previous health agencies described, the private sector of medical care is very important in Guatemala, and it must not be overlooked in planning for improved health services. It may be subdivided into the traditional and the modern resources.

Traditional health personnel consist of general healers of "curanderos", who are usually men, and traditional midwives who are always women. A large proportion of the country's 327 municipalities are totally without trained physicians, even though most may have health posts staffed by auxiliary nurses. In these doctor-less localities, estimated as containing about 2,000,000 population, the local population (largely pure Indian) must depend for treatment of their ailments on traditional healers and midwives. Even in the

communities where there are health centers or hospitals staffed with trained medical personnel, studies have shown that many people especially in the older age groups - prefer to seek their medical care, either initially or entirely, from traditional healers.

Since about 80 percent of Guatemalan births occur outside of hospitals, the Ministry of Health has begun conducting training programs to upgrade the performance of traditional midwives. Nothing comparable, however, has been done with the "curanderos". The new program for training Rural Health Technicians (TSR's), mentioned above, has required secondary school graduation for entry, and "curanderos" would rarely if ever be this qualified. Consideration is being given, however, to reduce the entrance requirements to primary schooling (6 years) and to shorten the training period from two years to one.

Among modern scientific health personnel in the private sector, most important are physicians. In 1973, Guatemala was reported to have 1,270 active doctors or a ratio of about 1: 4,300 people, which is a low doctor population ratio among Latin American countries. Moreover, as so often is the fact, about 920 or 75 percent of these are located in the metropolitan capital, where under one-fourth of the population lives.

It must be realized that the vast majority of these doctors work part of their time in the organized programs of the Ministry of Health, the social security institute , or some other agency.

Only a small fraction (which ought to be quantified) are exclusively in private practice. Nevertheless, virtually every Guatemalan doctor spends at least part of his time - typically in the afternoons - in a private medical office. Private practice is much more lucrative per hour, so that it has been estimated that about 50 percent of all Guatemalan doctors' earnings is derived from private patients. These come from not only the small percentage (estimated as about 8 percent) of the population who are affluent, but also from some of the balance of the population, especially in the towns and cities, who do not wish to use of the public programs for which they are eligible. In serious illness, even very poor families may make financial sacrifices to obtain the services of a private doctor.

The private sector also includes, as of 1973, about 115 dentists, for an extremely low ratio to population of about 1: 48,000. Virtually all of these do part-time in one of the organized programs, while also maintaining private offices. The heavy concentration of dentists in the national capital applies to about the same degree as it does to physicians.

Commercial pharmacies must also be counted as part of the private sector, although their number was not available to us. As in other Latin American countries, many poor people with ailments go directly to a pharmacy for medications, thereby saving the cost of visit-

ing a physician. Over-the-counter dispensing, without a medical prescription, is done with little legal control.

Information on optometrists, hearing aid dispensers, or other private practitioners in Guatemala was not available, but should ultimately be obtain.

Some of the larger agricultural enterprises, like the Standard Fruit Company, and even some local "fincas" (plantations), operate small hospitals and clinics, attended by doctors on a part-time basis. Guatemalan law requires that all finca provides a first aid station. Typically work accidents are sent to the IGSS facilities. Being isolated company towns, the provision of services requires a very different approach than that used in the pueblos, but this is an area of great need and should be pursued vigorously. Finally, there are a number of small private hospitals throughout Guatemala, which are mainly concentrated in the national capital and a few other principal cities, and number something less than 38 with about 1,200 beds. The latter figures appear in government reports to indicate all hospitals outside of those sponsored by the two major agencies MOH and I.G.S.S. Some of these "other" facilities are operated by religious or other non-profit agencies, and some are "property" in the American sense. With the average capacity amounting to 32 beds. Payment for services varies depending upon the group supporting the Facility. In some the patient pays nothing in others the full cost of care. Geographically the

PVO hospital serve isolated, rural groups while other serve the affluent in the capital. Taken altogether, MCH hospital have 76 percent of the beds in Guatemala, I.G.S.S. hospitals account for 14 percent, and all other sponsorships for about 10 percent.

National Health Plan

The National Health Plan forms a part of the National Development Plan, 1975-79, which was prepared by the National Planning Council. Five major priority areas are emphasized.

- 1) Extension of health service coverage.
- 2) Increased efficiency of the current health system.
- 3) Human resource improvement.
- 4) A national food and nutrition policy.
- 5) Environmental health.

Within these five general policy areas specific goals were established by the Plan. Some of these were a 46% reduction in infant mortality, a 60% reduction in mortality of children between 1 and 4 years, a reduction of maternal mortality by increasing prenatal, delivery, and post-partum coverage to 60% of the eligible population. Most of these goals are to be attained through a strengthening and improving of the existing MCH delivery system.

