

**SUSTAINABILITY OF U.S. SUPPORTED HEALTH PROGRAMS
IN HONDURAS**

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EXECUTIVE SUMMARY

This report is the first in a comparative series of historical evaluations of the sustainability of U.S.-supported health projects. The central question is: "What factors of project design and implementation account for the sustainability of project outputs and benefits after U.S.-funding has terminated?" To answer this question, a group of consultants and AID staff developed a new methodology and applied it to a historical field review of all U.S. government-supported health projects in Honduras since the 1940's.

AID and its predecessors funded seventeen specific health projects since the 1940's. These included five projects that supported the Servicio Cooperativo de Salud Publica (Cooperative Public Health Service), a separate U.S.-run agency which built water systems and health service facilities and carried out anti-malaria campaigns from 1942 to 1964. In the 1960's, AID supported rural water supply programs of the autonomous water agency (SANAA), efforts to eradicate malaria through the autonomous malaria agency (SNEM) and an ill-fated family planning project. In the 1970's, under the Honduran primary care initiative -- the Rural Penetration Program -- AID sponsored the training of auxiliary nurses, a project to provide hand pumps and latrines, and nutrition planning. Since 1980, AID has provided funding for a new rural water and sanitation project and a multi-component Health Sector I project, including related child survival programs (Mass Media for Health Practices, and Changing Maternal/Weaning Practices) and family planning. Since the programs of the 1980's are on-going they could not yet provide evidence for sustainability.

Sustainability is a complex and relative concept. It was defined as the continuation of project outputs and benefits (outcomes) after AID funding is terminated. We found it useful to distinguish between sustainability of immediate outputs (e.g., trained human resources, or hand pumps and latrines installed during the life of the project) and the replicating outputs necessary to reproduce immediate outputs (e.g., schools, construction agency). In addition, we found that once AID funding stopped, some project outputs could be sustained with national funds, however, usually replicating outputs were sustained with funds from other donors.

Focusing on three cases of high degrees of sustainability (auxiliary nurse training, rural water supplies, latrine and pump projects) and three cases with low degrees of sustainability (family planning, malaria and nutrition projects) the following significant relationships were found:

- 1) National commitment to project goals was essential to the sustainability of project outputs and benefits. Projects which Hondurans did not consider high priority (e.g., family planning and nutrition) were not well sustained. However, national commitment alone did not guarantee sustainability. One project had high national commitment but was not sustained after U.S. and other donors terminated funding.

- 2) Cooperative negotiations between AID and the Ministry with regard to project objectives, design, and implementation contributed to sustainability. Projects viewed as AID imposed projects were not well sustained.
- 3) The organizational design of projects was also important. Vertically organized projects, in several cases generated institutional resentment which jeopardized project sustainability. Integrated projects tended to be more sustained but at lower levels of effectiveness. A multi-component matrix organization, which combines several vertical sub-components with an integrating managerial and planning structure, might provide the basis for achieving sustained high levels of effectiveness.
- 4) Projects that were perceived to be effective during the life of the project were more likely to be sustained than projects which were unable to achieve anticipated outputs. However, effectiveness did not guarantee sustainability.
- 5) Project sustainability can be jeopardized if many foreign donors support the same activity -- as they did in the malaria projects of the 1960's -- and if donors terminate funding simultaneously. Projects which receive support from other donors after AID funding stops are likely to sustain AID project outputs.

Other factors were not as clearly related to sustainability. While it was clear that financing of projects is important to sustainability and the current unprecedented rapid growth in AID and other donor financing is likely to jeopardize sustainability in the long term, it was not clear what characteristics of project financing contributed to sustainability. There was no clear relationship between sustainability and size of AID funding, national assumption of recurrent salary costs, cost recovery, and proportion of the national health budget devoted to hospitals. Similarly, size and duration of technical assistance, training components and community participation were not significantly related to sustainability.

AID should more clearly define the objectives of sustainability in future projects. It should not expect all outputs to be sustained, nor should it expect projects to be sustained only with national funds.

However, if the conclusions of this study are confirmed by future studies, AID should draw lessons for the design of future projects which can enhance the sustainability of those projects. AID should support projects with strong national commitment, negotiated with mutual respect and designed with a matrix organization. It should emphasize project effectiveness but not make effectiveness the overriding concern. Finally, it should avoid duplicating efforts of other donors and coordinate a sequence of follow-on support from other donors.

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We must particularly acknowledge the essential contribution of all the experienced, thoughtful and freely-given observations of the key Honduran informants we interviewed - especially our Honduran counterparts, Drs. Alcerro, Alvarado and Guzman. We hope that this project will assist them in their plan to write a history of the Honduran public health system. Our report depends heavily on the detailed accounts and long historical experiences of the many Honduran informants noted in our list of interviews.

In addition, Lic. Elia Pireda of the Facultad de Ciencias Medicas, UNAH and Lic. Gertalina Cerrato, Ministry of Health, provided reports on auxiliary nurse training; and Carlos Tabon, an economics student at UNAH, assisted in the economic analysis of this report.

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Finally, the conceptual insight, encouragement and experience of our Advisory Panel - Abraham Horwitz, former Director of Pan American Health Organization; Karl Kendall, Johns Hopkins University; Stewart Blumenfeld, URC; and Wayne Stinson, URC; greatly enhanced this project.

GLOSSARY

USAID	U.S. Agency for International Development
ASHONPLAFA	Asociación Hondureña de Planificación Familiar (Honduras Family Planning Association)
CARE	The Cooperative for American Relief Everywhere, Inc.
CESAMO	Centro de Salud (health center, with medical officer)
CESAR	Centro de Salud Rural (health center, without medical officer)
CONSUPLANE	Consejo Superior de Planificación Económica (Superior Council for Economic Planning)
CRS	Catholic Relief Service
ESF	Economic Support Funds
GOH	Government of Honduras
HSI	Health Sector I
ICA	International Cooperation Administration
IDB	The Inter-American Development Bank
IHSS	Instituto Hondureño de Seguridad Social (Honduras Institute for Social Security)
INCAP	Instituto de Nutrición de Centro América y Panamá (Nutrition Institute of Central America and Panama)
IPPF	International Planned Parenthood Federation
JNBS	Junta Nacional de Bienestar Social (National Welfare Board)
MCH/FP	Maternal and Child Health/Family Planning
MOH	Ministry of Health
MSH	Management of Sciences for Health (contractor for Health Sector I)
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy

PAHO	Pan American Health Organization
PANI	Patronato Nacional de la Infancia (National Committee for Children)
ROCAP	Regional Office for Central America and Panama (AID)
SANAA	Servicio Autónomo Nacional de Acueductos y Alcantarillado (National Autonomous Service for Aqueducts and Planning System)
SCISP	Servicio Cooperativo Interamericano en Salud Pública (Interamerican Cooperative Service for Public Health)
SNEM	Servicio Nacional de Eradicación de la Malaria (National Service for the Eradication of Malaria)
UNAH	Universidad Nacional Autónoma de Honduras (National Autonomous University of Honduras)
UNDP	The United Nations Development Program
UNICEF	United Nations Children's Fund

Exchange Rate: 1 dollar = 2 lempiras, generally for all years mentioned in the report.

INTRODUCTION

This evaluation focuses on health project sustainability: the degree to which project outputs and outcomes in U.S. government funded health projects were continued in the period up to 5 years after U.S. funding had ceased. Our objectives were:

1. To refine the definition and methodology for examining sustainability in one case - the Honduran case - as a basis for future comparative analysis;
2. To apply that methodology in a retrospective historical field review of U.S.-supported health projects in Honduras since the 1940's;
3. To provide information for the design and implementation of future health projects.

This evaluation breaks new ground in several ways. By examining sustainability of projects, it focuses on an issue of current concern in the Agency, but one that has not necessarily been a major objective of past or current projects. It therefore does not assume that sustainability was an objective of the initial projects. Indeed, some projects, such as the malaria eradication projects of the 1960's assumed that once they achieved their objectives, project activities could cease and the benefits would continue. It is also recognized that other objectives, such as achieving immediate short-term benefits, might be viewed as more important priorities than the long-term sustainability of project activities and benefits.

Furthermore, although in our analysis we examine the effectiveness of projects as a factor that might contribute to sustainability, this analysis is not an impact evaluation. In a long-term historical perspective the rigor and detail of an impact evaluation could not be achieved - although we were able to make extensive use of prior impact evaluations. The sources for our study were project reports and evaluations and many interviews with Honduran and donor health officials - both current and past - but no original impact research was possible in the time frame of the evaluation.

Sustainability is a relative phenomenon. All projects we examined had some elements that were sustained and others that were not. We found it useful to define two central characteristics of the sustained outputs:

1. There is a difference between outputs of a project that were put into place during the life of the project and began to provide immediate benefits to the population -- immediate outputs -- and those outputs that
2. were designed to replicate the immediate outputs -- replicative outputs.

In other words, there is a difference between sustaining the auxiliary nurse who is trained by the project and sustaining the nursing school which will train new auxiliary nurses after the project ends.