International Donors

The USAID has a long history of health assistance to Guatemala. Most recently, in 1971 and 1972, two health loans, totally \$4.65

million, were approved with the object of improving rural health services. As a result, a new health work, Técnico en Salud Rural (TSR), was created. The T.S.R. was to focus on rural outreach preventive health care. Because of the special requirements of this position, a new training institute was established in Quirigua. As a complementary part of the loans, health posts, health centers, and hospitals were renovated and equipped.

In 1976 AID approved a grant providing for the evaluation of the direction of the Academy of Sciences, the evaluation team is being put together and baseline data collection will begin in the third quarter of 1976.

The Inter American Development Bank in June, 1976 approved a loan for \$28.0 million which provides for construction and equipping of regional hospitals, health centers, and health posts. Included in the loan package is a \$375,000.00 grant for technical assistance, part of which will prepare plans for a projected 1977 IDB \$30.0 million for hospital reconstruction in Antigua and Guatemala City.

The Pan American Health Organization (PAHO) maintains close cooperation with the MOH in projects as diverse as malaria eradication, environmental sanitation, anti-rabies vaccination, laboratory control of foods, medical training, and development of health services. As a component of PAHO, the Institute of

Nutrition for Central America and Panamá (INCAP) continues to provide technical expertise and research in the area of nutrition.

CARE and Catholic Relief Services have been involved mostly in food distribution programs and construction of rural water and letrine systems.

PROJECT REVIEW PAPER
LOW COST RURAL HEALTH SYSTEM IMPROVEMENT

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I. PRIORITY AND RELEVANCE

A. Project Goal

The goal of this project is to improve the well-being of rural Guatemalans by increasing the quality and coverage of low-cost basic rural health services.

B. Project Purpose

The proposed loan will increase and improve the effectiveness of rural health technicians (TSR's), who as trained paramedics, are the key agents in the GOG's rural health system, through:

- 1) strengthening the ministry's ability to provide administrative, technical and supervisory support of the TSRs, and
- 2) financing public health outreach projects developed by TSR and the communities in which they work.

C. Background and Strategy of Project

Rural ill-health in Guatemala arises from the presence of a dispersed, largely illiterate, indigenous population, many of whom do not speak the national language, Spanish. The health deficits have their roots in dirt, poverty, and ignorance, and have been compounded in the past by the limited outreach of a health system based on hospital curative medical services. Materials and appropriately trained manpower, too, are scarce; and such resources as exist have been improperly distributed and utilized. Some health indicators are as follows:

Life expectancy at birth is 45 years for Indians and 61 for non-Indians. Infant mortality rates are 89 per 1,000 live births, 30 per 1000 for children aged 1-4, and 16.4 per 1000 in the aggregate. The major causes of death (with rates per 100,000) are:

Enteritis and diarrhea	329
Undefined	205
Influenza	131
Other pneumonias	104
Measles	44
Malaria	43
Anemia	40
Whooping-cough	40
Nutritional deficiency	37
Homicide	27

Eighty percent of all children under 5 have protein-calorie malnutrition. Of the country's 1,200 doctors, 16% are abroad and 70% are in the capital city. In five departments (accounting for a fifth of the population) there is 1 doctor per 68,710 inhabitants. The country has 27 hospitals (with 13,203 beds), 78 health centers, and 329 health posts to serve a population of about 5.8 million. Eighty-five percent of the rural population (3.3 million) have no ready access to potable water, approximately 80% have no household latrine, and garbage disposal systems are virtually non-existent.

The Ministry of Health and the Guatemalan Institute for Social Security are the two largest organizations in the health sector. The Ministry, with an annual budget of some \$36 million, is responsible for providing health services to the whole population at low or no cost. The Social Security Institute provides accident services for the whole country and also sickness and maternity care (including preventive medicine and rehabilitation) to some 442,000 insured persons and 135,000 dependants. These services reach 29% of the economically active population and a tenth of the total population. As pointed out in the approved USAID DAP (p. 53) the problem of health-care delivery lies in three disparities; the disparities of expenditure and needs (curative versus preventive); the disparity between resource distribution and population distribution; and the disparity between the growth of the population and the rate at which services can be extended.

Early in 1971, the Ministry of Public Health and Social Assistance embarked on a program intended to improve the level of health care to the rural population. This program envisages the training of two new levels of

auxiliary personnel; at level 1, health promoters and native midwives minister to basic needs in the community; and at the level of health posts (level 2), the rural health technicians (TSR) and auxiliary nurses provide preventive, promotive and some curative services. Level 3 and 4 are the referral and support system, and include medical care in regional hospitals and specialist care in the national reference hospital. Figure 1 illustrates the current referral concept and TSR public health functions.

In devising a rural health strategy, the GOG recognized that the majority of rural health problems could be best addressed through preventive health programs. Accordingly when the TSR approach was devised in response in large measure to the lack of trained human resources, their training emphasized the public preventive health functions. However, if this approach is to achieve its maximum potential, adequate support in terms of technical and financial resources must be available. The proposed loan is designed to help the GOG develop a more effective support mechanism which will include technical backstopping organized at area district levels as well as funding to finance health impact projects developed by TSR's and the communities in which they work. By making it possible for the health system to respond to preventive health needs, the role of the TSR's as community health leaders will be strengthened as will their motivation to maintain their focus on the public health aspects of their community work. In the absence of a follow-through capability, experience in other countries has shown that such paramedical personnel will lose their public health orientation. (See Figure 1 for an outline of the rural patient referral system.)

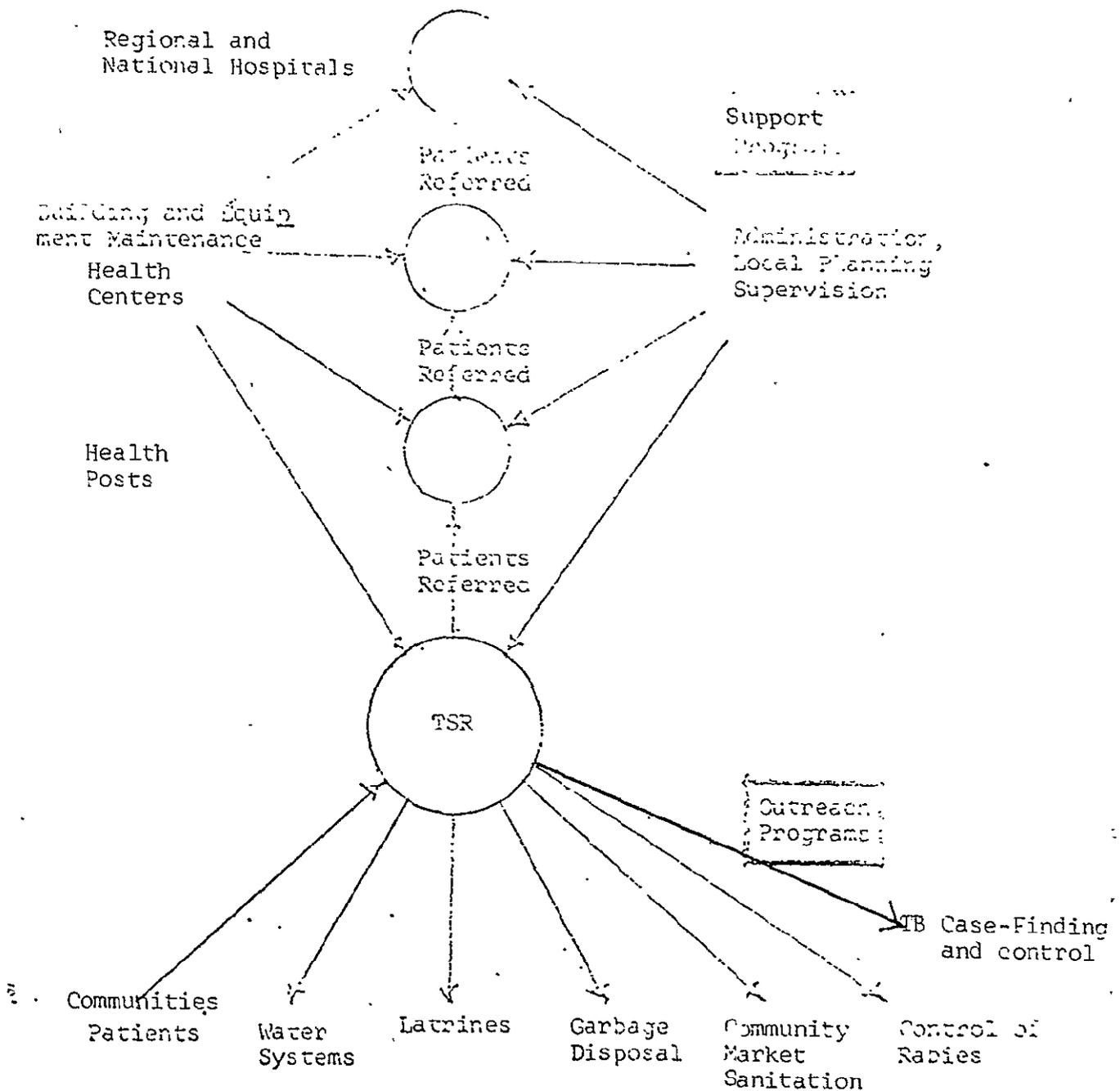


FIGURE 1

The T.S.R. is the focus of health services to the rural poor. The consequences of his activities necessitate reinforcement of the health care delivery system support programs. The T.S.R. becomes more effective through the community self-help programs he organizes (Outreach Programs).