A second issue is the source of funding for the continuing activities. While an objective of development projects might be to have projects continue only with national funds, governments have often been successful in obtaining funding from other donors in order to continue project activities initiated by U.S. government funds. With many external donors providing funding for health projects, it is possible for national governments to continue health activities without having to allocate national funds to the programs.

Successfully sustained projects were defined as those in which a major portion of the immediate project outputs and outcomes continued to be effectively utilized and provide benefits after U.S. funding was terminated. Half of the cases we examined in detail were successfully sustained. Furthermore, all of these projects were sustained with national government funds.

The more demanding objective of sustaining the replication outputs was also achieved in half of the cases. However, in only one case were these outputs achieved with national funding.

This evaluation developed a framework of analysis and a methodology for examining the concept of sustainability in a comparative historical perspective. Based on extensive initial reviews of the issue of sustainability provided to the team, and on advice received in the field and in briefing sessions, we identified nine aspects of the design and implementation of AID projects which might have (were hypothesized to have) influenced the ability of the Honduran government to sustain programs after AID assistance had terminated. Particularly useful for developing this framework were the reports of Shirlie Buzzard, Stewart Blumenfeld and Marty Pipp, Lois Godiksen and Joseph Leiberson, et al. (21,14,15,55,82,83)*. The nine factors** are:

1. National Commitment to Project Goals
2. Project Negotiation between AID and Honduran Authorities
3. Institutional Organization of the Project
4. Financing
5. Technical Assistance
6. Donor Coordination
7. Training
8. Community Participation
9. Project Effectiveness

*see Bibliography for citations

**It should be noted that we considered examining the role of the private sector in sustaining project outputs; however, there was not sufficient information on the Honduran private sector for such an analysis.

Using this framework, we developed a series of hypotheses relating each of these factors to the potential sustainability of project outputs and outcomes (see Annex H for details on methodology). We then examined each hypothesis in six separate case studies of major U.S. government supported health projects over the last forty-five years. These case studies explored malaria projects and water and sanitation projects since the 1940's; family planning projects since 1965; nutrition projects since 1976; the Honduran government's Rural Penetration Program, 1972-78; and the current Health Sector I Project. These case studies examine clusters of U.S. funded projects according to type of project (e.g., malaria or family planning) or period (e.g., Rural Penetration). Tables I and II provide a guide to the history of U.S. government-funded projects since the 1940's.

TABLE I

U.S. GOVERNMENT HEALTH PROJECTS IN HONDURAS

<u>Dates</u>	<u>Projects</u>	<u>Allocated Current US\$</u>
1943-65	Assistance Water Authority (5220009)	231,000
19??-61	Health & Sanitation (5220023)	1,250,000
1954-65	Health Training/Education (5220011)	364,000
1955-67	Health Facilities (5220010)	215,000
1958-69	Malaria Eradication (2 projects) (5220012; 5220075)	5,147,000
1963-65	Rural Water (5220044)	1,050,000
1963-69	Mobile Rural Health (5220034)	561,000
1965-76	Maternal Child Health/Family Planning (5220065)	3,774,000
1976-81	Integrated Rural Health (5220130)	1,464,000
1976-81	Nutrition Planning (5220124)	4,179,000
1978-86	Mass Media (9311018)	3,110,000
1979-81	Health Planning (522048)	399,000
1979-82	Changing Maternal/Weaning Practices (9311010)	3,560,000
1980-85	Rural Water & Sanitation (5220166)	14,800,000
1980-82	Family Planning/PVO (5220175)	440,000
1980-87	Health Sector I (5220153)	30,000,000
1984-85	Family Planning (5220225)	775,000

For each U.S. government project, using a systems analysis approach we examined: 1) the conditions in the health sector before the project began ; 2) the goals and objectives of the project; 3) the inputs in funds, materials and technical assistance provided by the project; 4) concurrent activities by the Honduran government and other international donors; 5) the implementation process of the AID project; 6) project outputs in terms of human resources, physical constructions, and institution building; 7) project outcomes: the health benefits gained by the Honduran population; 8) the status of outputs and outcomes 3-5 years after the project terminated; and 9) longer-term and unintended consequences of the project. For the large Health Sector I project now underway, our findings are largely predictive rather than actual.

Cases were selected by reviewing all U.S.-supported projects (see Table I) and selecting the most salient ones. The evaluation team and its Honduran counterparts then divided up the cases and researched them through:

1) documents collected in Washington and Honduras; and 2) interviews with major informants with knowledge of Honduran public health and the role of donor assistance.

After writing a preliminary draft of the six case studies and the synthesis report, the team's findings were the subject of a one-day workshop with the major informants and other interested participants. The workshop verified the cases - offering modest changes in fact and interpretation - and helped refine some conceptual issues.

We hope that the framework of analysis and the methodology utilized here can provide the basis for future comparative historical studies. Further, this can lead to the development of a theory of sustainability in which the relationships between the factors of project inputs and processes, as well as the mediating contextual elements and the degree of sustainability of project outputs can be identified and priority relationships established. This study is exploratory in all aspects - conceptually, methodologically and theoretically - and therefore, its findings should be taken as initiating steps and as hypotheses to be tested, not definitive conclusions.

The following report synthesizes the six case studies in order to draw lessons about each of the nine factors believed to contribute to sustainability. Each of the case studies is presented as a separate annex at the end of this report. It is useful, however, to begin with a brief overview of the Honduran context that shapes the health sector and the role of AID in that sector.

HONDURAN CONTEXT

The Honduran economy has grown fairly steadily since the 1940's. However, the general level of the economy continues to be one of the lowest in Latin America. The economy depends heavily on the export of a few primary agricultural products which have erratic markets. The "easy stage" import substitution industrialization has provided some growth in food processing and textiles for export markets. Although the population density is low, the lack of volcanic soil that provides fertility to other Central American countries has limited the potential for agricultural growth. Honduras' potential for significant economic growth has been further restricted by the current geopolitical conflict in Central America, which has caused capital flight and decreased private investment. On the other hand, this conflict has also led to a rapid increase in foreign funding of the national budget over the last five years.

Government activities in Honduras are highly politicized (152). Beginning with the dominance of the National Party, established in the Carias dictatorship (1933-1949), and continuing through most of the military governments and the current Liberal Party governments, personalism and party loyalty have dominated government policy-making. The importance of personal patron-client relations within factionalized political parties has made it difficult for governments to develop systematic policies and programmatic directions. It has also resulted in considerable turnover of personnel in government offices, especially at the higher administrative levels. This turnover also makes continuity of programs difficult. There was only one brief period when personalistic party politics did not dominate the political scene: the reformist military regime of Lopez Arellano and the subsequent military governments (1972-82). During the first military government, a moderate reform was initiated which was cut short by subsequent governments (the health program survived longer than most reforms) and toward the end of the period, personalism and patronage were restored. The political system has been only moderately responsive to lower strata demands; but, it has not generally resorted to the kind of high-level repression seen elsewhere in Central America.

Over time the Honduran government has grown in size, capabilities and responsibilities. In the 1940's, when the health sector was dominated by U.S.-run Servicio Cooperativo, the Honduran state did not have a separate Ministry of Health. However, in the 1950's it established the Ministry and began to take over the responsibilities of the Servicio programs until they were terminated in 1962. By the 1970's the Honduran state grew rapidly and took new initiatives in almost all sectors of the economy and social services. The current economic crisis, which has forced the government to adopt austerity measures, has brought a period of reduction in state activities and plans to return more of the state run enterprises to the private sector.

In the 1940's, the Honduran health system operated a series of state-owned hospitals, government and municipal water systems, and sporadic campaigns against malaria and yellow fever. Responsibility for the health

sector remained within an omnibus secretariat: the Secretary of Government, Labor and Social Services. Concern about hemispheric security and defense of strategic resources during the Second World War brought major U.S.-sponsored public health programs: the Servicio Cooperativo Inter-Americana en Salud Publica (SCISP) (156). This program was initially funded and administered almost entirely by the U.S. government, but Honduran funding and leadership were phased in over the twenty years of the program (147). This program took responsibility for much of the public health activities in Honduras during the 1940's and 1950's. It implemented major programs in malaria and water and sanitation. These activities would form the basis of two major semi-autonomous Honduran government agencies: the Servicio Nacional de Eradicacion de la Malaria (SNEM) and the Servicio Autonomo Nacional de Acueductos y Alcantarillado (SANAA). SCISP also provided scholarships for long-term training of health officials and administrators. It constructed health centers and hospitals, some of which (e.g., the Thorax Hospital) are among the most effective hospitals in service today (3).

In the mid-1950's the Ministry of Health was created and began to take over responsibility for some of the SCISP programs (119). The transition was not easily accomplished and competition and resentment between the Ministry and SCISP grew, especially as the Honduran government assumed a greater role in financing the Servicio (106). In 1962 the Kennedy administration decided to reorient foreign assistance under the Alliance for Progress and discontinued the funding for the Servicios. Both vertical programs (SNEM and SANAA) continued as semi-autonomous administrative structures under the Ministry of Health, often with the same Honduran staff.