II. AID AND OTHER RELEVANT EXPERIENCE

Since 1971 AID has provided a total of \$6.4 million to the GOG to extend health services to the rural poor. The bulk of this assistance was in two loans (020 and 021), totalling \$5.9 million which helped establish the GOG's comprehensive health care delivery program. Loan funds were allocated for rehabilitation of training facilities for medical auxiliaries; the construction and rehabilitation of rural health posts and centers; renovation of area hospitals; training of medical auxiliaries, first-line medical maintenance workers, and field supervisors; and provision of equipment, materials and vehicles.

In FY-1976 USAID/G will assist the Government to begin a rigorous evaluation of the effectiveness of the delivery system for rural health services. Information gained from this evaluation exercise will not only provide important insights into the results and operation of the health system, but will also establish a national methodology which may be utilized by the MOH and by lending agencies elsewhere.

In addition to the nation-wide rural health program, AID has also provided an OPG grant for a model rural potable water and latrine construction program in small agricultural communities in the department of El Quiché. The projects, administered by CARE/Agua del Pueblo, are introduced into the community by the health system's TSR, working with local self-help committees. The community provides voluntary labor and locally available material for the construction of the water system and latrines.

The national rural health delivery program has already attracted wide interest in Latin America, and similar programs have been started or are in the planning stage in Costa Rica, Nicaragua, Perú and Brazil. The build-up of rural health services in Guatemala, with outreach to the majority of the population, will have increased impact on other countries seeking models for improving their own rural health services.

III. DESCRIPTION OF THE PROJECT

The Government of Guatemala, as Borrower, will channel the loan (\$3.5 million) through the Ministry of Health. Funds will be utilized to finance two major types of activities:

- Strengthening MOH backstopping systems for TSRs (i.e. administrative, planning, supervisory and technical support systems);
- Carrying out community health impact programs.

A. TSR Backstopping

AID's rural health loans I and II were concentrated on establishing the physical and human resource base needed to extend health and medical care. The provision of facilities and equipment and the training of selected personnel for direct service functions, however, are just the beginning of a functional preventive and curative health system. These systems must depend upon a series of support activities. One such activity which is already in place is a patient referral system whereby patients receive increasingly sophisticated levels of medical care. Complementary activities to support the public health function of the TSRs do not now exist. Therefore, the GOG has requested AID assistance to develop a program through which public health administrative and technical support services can be strengthened.

At present there is no satisfactory functioning supervisory system for health personnel working in rural areas. There are a few exceptions where some particularly capable and interested people are giving good supervision to lower and mid-level health workers. But overall comprehensive and adequate supervision is lacking. As a result, there is a risk that TSRs will lose their motivation and consequently their effectiveness to develop and implement public health programs. Continuous reinforcement is necessary and in fact TSRs have begun to complain about lack of supervision and technical back-up.

Proposed is development of an area team concept through which administrative and technical backstopping services can be provided to the TSRs. Teams would include medical, sanitary engineering, nursing, and administrative skills. Loan funds would be utilized to fund technical assistance, training and equipment costs for the teams. In addition, specialized training for area directors and their support staffs would be supported under the loan.

Specific training activities which will be financed follow:

- Out-of-country training for area directors in health administration management.
- In-country training for area and district level staffs in supervisory techniques and basic management skills.
- In-country training for technical backstopping team members in conjunction with TSRs in diagnosing community health problems and devising corrective measures.

Training will be practically oriented and will involve workshops and site visits.

Technical assistance will be financed to design and help teach training courses (21 m.m.). Two local consultants will be hired to help assist during training programs and do follow-up work with trainees once they return to their home areas.

The loan will finance materials, equipment and vehicles to support training and supervisory activities.

B. Community Health Impact Programs

This component of the project is aimed at strengthening the role of the TSR as a community organizer by providing a means for financing health impact projects in those communities willing to undertake self-help programs with the assistance of TSRs. Each of the five illustrative impact programs described below is designed to attack a specific health problem area and to provide the TSR a "tool" by which he can increase his acceptance and effectiveness within the community.

In order to understand how these programs would be utilized by the TSR, a brief descriptive example is offered. After initial contact with a community, the TSR would make a judgment as to which programs, if any, are needed by the community and which would be feasible given technological and social constraints. He would then consult with the community itself to ascertain their willingness to organize and participate. The TSR would be responsible for developing the outreach program with appropriate assistance from the area backstopping team and central Ministry personnel.

Illustrative programs which would be eligible for loan financing are:

1. Village Potable Water Systems and Latrines

Since enteritis and diarrheal disease is the principal cause of mortality in Guatemala, and since potable water and latrines are available to only about 5% of the rural population in Guatemala, the provision of potable water and latrines is a high priority. It is proposed to extend the coverage of rural population served by potable water systems and to provide household latrines.

Participation in the CARE Village Water Systems and Latrine Construction project is strengthening the capacity of the Health Ministry's Division of Sanitary Engineering. The TSR undertakes the organization of community committees for the project, labor is donated by the potential beneficiaries; and the Sanitary Engineering Division provides the necessary surveys, acquires rights, necessary materials and appropriate technical assistance. The experience with TSRs in the planning of 16 rural village water systems in El Quiché department has been very encouraging so far. The TSRs have managed to get a high degree of community involvement, and they, in turn, have been positively motivated to continue their work in preventive health programs. They have received good supervision under the pilot program administered by CARE/Guatemala.

Under this loan, the TSRs will participate in the construction of 200 rural village water systems and 35,000 household latrines.

Loan financing would be provided for short-term in-country training of TSRs to enhance their skills in evaluating the social and technical feasibility of community requests for rural water systems.

In-country technical assistance would be required for program design and implementation, and for design of the short-term TSR training.

USAID will finance materials, including cement and pipe, for construction, and technical equipment for the MOH Department of Sanitary Engineering at the area level to assist them in performing the preliminary hydrological engineering surveys.

2. Village Garbage Systems

Rural Guatemalan areas have no system for garbage disposal at present. For this reason, rotting garbage becomes a source for the spread of enteric diseases. The TSRs will organize committees to direct the construction of village garbage disposal systems.

Disposal techniques will be limited to simple composting procedures for organic materials and the burying of non-biodegradable materials. Local voluntary labor will be the primary input into the disposal system, but AID financing will be required for simple collection equipment, e.g. carts drawn by hand or horse, limited technical assistance for design of collection and disposal procedures and supplementary TSR training.

These projects directly support the TSRs' role in community health education. In addition to the expected reduction of the spread of enteric disease, a fringe benefit will be the availability of composted material for use on nearby agricultural land.

3. Community Market Sanitation

At present, the markets and other public places are notorious as epicenters for the spread of disease as a result of their unsanitary conditions.

As a measure to control the spread of enteric diseases, it is proposed that the TSRs expand their health education activities to eliminate sources for the spread of enteric diseases in food markets and other public places.

While a sanitary inspection and enforcement function exists in the health hierarchy, it emphasizes identification of sanitary code violations and their redress through punitive measures. The TSRs will assist the community to identify and correct sanitation problems before official action becomes necessary.

Project funds are required for supplementary limited technical assistance to design a model for a feasible system and materials and equipment for sanitary facilities such as water and cleaning systems at the markets.

4. Control of Rabid Animals

In 1974, over 200 animals were proven to be rabid and all reported cases of human rabies, proved to be fatal. The main problem in rabies control appears to be in stray dogs, and the problem exists in both rural and urban areas. It is unfeasible to vaccinate all dogs and other vectors, so a rabies control program should include both vaccination of domestic animals and the eradication of stray dogs. Such a program necessitates the provision of cages for the observation of suspected rabid animals and equipment for collection and transmission of materials for pathological examination.

To accomplish this program in rural areas, the TSR will be the principal agent who will involve the community. Appropriate short-term in-country training will be provided for the TSRs, as well as their supervisors and area directors. Technical assistance for project design and the design of the training program will be provided by PAHO.

5. Tuberculosis Case Finding Control

There are an estimated 45,000 cases of tuberculosis in Guatemala, with about 1,000 deaths per year from tuberculosis. At present, there exists little tuberculosis case finding and follow-up in rural areas.

Early diagnosis and modern treatment are making ambulatory care the norm for uncomplicated cases. Follow-up care for ambulatory cases is a crucial element of the modern, reduced cost TB treatment regimen.

Since TSRs know the communities they work in intimately, it is logical that they play a key role in case finding and in follow-up of confirmed cases of tuberculosis.

They would work in accordance with national and/or area strategies for the control of tuberculosis. This would include the collection of sputum samples from all suspects, the making of slides from these samples, and the forwarding of these slides from these samples, for reading to a central laboratory. The TSRs have been trained in some laboratory methods, but up to now have had little chance to use them. Their work might also include the use of PPD and/or BCG. It is not contemplated that the TSRs would themselves do the reading of slides for tuberculosis.

The TSR would arrange for the referral of all positive or highly suspicious cases to the physician for further diagnosis and the prescribing of treatment. The follow-up of confirmed tuberculosis cases would be the other major part of their job. If the area in which the TSR works follows the national tuberculosis incidence of 0.8/100, it can be expected that eventually each TSR will have about 40 cases of tuberculosis in his region. It would probably be feasible to ensure fairly good compliance with drug regimens using this system, and probably near impossible without this system.

The program would require short-term in-country training for the TSRs (about 1 month). Supervision would be by the physician supervisors with appropriate technical assistance from other MOH Divisions.

Technical assistance in program design and evaluation will be provided as necessary.