During the 1950's and 1960's, the Ministry grew in complexity as it developed regional offices and began health planning activities, while extending coverage into rural areas with the AID-sponsored mobile units (108). A large infusion of national funds came with the National Lottery's Patronato Nacional de Infancia. These funds contributed to the creation of schools for nurses and auxiliaries, as well as to an ambitious hospital construction program (3). During the 1960's, AID also initiated a family planning program that was one of the Agency's first worldwide (see Annex C).

The massive malaria eradication campaigns of the 1960's, which had received major support from UNICEF and AID, were successful during their initial phases but began to deteriorate as resistant strains of mosquitos appeared. As both the major donors withdrew their support for the eradication program, SNEM was forced to cut back its program, and malaria incidence resurged (see Annex A).

SANAA, while effective in implementing water and sanitation programs during the Servicio period, did not maintain those systems -- allowing them to fall into disrepair by the 1960's. However, with AID support in the 1960's, new water projects were initiated which are continuing to supply water of adequate quality today (see Annex B).

In 1972 a coup brought to power a reformist government under General Lopez Arellano. With a series of new initiatives in agrarian reform, natural resources, government sponsorship of industrial development, and in the social sectors, the Ministry of Health developed a major new program called the Rural Penetration Program (see Annex E). This program rapidly extended coverage in the rural areas by constructing health posts (CESAR) and health centers (CESAMO), accelerating and reorienting the training of auxiliary nurses and a new class of health worker, the promoter, who was responsible for organizing communities and assisting them in developing water and latrine programs. The promoter and auxiliary nurse worked with community health committees, two volunteer workers with training in community leadership (representante) and basic primary care (guardian), and with trained empirical midwives (33, 126). Widespread immunization campaigns were initiated during this period. These programs received considerable assistance from PAHO, UNICEF, IDB and AID. At the same time, with funding from the IDB, the Ministry began construction of the large Hospital Escuela, and planned the construction of two regional and eight area hospitals (CHE) (70).

A change in the military government in 1978 brought a slowing down of the reforms of the Rural Penetration Program; however, the basic structure endured, and some components of the program -- the training of nurse auxiliaries and the water and sanitation program -- were maintained largely with continued AID funding. At the same time, the hospital construction projects of the IDB loan entered the construction phase and the decision was taken to expand the San Pedro Sula regional hospital to a huge 600-bed tertiary care facility.

Since 1982, when Suazo Cordoba became the first elected president in ten years and the Central American conflict accelerated, the health sector has become the recipient of increasingly large amounts of foreign funding (see Annex G). All the traditional donors (AID, PAHO, UNICEF, and IDB) have greatly increased their support. In addition, bilateral programs of the Swiss, French, Japanese, and other governments have been initiated or expanded. The largest program of assistance has been AID's Health Sector I, which is a multi-component program supporting malaria activities immunizations, diarrhea control, mass media, logistics and supply, maintenance, and other sectors (see Annex F). This program provides major assistance in management and planning and is supported by a large technical assistance team. Large water supply programs have also been supported by AID and IDB.

During this period the ministry of health has been relatively successful in maintaining a cap on hospital spending and all of the IDB hospitals that were to be finished have remained in the construction phase. However, a new IDB loan has been negotiated to finish the construction, equipping and operation of the San Pedro Sula hospital, the Comayaguera regional hospital and three area hospitals. When these hospitals come on line their recurrent costs will place a considerable burden on the Ministry's budget. In addition, a new Medical Statute, passed in 1985, has more than doubled the salaries of physicians, placing a further demand on the financial resources in the health sector.

EPIDEMIOLOGICAL TRENDS

Honduras suffers high rates of illness and infant and child mortality that are classically associated with a rural, but rapidly urbanizing and economically very poor, tropical country. The national rate of infant mortality has been generally declining for some time. Recent surveys (registration through the health system is very incomplete) yield figures of 70 to 85 per 1,000 live births. The decline from 1960 to 1980 was approximately 40 percent (100, 101).

Childhood deaths constitute approximately 45 percent of total deaths. Among the most serious childhood health problems is malnutrition, which has been estimated since the first studies in the 1950s to affect 70 percent or more of the under-five population (68). Diarrheal diseases constitute another major infant health problem. It is estimated that children under five years of age suffer an average of three episodes a year. This means that there are in excess of two million episodes per year in the under-five population. Of these, 195,000 were treated at MOH facilities in 1985.

Gastrointestinal infections were followed by acute respiratory infections as a cause of infant deaths (57). Although the incidence of immuno-preventable diseases (particularly poliomyelitis, diphtheria, and whooping cough) seems to have improved markedly in recent years, sporadic epidemics indicate that they are not yet fully controlled. Tuberculosis, malaria, and low birth weight (indicating maternal malnutrition) remain important factors in infant mortality and general health. Malaria was a major cause of death in the 1940s and 1950s and has remained a major cause of morbidity until today. The annual number of cases has generally decreased since 1980 (57, 136).

Case fatality rates (a ratio of number of deaths per cases of a disease) have declined for measles, diarrhea, typhoid fever, influenza, hepatitis, and amebiasis over the past 25 years. Rates for whooping cough and bacillary dysentery, however, do not appear to have improved substantially (57).

The annual population growth rate was approximately 2.7 percent from 1945-1961 and 3.1 percent from 1961-1974. It is estimated at 3.4 percent in the 1980s, among the highest rates in Latin America. Most of the increase is due to decreases in the mortality rate (62).

SUSTAINABILITY FACTORS

The following analysis explores the lessons learned for each of the nine factors that are believed to be related to sustainability of project outputs and outcomes. Table III presents a summary matrix of our six cases by the nine sustainability factors. The annexes contain detailed description and analysis of each case.

It should be noted that the conclusions drawn here, especially in the summaries for each factor, are based on evidence from the Honduran cases we reviewed. They should be taken as hypotheses to be tested in other countries, and not as definitive conclusions.

First we should summarize our judgments on the degree to which each project was sustained and which aspects of projects were sustained. We must distinguish between those AID-funded projects which were terminated after the external support was ended, those which continue with seriously insufficient national funding, those whose continuous performance depends on other sources of donor financing, and those which continued on the basis of national funding and could be sustained without donor support.

Different aspects of project outputs can be sustained. In most projects, outputs include both the human or material resources expected to deliver services and the institutions that are designed to produce these human or material resources. For instance, outputs of the Integrated Rural Health project were both the auxiliary nurses who deliver services and the nursing school which is designed to continue training nurses. Similarly, the water projects produce both the water systems and the institution that is responsible for constructing new water systems.

In only a few cases can we determine whether or not the project outputs produced anticipated outcomes. In malaria programs, we can roughly associate the changes in incidence of disease and deaths with changes in malaria program activities. In immunization campaigns we might associate changes in disease patterns with the campaign; however, except in Health Sector I (whose sustainability we cannot assume) and in the Servicio Cooperativo period (about which we have no reliable data on disease patterns), AID has not funded immunization activities. For the rest of the health programs, the only potentially relevant indicator of health benefits is the infant mortality data. Since so many factors can influence infant mortality, this data is only suggestive of possible project impact.

Of the six AID project cases we examined in detail, three projects had major outputs that were sustained in high degree: the auxiliary nurse training program of the Integrated Rural Health/Family Planning project (discussed in Annex E); the Rural Water project (Annex B); and the hand pump and latrine component of the Nutrition Planning project (Annex E). Three other major project outputs were not well sustained after U.S. funding ceased: malaria projects which ended in 1969 (Annex A); the family planning project which ended in 1974 (Annex C); and multisectional nutrition planning which ended in 1983 (Annex D).

TABLE III : SUMMARY OF SUSTAINABILITY FACTORS BY CASE STUDY

	Financing	Program Organization	Donor Coordination	Community Participation	Technical Assistance
Malaria Projects 1942-1986	U.S. major funder in 40's; major AID and UNICEF funds in 50's & 60's; today, GOH provides bulk of funding, with help from GO Japan and AID; sudden cut-off of AID support in '70 severely hurt program.	Always a fairly independent program, although today partially integrated. SNEM was very regimented, so had little flexibility to collaborate with other MOH programs; MOH sought to integrate deteriorating program in the 70's.	PAHO and UNICEF massive support in 60's by several donors. End of AID and UNICEF assistance around 1970 was disastrous. Good after 1979.	Became very strong in late 50's & 60's (1000's of volunteer collaborators & volunteer labor); declined in 70's; again substantial today.	Many short-term AID advisors & currently an AID long-term advisor; many PAHO long-term advisors over the years. Good development of counterparts.
Rural Water Projects 1942-1986	AID and IBD have funded most new construction; GOH has funded operations and maintenance, with assistance from user fees.	Always a fairly independent program but does not seem to have aroused as much jealousy as other vertical programs.	Little active coordination, but sequence of foreign funding has worked out well.	Community demand important in site selection; communities provided labor and local materials; pay user fees; select a (paid) maintenance person.	Many short-term AID advisors. Good development of counterparts.
Family Planning 1965-1976	Initially almost entirely AID-funded; some MOH funding in last years to support program integration.	Highly vertical; resentment led to dissolution of independent program.	Mainly an AID program, but IPPF and the Population Council provided some contraceptives.	Only in utilization of services.	1 long-term advisor. Many short-term advisors.
Nutrition Planning 1976-1981	AID contributed over 2/3 of project costs; SAPLAN was dissolved after AID funding ended.	Planning was supposed to be integrated through SAPLAN, but instead it served as a mechanism to fund unrelated projects of various participating organizations; implementation by separate organizations.	Close coordination between AID and INCAP/ROCAP.	Irrelevant to nutrition planning but important to some project-supported community projects (MOH and JNBS).	1 long-term advisor, short-term advisors from AID, INCAP and UNICEF.
Rural Penetration Program 1972-1978	AID and other donor funding was clearly important, yet government itself made substantial investments of its own funds.	Very integrated but functioned quite effectively during early years.	Generally good de facto coordination although no formal mechanism; lack of coordination, however allowed large hospital construction project to proceed.	Substantial contributions of labor and volunteers; some community decision-making within limits; participation declined slightly as program support began to decline.	Important long-term technical assistance from PAHO; AID short-term technical assistance, especially in training. Active counterparts.
Health Sector I 1980-1986	High level of AID funding, one-third for technical assistance; unlikely that GOH could take over the project costs.	Matrix design support most major MOH programs; designed to be substantially integrated into the MOH yet capable of clearing bottlenecks that often hinder integrated programs.	A fair amount of informal coordination is taking place; MOH is attempting to establish a formal coordinating mechanism.	Not a major program focus until recent local programming project; not an important factor in sustainability.	Very large long-term technical assistance component; working well but no concrete plans for phased withdrawal. Excellent counterparts.