IV. PROJECT BENEFICIARIES

The project is aimed at improving the health and self-help capacity of the rural poor of Guatemala. Comprising some 3.5 million persons, the majority have incomes of less than Q.80.00 annually. They live dispersed or in small populated aggregates, difficult of access and isolated by barriers of language, custom and prejudice.

The TSR, recruited from and knowledgeable about the area he serves, forms the catalytic link between the availability of improved health services and its destined beneficiaries.

The support portion of the loan directs its attention to the administrative, planning, supervisory/technical, and maintenance sub-systems of the delivery system. Consequently, the direct beneficiaries are the members of the support system: area medical directors, hospital directors, district physicians, administrative assistants, maintenance personnel and TSRs. However, the entire thrust for improving the system is to provide more efficient and effective health care to the rural population and thus can be considered as the indirect beneficiaries of this part of the loan.

The other loan component addresses itself directly to the rural population by providing for the improvement of the sanitary environment through the proposed outreach programs. More-

over, these programs establish the catalyst by which community organization and cooperation can be created and nurtured. His prestige and social standing in the community should be increased, making his health delivery role that much more effective.

Major Direct and Indirect Beneficiaries

<u>Proposed Activity</u>	<u>Direct Beneficiary</u>	<u>Indirect Beneficiary</u>
1. <u>Support Programs</u>		
(a) Improvement Area Directors	Health Services in Region & Area	Rural Population <u>1/</u>
(b) Improvement of Area & District Level Staffs	Health Services in Region & Area	Rural Population
(c) Improvement of Technic- al Backstopping of TSR & Other Auxiliaries	TSR & Other Au- xiliaries	Rural Population
2. <u>Outreach Program</u>		
(a) Village Water and Latrines	Rural Population	TSR
(b) Village Garbage System	Rural Population	TSR
(c) Control of Foods & Cleanliness of Public Places	Rural Population	TSR
(d) Control of Rabid Animals	Rural Population	TSR
(e) TB Case-Finding & Control	Rural Population	TSR

1/ Majority have annual incomes of less than \$80 per year.

V. FEASIBILITY ISSUES

For the most part the administrative, managerial and technical support tools which will be supported in the proposed loan have been utilized in other Latin American countries such as Mexico and Venezuela where they have been proven to be effective instruments for the controlling and monitoring of health systems. There is no inherent reason to believe that such skills cannot be taught to and used by personnel within the Guatemalan system. Nevertheless, there are aspects of the proposed loan which warrant further study and analysis.

1. The first issue deals with the success of the on-going CARE water supply and latrine construction program. Although the initial indications are quite hopeful, it would not be prudent to implement a national program without an adequate evaluation of CARE's model project.
2. The second issue focuses on the design of the TB Case-Finding and control program. As demonstrated by the excessively high TB mortality and morbidity rates, the need for such a program is beyond question. There exists an indigenous PVO Liga Contra TB which will be contacted concerning past experiences in the country and for advice on the proposed project design, to supplement MOH experience in TB programs. Such pre-implementation consultation would serve two purposes: it would provide a feasible project design based on past Guatemalan experiences; and, it would involve an additional element of the Guatemalan private sector in the development of the rural health system.
3. The entire concept of village garbage disposal systems has to be comprehensively examined. At the present little is known about present patterns of solid waste disposal in the rural areas. Therefore, it would be necessary to mount a study of current disposal patterns which would make recommendations on the most technologically, socially, environmentally, and financially acceptable methods of disposing of garbage in rural villages.

VI. OTHER DONOR COORDINATION

The Inter-American Development Bank's proposal to provide capital assistance through the Government of Guatemala to the development of low-cost rural health systems have been discussed during USAID's regular coordinating meetings with other international donors. On November 28, 1975, AID and the IDB project appraisal team that is analyzing the GOG request, met to exchange views. Though final design of the IDB loan is not complete, it is expected to focus on the construction of health facilities, national health planning and administration, provision of equipment and vehicles, and establishment of maintenance units. The project concentration on curative facilities and staff appears to complement AID public health activities. Close collaboration is being maintained between AID and IDB as the respective loans develop to maximize the effectiveness of their supportive aspects.

Such collaboration will be especially important in the area of maintenance of medical facilities equipment and vehicles which serve both public health and curative medical functions. Though the Mission's PID projected assistance to the GOG in improving their maintenance capability, it now seems probable that the IDB will finance this activity. USAID plans to work with the GOG and IDB to ensure that its maintenance activity will adequately serve MOH requirements, particularly those essential to optimum efficiency of the TSR. In the event that the proposed IDB/GOG maintenance program does not meet the needs of the TSR, every opportunity will be exploited to incorporate such services within the scope of this project.

The IDB has recently signed an agreement with the GOG for a loan of \$7 million to provide 105 rural water systems. These systems will be constructed wholly by the GOG and do not contemplate substantial local input either of materials or of labor. The project does not include latrine construction nor sanitary educational programs.