TABLE III: SUMMARY OF SUSTAINABILITY FACTORS BY CASE STUDY

(Cont.)

	Training and Personnel	Policy Dialogue	Commitment	Effectiveness
Malaria Projects 1942-1986	AID has supported many material and other costs most personnel made transition from Servicio to SWEM, but many lost in layoffs in 60's & 70's; some staff returned after 1979.	Substantial U.S. control in early Servicio years; PAHO and AID determined basic organization and strategies during eradication period (195-79); good dialogue since '80.	Strong.	Servicio programs decreased malaria significantly as a major cause of death in Honduras. SWEM eradication set back due to vector resistance, cases imported from neighboring countries, and poor timing of external funds. With AID and UNICEF cut-off, program declined in 70's. Since '80, the program has functioned fairly well and incidence is generally dropping
Rural Water Projects 1942-1986	AID had supported mainly capital costs.	Substantial U.S. control in early Servicio years; good communication under SANAA (1958 -).	Strong.	Many Servicio projects built, but maintenance (responsibility of local governments) was poor. Most SANAA projects in 60's shown to be still functioning and producing acceptable quality of water in 80's. SANAA has functioned for almost 30 years and has had fairly consistent donor support.
Family Planning 1965-1976	Much training done but much more needed; approximately half of program staff absorbed by MOH, some others by ASHONPLAFA and hospitals.	Poor; program imposed.	Very weak.	Number of acceptors is unclear. Many persons trained by project went on the MOH and ASHONPLAFA. Organization apparently fairly effective in early years before MOH started to dismantle it.
Nutrition Planning 1976-1981	AID supported substantial training at all levels; uncertain how many people continue to use training.	Fair; program substantially imposed by AID & INCAP	Weak.	Participating organizations looked at SAPLAN as a source for funding their existing projects, not as an intersectoral authority. Some of the projects funded were successful (e.g. the Ministry of Education developed nutrition education materials and projects), but many were not effectively implemented due to bureaucratic and planning deficiencies.
Rural Penetration Program 1972-1978	AID contributed to construction of training facilities and design and implementation of training; auxiliary nurses sustained well.	Little AID influence on major decisions; AID and GOH found minor but important ways for AID to support this program.	Very strong.	Generally highly effective during 1973-78. Declining effectiveness as program expands. AID-funded auxiliary nurse program maintains effectiveness while community volunteers lose effectiveness. Water pump and latrine program quite effective over time.
Health Sector I 1980-1986	Training and material support appear to be well balanced.	Excellent; AID and MSII work closely with Honduran counterparts; some potential resentment against the success of the policy dialogue.	Strong over 3 govt's	Many sub-components highly effective. Especially, immunization, cold chain, mass media, management systems and health education.

All three of the sustained projects were able to sustain immediate outputs (outputs that provide direct health benefits during the life of the projects - e.g., auxiliary nurses, water systems, latrines) with national funds. In addition, one project (auxiliary nurse training) was able to sustain replicable outputs (outputs that reproduce immediate outputs - e.g., nurse training school) with national funds. Honduras was also able to sustain replicable outputs for two other projects (Rural Water and hand pumps and latrines) by obtaining alternate external funding from other donors.

A. NATIONAL COMMITMENT TO PROJECT GOALS

It is clear that the lack of government commitment to the goals of a project almost assures that whatever is achieved through the life of the project is unlikely to be sustained (61). The cases of family planning and, to a lesser extent, nutrition planning, clearly demonstrate this conclusion. At best the Honduran government was only mildly in favor of family planning and unwilling to confront greater opposition in the political sphere. In the case of nutrition, while no opposition appeared, there was also little active support for the program within any implementing ministry. In both these programs, during the life of the project, project outputs and outcomes fell short of goals and objectives by significant margins. The family planning program, in part because of its verticality, was temporarily able to achieve urban-based contraceptive distribution and a growth in acceptor rates despite the lack of support by the Ministry. Nevertheless, the program was dismantled, and for over ten years no significant new government programs were initiated. The relatively successful private sector family planning agency has been sustained only with almost total foreign support from IPPF.

On the other hand, government commitment does not guarantee sustainability. Commitment to malaria projects has been quite high, yet they could not be sustained at effective levels without continuing foreign funds. The malaria programs of the 1960's were not sustained in the 1970's after AID and UNICEF funds were withdrawn. The infrastructure of SNEM deteriorated continuously and malaria incidence rose.

The government's commitment to the Rural Penetration Program appears to have influenced its sustainability. Even after the enthusiastic period of the program's initiation and its relegation to a lower priority in the Ministry's activities, it still was maintained and continued with significant national funding. Nevertheless, the program sub-components that received foreign funding (training of auxiliaries and the water and latrine program) were the ones that were able to maintain, and in some cases increase, the level of program outputs. It should be noted also that the community level of the Rural Penetration Program did not continue to receive priority after 1978, and this loss of commitment contributed to the decline in this aspect of the Rural Penetration Program.

Health Sector I has also received significant government commitment from two democratic governments. The wide range of goals and objectives in the project are ones around which there appears to be considerable consensus. The Ministry had given consistent priority to diarrhea and immunization programs and appeared committed to management and planning development, even before Health Sector I was implemented. It is unclear however, how all the components

would fare if AID funding were removed. There is some evidence that the mass media program in its second phase is not achieving its goals and objectives as effectively as it did as a pilot project. In Gambia, where a similar project was recently evaluated, once the AID funding ceased, the project was basically abandoned (82). Nevertheless, as a package, Health Sector I's goals are likely to retain a high level of commitment by the Honduran government, unless the demands of the expanding hospitals overwhelm the sector.

Commitment to goals and objectives of a program has come from populations and political actors outside the government. For instance, beneficiaries of rural primary care programs have petitioned the government to provide rural water systems and medicines in the Rural Penetration Program. It is not clear that these demands or their lack, as in the case of family planning, are significant for maintaining program activities.

On the other hand, opposition from politically relevant groups may constrain program activities. Opposition to family planning from the University and the Church appears to have played a role, albeit minor, in the decision to dismantle the family planning project. Here also, however, the power of non-governmental actors has usually been quite limited.

To summarize: National commitment to the goals and objectives of a project was essential to the sustainability of its outputs and outcomes; however, it was not sufficient.

B. PROJECT NEGOTIATION

The success of the relationship between AID and the Honduran government is related to the commitment of both governments' to mutually defined goals and objectives (167). In situations where the U.S. government appeared to be imposing its program on the government of Honduras, the sustainability of project outputs was endangered. The clearest example of this situation is the family planning project of the 1960's. This project was viewed by Hondurans as a U.S. initiative and its privileged, vertical organization further strengthened this perception. The project was dismantled when AID funding ended, and resistance to U.S. initiatives in the family planning area has remained high. Indeed, it is argued that the searing experience with the U.S.-imposed program has made opposition to family planning more enduring than it might have been.

On the other hand, both malaria and water programs, beginning with the Servicio Cooperativo period, could only be sustained with further donor financing, even though the government and AID jointly determined goals and objectives.

When U.S. project negotiation was supportive of national programs and plans, as in the Rural Penetration period, the program was easily sustained. AID-funded auxiliary nurse training was one of the most successfully sustained projects: the curriculum and training facilities developed by AID still produce well trained auxiliary nurses and the nurses trained in the project continue to serve in their assigned post -- all achieved with national funds.

The development of Health Sector I was a long-term, carefully constructed process in which multiple goals, objectives and activities were defined in a mutual and consensual manner. While not quite imposed, this project is still not as clearly a national initiative as was the Rural Penetration Program. It also may suffer from the perception that AID is dominating the health sector because it is such a large, omnipresent project. Indeed, Health Sector I may be threatened by the success of its project negotiation: Ministry dependence on such a large project may make its sustainability impossible if U.S. funding were removed.