In contrast, the thrust of the proposed AID activity is aimed primarily at improving community self-help capacity and enhancing the effectiveness of the TSR by providing him with one of a number of alternative action tools. The project includes latrine construction, depends heavily on community organizations and contribution and contains an educational element essential to the fulfillment of the project purpose.

The GOG expects to request complimentary technical assistance to the AID loan in the area of rabies control

VII. SUMMARY COST ESTIMATES AND ILLUSTRATIVE FINANCIAL PLAN

- In Thousands U.S. Dollars -

<u>ACTIVITIES</u>	<u>AID</u>	<u>GOG</u>	<u>TOTAL</u>
A. <u>TSR Backstopping</u>			
Upgrading technical capabilities of backstopping teams	125	75	200
Developing supervisory and management skills of backstopping teams	100	75	175
Improving area health administration management	75	75	150
	—	—	—
Sub-Total	300	225	525
B. <u>Impact Programs</u>			
Water Systems and Latrines	1,900	700	2,600
Village Garbage Systems	250	450	700
Sanitation of Markets and Other Public Places	300	250	550
Rabies Control	50	125	175
Tuberculosis Case-Finding and Follow-Up	50	75	125
Inflation and Contingencies	650	375	1,025
	—	—	—
Sub-Total	3,200	1,975	5,175
	—	—	—
T O T A L	<u>\$3,500</u>	<u>\$2,200</u>	<u>\$5,700</u>
PROJECT PARTICIPATION	(61%)	(39%)	

VIII. PROJECT IMPLEMENTATION

Negotiations and project design during intensive review will be carried out with the Ministry of Health, in close collaboration with the National Economic Planning Council. Following execution of the Loan Agreement MOH will be responsible for project implementation. This includes the contracting of all services, the procurement of all equipment and materials, training, and advisory assistance. AID will monitor the project and assist the MOH in complying with the Loan Agreement and AID regulations. Construction of facilities will be arranged by the MOH, based upon reasonable technical and financial procedures.

Over the past three years, the MOH has provided increasingly capable administration of the two previous Health Loans. There is reason to expect that capability to continue and to grow.

Periodic evaluation of the project will be accomplished through the proposed Health Evaluation Grant which is scheduled to begin in FY-1976. In addition, special evaluations through field trips and observation will take place as necessary.

The Mission's management responsibilities will be to negotiate agreements to provide in-country technical assistance, and to monitor and evaluate progress toward stated goals.

IX. PROJECT DEVELOPMENT

A. Project Paper Submission

It is projected that the Project Paper will be submitted during the period June-July, 1977.

B. Approach to Project Development

Project development will be carried out by the Ministry of Health and the Mission working in close collaboration. Four to six m.m. of advisory services will be required beginning in July, 1976 to complete the project development process.

In addition, the Mission will conduct a health sector assessment during the first 6 months of CY-1976. This assessment will provide valuable analytical and technical background for the development of this project.

A formal revised DAP health statement is not included with this PRP. The Mission confirmed the validity of its DAP in conjunction with the submission of the FY-1977 ABS and notes that the criticality of the problem which this project addresses was clearly set forth therein, on pages 57 and 58.

We have begun to plan to conduct a sector assessment during the first half of 1976. To initiate the assessment, we propose to submit a draft scope of work for the study for DAEC review in mid-January. Initial discussions regarding the scope of the assessment and technical assistance requirements have been held with Mr. Daly of OIH/DHEW. The Mission also has discussed the nature and scope of the planned assessment with TA/H.

C. Project Development Activities

During the project development, the MOH and the Mission will refine the priorities and criteria for the sub-projects to be financed by the loan. These analyses will result in the identification of sub-projects to be initiated during the first year of disbursement under the loan.

Based upon the projected needs and existing skills of key personnel in the area and district level under the MOH decentralization, detailed training plans will be developed.

Toward the end of the project development phase, USAID and the MOH will again contract advisors for assistance in drawing up detailed budgets, financial projections, training plans, implementation schedules, evaluation indicators, etc. This material will form the basis for the Project Paper, Loan Agreement, and the MOH's budget and work plans.

D. Advisory Services Required

The Mission expects to utilize the following kinds of consultant services for project development:

Health Administration/Systems Specialist. In order to assist in the definition of the functional roles of individuals at the area and district level, it will be necessary to obtain expertise in the area of health administration and manpower.

Sanitary Engineer. Assistance will be needed to help establish standards and criteria for the development of the outreach programs affecting the sanitary environment.

E. Project Committee

The following personnel will form the Project Committee responsible for pre-authorization work:

1. Frederick W. Schieck Deputy Director
2. Dr. E. Croft Long Public Health Advisor
3. Douglas Martin Deputy Capital Dev. Officer
4. George Hill Program Officer
5. R. Carey Coulter Program Economist
6. John Kahle Regional Legal Advisor
7. Charles Flinner Controller, ROCAP/USAID
8. Dan Miller Chief, Regional Engineering Office ROCAP

plus specialized consultants.