In summary: The most sustained AID projects were either those in which U.S. influence at the initiation of the project was minimal or those in which the goals and activities were negotiated and mutually defined. Imposed projects were not only not sustainable, they may have generated such enduring resentment as to inhibit future projects.

C. INSTITUTIONAL ORGANIZATION OF THE PROJECT

The importance of the institutional organization of a project for its effectiveness has often been posed in terms of the alternatives of vertical (categorical) and integrated (horizontal) organizational structures. A relatively recent alternative organizational design - the matrix organization, which combines elements of vertical and integrated organizations - has been proposed as a more effective administrative design (18). Our cases include examples of all three types of organizational design. We examined how these types were related to sustainability.

Vertical organizations are relatively autonomous separate hierarchies that are outside the normal administrative structure of the Ministry often by passing the Director General's office and, in some cases, only nominally under the authority of the Minister. These vertical organizations are focused on a limited set of goals and objectives and often have their own separate budgetary authority.

Vertical programs generally have the advantage of clearly established authority structure with well defined objectives and limited priorities. They can more easily be held responsible for observable outputs, and technical assistance can be more targeted. In all our cases of vertical programs, the internal administrative structure generally functioned quite efficiently. However, it is clear that all the programs required continued AID funding, or, in the case of SANAA, continued funding from other donors, to be sustained. Although national funding would probably have been sufficient to maintain AID-constructed SANAA water systems, new construction clearly required donor financing. SNEM as an organization did not survive the cut-off of donor funds and was eventually integrated into the Division of Vector Control. This division, structured as a moderately vertical program, has received AID funding under Health Sector I.

The classic case of the risks of vertical programs appears in the Family Planning project of 1965-76. This program became a target partly because its vertical program was perceived as unfairly wealthy, privileged and beyond

national control. In this case the verticality contributed to resentment that became so intense that the project was aggressively dismantled even before foreign funding terminated.

Integrated programs work through the Ministry administration, using the established authority structure, including the Director General, the normative divisions, down through the regional, area and local officials -- as was much of the Rural Penetration Program. Integrated projects often have the central objective of building general institutional capabilities, upgrading several aspects of the administrative structure so that the institution is capable of achieving multiple goals and maintain flexibility. Integration is often an effective means to achieve timely and widespread coordination of multiple sets of activities often necessary for effective delivery of services. Integrated programs, however, run the risk of a loss of effectiveness as bottlenecks arise and the interdependent parts fall apart. Integrated organizations have difficulty establishing priority activities and targeting resources on crucial bottleneck problems.

In our cases, portions of integrated programs of the Rural Penetration Program were the most sustainable, especially the training programs and the water projects. In the case of water projects, the continuation of new projects still depended on donor financing, but the maintenance of the systems created during the project life was supported by national funds. Training programs of auxiliaries have been continued without major donor support since AID funding ended. Training of community level workers, however, was not effectively sustained, and these workers became decreasingly active as logistics, supply and supervision systems deteriorated, and as the political system turned against active community participation. A fully integrated project, such as most of the Rural Penetration Program, however, ran the risk of declining efficiency over time. The potential benefits from the project then become less effectively sustained. The Rural Penetration Program, in effect, may have been too well integrated to be able to focus resources on the emerging bottlenecks in logistics, supply and supervision.

An extreme form of an integrated project attempted to integrate activities across several Ministries. The multi-sector nutrition planning program never overcame the inherent difficulties in coordinating large institutions, with quite different agendas, which placed nutrition on a low priority. This design was not only not sustained, it was ineffective even during the life of the project.

The third form of organizational design was the matrix organization of Health Sector I which combines the potential to effectively address specific problem areas -- one of the advantages of vertical programs -- with the endurance of institutionally integrated programs. This organizational structure has eighteen sub-components which are given the kind of priority that is often associated with vertical programs. Since many divisions within the Ministry receive some focused attention, there is less likelihood that any one program will be perceived as privileged -- as was the family planning program. In addition, the matrix is dominated by a large management and planning component that integrates the other components within the Ministry structure. Most of the programs, with the exception of the early phase of the mass media project and the weaning practices project -- both of which

were initiated as vertical programs separate from both Health Sector I and the Ministry's normal structure -- use the existing Ministry administration -- including much of the enduring structure of the Rural Penetration Program. While there is no way to test the sustainability of Health Sector I, we can conclude that it appears to avoid the risks of excessive verticality as well as the potential inefficiencies of fully integrated programs.

The programs that were initiated as vertical child survival programs, the Mass Media and Health Practices and the Breast Feeding and Child Weaning Projects have both been integrated into the Ministry's general administrative structure. They have both experienced some difficulty in achieving this integration and in the process have lost some of their effectiveness. It remains to be seen whether programs that have been initiated as vertical programs will be able to achieve greater sustainability as a result of their integration. The experience of the "integration" of both malaria and family planning projects gives us pause.

In summary: Vertical projects appear to have depended on continuation of some kind of foreign support in order to be sustained. Integrated projects were likely to be sustained, however the effectiveness of project outputs and outcomes declined, due to the interdependence of inputs into the project activities. A matrix design which combines elements of vertical program focus with an integrative management component, may provide a means to overcome the risks of both extremes.

D. FINANCING

Project Financing Characteristics

First we examine those characteristics of each project that might affect its future sustainability. (see Table IV) In a following section we will examine the contextual financial characteristics of the Honduran health system to discuss their relevance for sustainability.

Few of the expected relationships between financing characteristics of projects and their subsequent sustainability were supported by our analysis. It was hypothesized, for example, that projects with a low share of USAID funding and a high Honduran share would be more likely to be sustained. Such was not the case. Within the sustained group, auxiliary nurses received less than half its funding from Honduran sources; rural water systems had only 25% of its capital costs funded by Honduras. Among those projects whose outputs were not sustained, there was a wide variation in the Honduran contribution. Similarly, the extent of foreign assistance from donors other than USAID does not correlate with the continuation of project outputs and outcomes.

Although the willingness of the Ministry to absorb salaries of project personnel might be important for sustainability, the projects examined in the present study do not suggest that such willingness is a guarantee of sustainability. Malaria workers, for example, were absorbed by the Ministry

TABLE IV
SELECTED USAID HEALTH PROJECTS IN HONDURAS
FINANCIAL CHARACTERISTICS

PROJECTS	FINANCIAL CHARACTERISTICS DURING THE PROJECT						POST PROJECT CHARACTERISTICS
	Honduran share of spending	USAID funding share	USAID mix of human resources & material support	Funding of other foreign donors and lenders	Cost recovery from beneficiaries	Effectiveness of Project	
HIGH SUSTAINED OUTPUTS							
Rural Water Supplies 1962-1970 (62 water systems)	25% of capital cost:	75% of capital costs 100% of operation & maintenance costs	Almost entirely material and budgetary support	none	0% of capital; 60% of recurrent, incl. depreciation, in 1970	good	SAMAA and communities funded O & M costs; foreign donors & lenders fund capital costs of new systems
Nutrition, water and latrines component 1976-1983	significant	significant through SAPLAN	mostly material	some from other material sources	some	good	Ministry and other sources continue funding
Integrated Rural Health Family Planning training of auxiliary nurses component 1976-1981	estimated to be less than half	estimated to be more than half	a mixture of both	none	little	good	Ministry and IDB continue funding
LOW SUSTAINED OUTPUTS							
Maternal and Child Health/FP 1965-1976	some personnel costs toward the end of the project	almost all	a mixture of both	negligible	token amounts	mixed	Ministry of Health terminated family planning activities. Only retained half of the project personnel
Malaria Eradication Program 1965-1969	significant contribution	significant, and rising at end of the project	mostly material; some human resources	some from PAHO/WHO and UNICEF	none, but community volunteers worked in project	mixed	USAID's funding was subsequently only very partially replaced by Ministry funds
Nutrition, other components (planning) 1976-1983	approximately one-third	approximately two-thirds	mostly material; some training	a little technical assistance from IMCAP funded by ROCAP	some through particular sub-projects	mixed	CONSULPLAN continues at a very much reduced level
CURRENT PROJECT							
Health Sector I	significant. Ministry has taken over some personnel positions	significant	a mixture of both	some parallel contributions	more from hospital services, not directly	appears to be good	not applicable

long before AID funding ceased but project outputs were cut sharply when the foreign support stopped; half of the family planning personnel were absorbed, but few were able to deliver family planning services.

The cost recovery did not appear to be a necessary factor for achieving sustainability of immediate outputs, and did not appear to contribute to replicability. The degree of cost recovery varies for those projects that were more sustained as well as for the less sustained projects. The user fees paid for the administration, operation, and maintenance of the SANAA water systems of the 1960's contributed to their continued provision of water over the years; but such cost recovery may not have contributed to the construction of new water systems.

One hypothesis that is supported, to some extent, is that projects that are more effective tend to be sustained. Successful projects are candidates for continued funding from both Honduran and from international sources.

Contextual Financial Characteristics

Contrary to expectations, a general lack of Ministry of Public Health funds did not explain why some USAID-supported projects failed to be sustained. In the years after USAID funding stopped there were no general cutbacks in Ministry financing that could be cited as a major cause of projects not being sustained. For example, the early 1970's, which followed the end of U.S. assistance to malaria eradication in 1969, were years of growth in Ministry expenditures. The same is true for the years following the end of the family planning project in 1976. Although there may not have been sufficient increases in the Ministry budgets to replace fully the amount previously funded by USAID, budgets were nevertheless generally increasing and, if the commitment had been present, funds could have been found to sustain, to a greater extent than that realized, the previous levels of project outputs and outcomes.

The health projects examined in the present study are primary health care, not hospital activities. It could be hypothesized that some projects were not sustained because of a failure of primary health care activities to compete for funds within the Ministry budget. Such was not the case. Only in the period 1968-1972 did hospital operating expenses outstrip those for non-hospital. In the era of Minister Aguilar Paz (1972-1978), the subsequent military government (1978-1981), and the following elected governments (1982-1985), primary health care expenditures grew faster than hospital operating costs (See Table 12, Appendix G). Between 1968 and 1972, hospital costs as a percentage of total operating costs rose from 53.8% to 61.5%. By 1978, at the end of the era of Minister Aguilar Paz, they had fallen to 56.5%. This decline continued reaching 54.7% in 1981 and 51.1% in 1985.

Of those projects that were not sustained, only for the malaria program does competition for funds appear to have affected sustainability. USAID's funding ceased in 1969. In 1970 non-hospital operating costs fell 12.7%; in 1971 they only partially rebounded by rising 7.0%. In 1972 and 1973 primary

health care costs grew faster than hospital costs. But for the other three non-sustained projects, for which USAID funding ended in the 1970's and 1980's, this explanation does not hold. Their outputs and outcomes were not sustained although funding of primary health care projects was growing faster than hospital expenditures.

In conclusion, the failure to sustain projects after the end of USAID funding is not attributable to unsuccessful competition against hospitals for funding. On the contrary, for the years when most of the non-sustained projects failed to have Honduran funds replace USAID funds, primary health care operational funding was growing faster than that of hospitals. It should be noted, however, that much of the growth of primary care activities depended on a rapid growth in foreign funding for that sector. It is likely that the growth in external financing for primary care allowed the government to devote more internal funds to hospitals.

For the sustained projects, foreign financing played an important role in the replication of project benefits. CARE and the IDB funded the construction of rural water systems in the 1970's after the initial USAID project ended. The large funding of Health Sector I helped the Ministry of Public Health continue the water and latrine components of its Rural Penetration Program. By contrast, when donor funding is unavailable, few projects could continue replicable outputs. With the end of USAID assistance in 1969 and with replacement funds unavailable from international sources, the malaria program was cutback severely in the early 1970's.

At present the Ministry of Public Health is very dependent on foreign funding, especially from USAID. USAID funding is currently being provided at a very high level, a level reflecting the current political priority of Honduras. Of particular concern is the use of Economic Support Funds from USAID to fund counterpart responsibilities of the Honduran government. Should United States priorities change and funding be reduced, it is very doubtful that Honduras would be able to maintain its current level of public health expenditures.

In summary: There was no clear relationship between sustainability and size of AID funding, national assumption of recurrent salary costs, cost recovery and proportion of the national health budget devoted to hospitals. However, high and growing levels of external donor financing in recent years make sustainability of current projects with national funds extremely unlikely.

E. TECHNICAL ASSISTANCE

Technical assistance has been a component of all the AID funded projects. It has also been a large part of PAHO assistance. Three major characteristics of technical assistance appear to influence sustainability of projects: 1) length of the technical assistance present for a specific project activity, 2) size and coherence of the technical assistance team, and 3) degree to which technical assistance is phased out and Honduran counterparts take over. The malaria and sanitation programs during the Servicio Cooperativo period were implemented by a unified team of technical advisors who stayed in country for an extremely long period (20 years). The Servicio quite

successfully trained competent counterparts who were able to administer SANAA and SNEM effectively after the Servicio was terminated. During the final years of the Servicio period, as the government of Honduras assumed a greater share of the expenses, resentment arose over the salaries of the U.S. administrators, even though these officials were paid directly through the U.S. Public Health Service.

The Family Planning project also involved significant technical assistance, which may have contributed to the perception that it was an imposed program. The program, however, also involved considerable training of counterparts who might have been effective in administering the project, had it continued.

AID support for the training of auxiliaries and community-level personnel in the Rural Penetration Program was accompanied by technical assistance in the development of curriculum, and several teachers in the initial program were U.S. advisors supported by AID. This assistance was short term and easily phased out. Honduran counterparts effectively took over the training programs.

Since short-term consultancies occur in all projects, it is difficult to attribute success or failure to this form of technical assistance; however, there are examples of particularly important contributions to the Rural Penetration Program. Short-term technical assistance from the planning office in PAHO/Washington played an important role in designing the program. It was, however, a particularly innovative type of cooperation in which the advisors claimed to be learning as much from the development of the program as were the Hondurans.

Health Sector I has a massive technical assistance presence. The Management Sciences for Health team is a tight knit and well managed group. It has maintained good relations with counterparts, some of whom have joined the team after their Ministry service and are now working as technical advisors to their former colleagues. Although there are reports of some resentment in the Ministry to such a large presence of foreign advisors, relations between MSH and the Ministry are apparently even better than previously.

With the anticipation of a second similar large-scale project, Health Sector II, there seems to be little likelihood that the technical assistance will be significantly reduced in the near future. However, the planning for Health Sector II does anticipate a phased reduction in technical assistance..

In summary: Very long-term technical assistance which involved significant training of counterparts and allowed counterparts gradually to assume greater responsibility has been effective in sustaining project outputs. Large-scale assistance, however, has also generated resentment against the foreign presence. Short-term technical assistance has also made significant contributions to sustainable projects.

F. DONOR COORDINATION

The programs of different donors are seldom coordinated by any explicit, rational plan designed by the government of Honduras or by collaboration among the donors themselves. Lack of coordination has led to duplication of efforts among donors, working at cross purposes, and/or competing for scarce Ministry counterpart funding and personnel.

Despite the lack of formal mechanisms for coordination, however, there appear to have been some periods of implicit coordination, sometimes managed on an ad hoc basis by the Ministry. Sometimes this implicit coordination occurred as a division of labor among donors -- for instance, in the Rural Penetration Program, AID provided training, PAHO emphasized planning, and UNICEF provided equipment for the CESAR and CESAM^o that were built with IDB funding. Other cases show an implicit coordination through a sequencing of donor support as one donor took over the activities of the other -- as in the SANAA water projects that were funded by IDB as AID phased out.

There have been several problems related to donor coordination, however. AID and IDB, despite attempts at communication and agreement, have sometimes worked at cross purposes, AID emphasizing rural primary care and IDB urban-based hospital care. Recurrent cost implications of several major new IDB-financed hospitals may eventually make fewer resources available for basic health care in rural areas. Also, several case studies show the sometimes ill effects of several donors working together to bring a new priority and program organization to Honduras. When several donors gang up on the same types of activities, the duplication of support can lead to competition for scarce resources as it does now in Health Sector I where AID assistance competes with PAHO's, especially on the management and planning programs, and with UNICEF's on child survival. The risks of this overlapping of donor activities is best observed in the malaria programs. While both AID and UNICEF provided major funding for a lengthy period, when they both withdrew, there was no other donor to provide the funding in sequence and give support to a program that had become accustomed to receiving large amounts of outside support.

In summary: Donor coordination that resulted in a division of labor among donors and allowed for a sequence of support so that donors alternate in funding the same activities appeared to have contributed to the sustainability of AID project outputs and outcomes.

G. TRAINING

Since the project that maintained both immediate outputs and replicative outputs with only national funding, was a training project we might be tempted to conclude that training is the most sustainable type of project. However, it is clear that training alone is not sufficient without the resources to employ and support the activities for which people are trained. The most sustained project was a training program that produced auxiliary nurses for the Rural Penetration Program. The nurses produced during the

life of the project continue to provide health benefits, albeit at a lower level of effectiveness, to the Honduran population. The three nursing schools constructed by AID continue to produce more auxiliaries and continue to use much of the curriculum developed by AID technical assistance.

This project also trained community-level volunteers -- guardianes, representantes and midwives -- who were not as sustainable as the auxiliary nurses. Some sources estimate that less than half of these health workers continue to function and that the programs to train new volunteers have also been less effective. It is likely that the lack of continuous supply and supervision has resulted in the loss of effectiveness of these trained individuals. Other volunteer workers in AID-supported projects, such as the malaria volunteers, were also effective only as long as support for their material needs was forthcoming.

Another major training project involved training auxiliaries and other health workers in family planning. Although many of the workers continued to be employed by the Ministry after the project was terminated, they received no support to continue using their training.

In summary: Although a training project was one of the sustained projects, other projects with large training components have not been sustained. Training projects without continued support for the activities for which health workers have been trained are unlikely to be sustained.