Assistance in preparation of the PRP was provided by Messrs. Becht, Lebow and Loomis through a TA/H contract with the American Public Health Association.

Approved: _____

Edward W. Coy
Director
USAID/Guatemala

Drafted by: FWSchieck; ECLong; DMartin; GAHill

December 3, 1975

PRELIMINARY LOGICAL FRAMEWORK MATRIX

HEALTH LOAN III

2
INDICATORS

3
MEANS OF VERIFICATION

4
ASSUMPTIONS

GOAL

Improve the well-being of rural Guatemalans by increasing the quality and coverage of rural health services.

Health status of rural population.

Morbidity and Mortality Statistics.

Decision makers make appropriate interpretations of community priorities and attempt to make rational resource allocation and management decisions using data.

PURPOSES

Improve effectiveness of TSRs as the key agents in the GOG's rural health system through:

- 1) Strengthening the Ministry's ability to provide administrative, technical and supervisory support of the TSRs, and;
- 2) Financing public health outreach projects developed by TSRs and the communities in which they work.

EOPS:

1. Public health support staff functioning in each area of Guatemala in support of TSRs and other health auxiliary personnel.
2. TSR's established as the primary community village health agent in Guatemala's rural health delivery system.
3. MOH investments in public health directed in support of TSR developed community programs.

Achievement of the end of project status will be directly assessed by the MOH rural health system evaluation project.

Ministry continues its increasing interest in improvement of rural health services, particularly improvement of sanitary environment, potable water systems and fortification of role of medical auxiliaries.

CONTENTS:
BACK-UP PROGRAMS

1. Trained regional and area medical directors and assistants.
2. Trained supervisors for medical auxiliaries working in rural areas.

MAGNITUDE OF OUTPUTS
BACK-UP PROGRAMS

1. Trained area and regional administrators and assistants for 22 areas.
2. Trained supervisors for medical auxiliaries for no less than 30 rural areas.

MEANS OF VERIFICATION
BACK-UP PROGRAMS

1. Review training programs and evaluate numbers of graduates and their location of employment and effectiveness.
 2. Review training program, and evaluate number of graduates, locations and effectiveness.
- MOH allows project personnel to attend courses of instruction, to implement new system of administration, to provide needed back-up facilities and staff. Also allow project personnel access to need information centrally and in field.

OUTREACH PROGRAMS

1. Installation of village water systems, latrines and supervision and education programs to ensure maintenance and usage.
2. Construction and operation of village garbage disposal systems.
3. Improved control of cleanliness of foods and public places in rural localities.
4. Construction of animal isolation unit with facilities to transmit pathological samples to capital for testing for presence of rabies units.

OUTREACH PROGRAMS

1. Construction of approximately 200 village water systems and 25,000 latrines.
2. Construction and operation of approximately 150 village garbage disposal systems.
3. Improved control of cleanliness of food and public places in approximately 150 rural localities.
4. Construction of approximately 1 animal isolation unit in each rural municipal capital.

OUTREACH PROGRAMS

1. Field visits by USAID, reports, local interviews, photographs.
2. Field visits by USAID, reports, local interviews, photographs.
3. Review reports of sanitary inspectors from MOH.
4. Field visits by USAID, reports, local interviews, photographs, statistics on numbers of rabid animals diagnosed and human mortality statistics.

5. Tuberculosis case-funding and control in rural areas.

5. Establish TB case-funding and subsequent control in approximately 150 rural locations.

5. Field visits by USAID, reports, local interviews, statistics on number of slides collected, TB incidence and prevalence rates, human mortality statistics.

INPUTS

MAGNITUDE OF INPUTS

MEANS OF VERIFICATION

AID FINANCED TECHNICAL ASSISTANCE COSTS

See financial plan

ANNEX 3

Guatemalan Health Sector Assessment Bibliographic
Reference File

In order to provide a data base for participants in the assessment, an extensive collection of existing data on the sector has already been made. The material has been organized under headings for each individual study, article, official report, or other type of data classified by a number and listed under one of the appropriate headings. A 5 x 7 index card with the author, title, and abstract of what the study contains has been prepared in duplicate so that a document may be located by study number in a chronological file, or by author from an alphabetical file.

Both the card index files and the studies themselves are to be kept on file in the Health Division at USAID/Guatemala for use throughout the assessment. It is very important that all consultants, AID/W personnel, and other assessment participants be aware of this information resource, be fully briefed on its use, and use it in their analysis of an assigned assessment topic. Because, in some cases, the scope of work recommends a relatively brief analysis of a particular program or problem, this literature review may provide enough information for completion of the study.