Many projects include continuing education or specialized training for health officials already employed by the Ministry. Such programs were a large part of the Servicio period in which fellowships were available for public health education often for long periods in U.S. schools. Many of the individuals who received this training assumed important positions in the institutions that followed the Servicio, such as SANAA and SNEM. Unfortunately, no systematic study was done to evaluate the retention of those trained, so it is unclear how sustainable this continuing education was.

Continuing education has been a large part of the Health Sector I Project. Many short courses, both in Honduras and in the U.S., have addressed specialized health topics as well as basic administration issues. Some specialists in maintenance and other technical areas have attended long courses overseas. It is unclear whether this approach to training will make for a more sustainable project.

Unfortunately, there is insufficient evidence to ascertain the impact of continuing education on project sustainability.

H. COMMUNITY PARTICIPATION

Communities may participate in health programs in a variety of ways, ranging from independently deciding on and planning project activities to merely using project services. The Honduran government has generally

defined community participation as community collaboration with Ministry projects in order to make them more effective. This collaboration has most commonly been manifested through communities' selecting volunteers to serve as part-time collaborators with Ministry programs.

Community volunteers had significant roles beginning early with the malaria collaborators in SNEM and the volunteers who maintained SANAA water systems. Beginning with the Rural Penetration Program in the 1970s, promoters were trained to organize and motivate health committees which were to help set community priorities, select individuals to be trained as community health volunteers, and provide labor and some materials for local health activities. The guardianas are village volunteers trained in one-week courses and supervised by auxiliary nurses to provide basic primary care with simple medicines and some assistance in immunization campaigns and health education campaigns. Representantes are leaders in the community who help maintain the health committee, organize local work forces and materials, and work closely with the promoters in water and sanitation projects.

Collaboration has also taken the form of provision of volunteer and semi-volunteer labor (some labor being compensated through food-for-work projects). Communities have helped construct thousands of health posts, health centers, wells and small water systems, latrines, etc., and have participated in many income-generation projects.

Although the Honduran government's conception of its role is basically to provide top-down services, in the Rural Penetration period of 1972-1978 and to a limited degree through current local programming exercises, there have been some genuine community decision-making. Active community decision-making has not been the predominant form of community participation in Honduran health programs.

Beyond great variation in the nature of community participation, community participation has also varied greatly over time and by region and even community. Community participation from 1942 to 1970 was minimal, with the exception of the active network of volunteer malaria collaborators built up in the late 1950s and 1960s. In most of the health programs, community participation reached its zenith during the Rural Penetration Program, when a commitment and enthusiasm to expand health services to rural areas swept the nation. The major exception during this period was the malaria program, whose cadre of community volunteers declined substantially during the 1970s, only to be reestablished in the 1980s. From around 1979-1982, there was a lessening of national enthusiasm for rural health care and a drop off in the activities of community volunteers (particularly the representantes) and community health committees. Since 1982, participation has again risen slowly but has not regained previous levels.

The effectiveness and stability of community volunteers appears to depend to a large extent on general program effectiveness. When and where community volunteers are well trained, well supervised, and perhaps most importantly, well supplied and when referral systems work, community

volunteers have tended to stay motivated and active. The effectiveness and stability of community committees likewise depend on the program's ability to support them with material assistance and supervision.

There is little doubt that community participation has been a positive factor for many health programs' achieving their goals. Community health volunteers, other community members, and community groups have helped build and maintain water systems, health facilities, latrines; have filled in places where mosquitoes breed, cleared trash and brush away from houses; have assisted in thousands of births; treated thousands of illnesses; and supported health workers and facilities from the formal health system in numerous ways. Indirectly, then, by extending program benefits, community collaboration has contributed to the sustainability of many health programs.

The other argument for community participation's contribution to sustainability is that greater participation may contribute to greater community demand for continuation of the program. Community demand has been important in stimulating rural water projects, as many communities have sent citizen's delegations to SANAA or to MOH officials to request water systems for their communities. Community members have provided not only labor but have also been willing to pay monthly user fees for their water systems.

In other health-related program areas in Honduras, however, community demand is probably not one of the major factors that has assured program sustainability. While demand for support and services is certainly a factor that Honduran political leadership tries to respond to, it is usually weak, and may even be ignored as long as Honduran politics continues to work essentially through patronage and personalist channels. Widespread community decision-making and priority setting, in fact, might well be politically dangerous in Honduras, and not tolerated by the military and political leadership.

In summary: Community collaboration has strengthened programs and made them more effective, but its generation and maintenance has also required program efforts and resources. Community demand for programs to be established and maintained does not appear to be a major factor for health program sustainability in Honduras.

I. EFFECTIVENESS

As noted above, it is often difficult to demonstrate that a given project has had the impact on health levels anticipated in project documents. Only recently have efforts been addressed to estimating "lives saved" and "illness averted" by specific project interventions. Nevertheless, it is often possible to assume that if measurable outputs are achieved, and these outputs continue to function in expected ways, that they do contribute to the anticipated health benefits. In other words, if relatively clean water is supplied and if auxiliary nurses continue to provide primary care activities, we can usually assume that health benefits are reaching the Honduran population. In our cases, we usually had to rely on the general perception

of evaluators and Honduran health officials to determine the general effectiveness of projects. Sometimes this perception was backed by relatively hard evidence; in most cases, a clear consensus was easily established.

In general, projects which were perceived as effective during their implementation were more likely to be sustained than were projects which were not perceived as providing anticipated outputs and outcomes. The least effective projects were the nutrition planning project and the family planning project. These projects were also the least sustainable. The most sustainable projects were the auxiliary nurse training program, the water pump and latrine project of the Rural Penetration Program and the SANAA rural water projects. These projects were also perceived as quite effective during the life of the project. The only project that was perceived as effective during the period of AID funding but was not sustained after the foreign funding stopped was the malaria program.

There may, however, be some negative consequences of effectiveness. The malaria project during certain periods was deemed to have been sufficiently effective that foreign funds were reduced, only to result in a decline in malaria control activities and a resurgence in the incidence of malaria. Also, the Rural Penetration Program was so successful during its first phase that it was expanded beyond the administrative capacity to continue providing the supplies and supervision necessary for continued high levels of effectiveness. In addition, it appears that the child survival projects (Mass Media and Mother's Milk projects) that were initiated as very effective vertical programs experienced a decline in effectiveness when they were integrated into the Ministry. It is unlikely that these projects could have been sustained had they retained their vertical organization.

In summary: Projects that were perceived to be effective during the life of the project appear to have been more likely to be sustained than those projects which were seen as unable to achieve anticipated outputs and outcomes. Effectiveness during the life of the project, however, has also led to later choices which undermined sustainability (as in malaria) or weakened the future effectiveness of project activities (as in Rural Penetration Program and Health Sector I's child survival projects).

CONCLUSION: LESSONS LEARNED AND POLICY IMPLICATIONS

The implications of this study for the design and implementation of other health projects must be tentative. We hesitate to make recommendations based on the experience of one country. It is clear that the context of Honduras is likely to have shaped the conclusions we have reached, and without comparative analysis to other countries we cannot easily determine the importance of those Honduran characteristics to our findings. Factors about the Honduran context that may have relevance are: country size, per-capita income level, economic structure, geo-political salience, political system characteristics, socio-cultural characteristics and particular disease patterns. Some of these factors -- probably country size, income level and geo-political salience -- may be important constraints which help determine sustainability. If we were to compare the history of health project sustainability in a large country with higher per capita income level and lower geo-political salience, we might be able to determine the importance of these contextual factors.

We need also to develop a larger sample of cases from which to generalize. Perhaps there are more similarities among water and sanitation projects, regardless of time period or country context than there are similarities with other health projects. Only with more historical studies of the full range of health projects can we develop the basis for making these judgments.

We feel that our methodology is a sound basis for future studies of sustainability. Using the case study method with a systematic systems analysis over a long historical period provides an excellent means of understanding what has worked in one country's context. The conclusions we have reached for each of the nine sustainability factors are hypotheses that can be examined in future comparative studies of other nations.

The historical approach has allowed us to examine a full series of many different types of health projects within a relatively content social, economic and political context. We were able to identify sequences of projects -- such as malaria, water supplies, and family planning -- where learning, changes in project design and implementation processes allowed us to determine better the contribution of crucial factors to sustainability. Working in one country also allowed the research team to capitalize on cumulative learning and interviews with key informants who put their observations in historical perspective. This long-term, in-depth analysis will provide a much more accurate, detailed and complex basis for comparison with other country cases than would an a historical one-time comparison of one type of project in several countries.

We found five factors about U.S. health projects in Honduras that were significantly related to project sustainability: national commitment; project negotiation; institutional organization; donor coordination; and project

effectiveness. Project sustainability was less clearly related to other factors we examined: project financing characteristics; technical assistance; training components; and community participation.

In the following section we will review our conclusions about each factor and suggest some policy implications of our findings. We should reiterate a caution: These conclusions are based only on our review of the Honduran cases and therefore are most appropriately to be taken as hypotheses to examine in other country contexts. Therefore, the policy implications we draw are extremely tentative.

A. FACTORS RELATED TO SUSTAINABILITY IN HONDURAS

National Commitment to Project Goals. Most of the U.S. government projects in Honduras were designed to achieve goals and objectives that were high priorities for the Minister of Health at the time of the project, and in subsequent periods. Two of the three cases of low sustainability (family planning and nutrition planning) were projects with low priority or open rejection by the Hondurans. However, one case, the malaria projects, suggests that sustained government commitment does not guarantee project sustainability. National commitment, therefore is a necessary but not sufficient condition for sustainability.

Our policy recommendation then is: no project should be supported unless it has national commitment that is likely to be maintained through subsequent governments.

Project Negotiation. When projects were designed with mutual respect in negotiations between the Honduran government and the U.S., they were more likely to be sustained. The two cases that were viewed as imposed by AID -- family planning and, to a lesser extent, nutrition planning -- were the least sustained projects. The project that was sustained by national funding -- auxiliary nurse training -- was one designed in the context of the Rural Penetration Program and developed with Honduran support to fit the nationally-defined program.

Our policy recommendation is: Projects should be developed in mutually respectful negotiating process so that objectives and activities are arrived at by consensus and not perceived as imposed by AID.

Institutional Organization. Vertically organized projects run the risk of generating resentment from the unprivileged parts of the Ministry. The resentment became so intense in one case -- family planning -- that the project was actively dismantled at the end of the project. Malaria projects also were vertically organized and were unable to sustain effective levels of outputs once foreign funding ceased. Of the vertical projects, only SANAA was able to sustain immediate outputs with national funds and has been successful in gaining continued foreign support for putting new water and sanitation systems after AID assistance stopped.

Integrated projects -- the auxiliary nurse training and the hand pump and latrine projects in the Rural Penetration Program -- were more successfully sustained. However, effectiveness appears to decline when foreign funding ceased.

The matrix organization of Health Sector I, which targets specific activities but integrates them within the Ministry and also provides an integrating management and planning component, appears to overcome the risks of the extremes of vertical and horizontal projects and allows flexible response to bottlenecks.

We conclude then: Privileged vertical projects should be avoided. The effectiveness of integrated projects can be enhanced by use of a matrix organization which allows flexible response to emerging bottlenecks.

Donor Coordination. Few U.S. projects involve explicit coordination of activities with the other major donor agencies -- PAHO, IDB, UNICEF. However, implicit division of labor or sequencing of follow-on funding has played a role in sustainability of U.S.-funded projects.

When donors focus their projects on separate but compatible aspects of a national program -- as they did in Rural Penetration Programs -- the projects appear to be more sustainable than when they all gang up on one activity and then terminate their support simultaneously -- as they did in malaria programs.

An implicit sequencing of donor funding, in which one agency begins funding the activities initiated by another when that agency ceases its funding -- as occurred with the SANAA rural water projects -- appears to contribute to the sustainability of both immediate and replicable outputs.

We conclude then: 1) Projects which duplicate other donor activities should be avoided and a division of labor among donors should be established.

2) Coordination with other donors should be encouraged to plan a sequence of support in which donors alternate their support for replicative outputs of each other's projects.

Effectiveness. Projects which were perceived to be effective during their implementation were more likely to be sustained than were projects which were not perceived as providing anticipated outputs and outcomes. The least effective projects were the least sustained -- the family planning project and the nutrition planning project. The most effective projects -- auxiliary nurse training, water and latrine project and SANAA rural water project -- were the most sustained.

Malaria projects were the exception that suggests caution in the pursuit of effectiveness. Malaria projects were effective at high levels of foreign funding, but collapsed once the funding ceased. Similar concern is being raised about some of the child survival projects which are currently quite effective with high levels of foreign support.

Policy implications we suggest: Projects should be designed so that they are likely to achieve important objectives and be perceived as effective. However, do not make effectiveness the overriding priority.

B. OTHER FACTORS

Financing. We found that there were no clear patterns of project financing which contributed to project sustainability. Neither size of funding, national assumption of salaries, nor cost recovery was related to sustainability. We did find an alarming growth in dependence on foreign funding in recent years. This growth leaves the primary care sector particularly vulnerable if foreign support were to be reduced. However, this growth has occurred mainly during the current Health Sector I project, so we were unable to specify its effect on post-project sustainability.

Technical Assistance. Neither the length of time of technical assistance, the size and coherence of the technical assistance team, nor the degree to which technical assistance was phased out appeared to be clearly related to project sustainability.

Training. There was no clear relationship between types and extent of training components and the sustainability of projects.

Community Participation. While community participation may have contributed to the effectiveness of projects, it is not clear that community participation contributed to sustainability. Indeed, it appears that participation itself may be more difficult to sustain than other project outputs.

ANNEXES

ANNEX A

Case Study: Malaria Eradication *

The significance of malaria as a major cause of morbidity and mortality in Honduras was first measured in surveys beginning in 1942. For a number of years until 1959, malaria was the major cause of death in the country. For public health, however, the thousands of deaths from malaria are but the tip of the iceberg, as malaria causes hundreds or even thousands of times more cases of illness than deaths. This disease load represents thousands of person years in lost labor, not to mention great discomfort. The disease has other important economic implications. Its control first opened up the Pacific lowlands for significant population immigration from the mountainous interior, and then its resurgence (due in part to mosquito resistance to insecticides caused by agricultural use of the same pesticides) exposed the population once again to the disease.

The story of malaria control in Honduras is one of ups and downs. The ups occurred when funding was sufficient and when the techniques employed were most appropriate. The downs, which have followed every period of advance up to the current one, occurred in part because the very success of program efforts created the illusion that the problem was solved and that funding could be decreased significantly. Following cuts in program funds, the number of cases inevitably rose, and by the time new funds were available, as in the case of both of AID's major loans in the 1960s, the seriousness of the problem had risen significantly. Other major factors in periods of disease resurgence were resistance of the mosquito vectors to insecticides and lack of effective malaria programs in neighboring countries.

The organization of the GOH's anti-malaria efforts has been transformed over time. The Interamerican Cooperative Public Health Service (SCISP) created a Servicio which initiated malaria control efforts in 1942. Then, as part of a worldwide campaign to eradicate malaria, the Servicio Nacional de la Eradicacion de la Malaria (SNEM) was created and functioned as an autonomous governmental organization from 1956-1966 and as a semi-autonomous governmental unit until 1979. Finally, malaria control efforts were integrated into a Division of Vector Control in the Ministry of Health in 1979.

A recurring theme in this history is the importance of bilateral and multilateral assistance in planning and funding the government's efforts against malaria. The following history will highlight these influences as well as other major implications of U.S. contributions specifically for the sustainability of malaria control efforts.

* Sources for this section include interviews with Stivers, Alvarado, C. Pineda, Smith, and documents 54, 88, 137, 165, 184, 192, 194, 200, 236.

Historical Synopsis

SCISP. Prior to 1942, there were few anti-malaria activities outside of individual treatment with drugs and some environmental control efforts assisted by large banana companies and the Rockefeller Foundation on the north coast. In 1942, the GOH initiated activities under the administration of SCISP, a U.S. cooperative program that was simultaneously beginning in most Latin American countries. (170, 162, 237) The Institute of Inter-American Affairs provided some funding for SCISP and some of the top-level staff, but the GOH gradually assumed most of the costs, and Honduras took more and more of the technical positions. Beginning in 1950, UNICEF provided vehicles, supplies, and equipment.

From 1942-1948, anti-malaria activities included entomological studies, malariometric surveys, and disease control in selected localities by application of larvicides (Diesel Oil and Paris Green) in Tegucigalpa, Choluteca, Amapala, La Ceiba, and drainage and releveling in Tegucigalpa and Choluteca.

At the same time, greater reliance was placed on two more permanent control methods: draining and filling vector sources. Some of the lined trunk drains that were constructed in Choluteca during this period are still in good condition and functioning.

In October 1949, an agreement was signed by the GOH, PAHO/WHO, UNICEF, and SCISP, with the purpose of increasing malaria control activities and proceeding to the eradication of the *A. aegypti* mosquito through application of DDT in the interior of houses and the administration of anti-malaria drugs. Partial coverage was achieved in each of the succeeding years through 1956.

During May and June 1950, residual spraying with DDT was started in 15 localities of the Departments of Lempira and Choluteca with a population of some 15,000 people. During the next year, interior spraying was extended to 216 localities scattered throughout the country, with over a quarter million inhabitants directly protected; DDT application continued for several years at about the same level. Malaria control efforts in the early 1950s were quite successful. From 1950-1951 to 1953-1954, mortality due to malaria dropped from 23.6 percent of all deaths to 7.4 percent.

Motivated by the Resolution of the XIV Pan American Health Conference held in Santiago, Chile in 1954, and that of the VIII World Health Assembly in Mexico the following year, which urged governments to proceed with the eradication (rather than control) of malaria from the continent and the world, in December 1955 the GOH converted its control programs into SNEM, a semi-autonomous, vertically-organized agency initially under SCISP administrative control.

SNEM. SNEM's operations were programmed under the standard World Health Organization eight-year malaria eradication scheme. This plan called for completion, in 1957, of mapping, baseline entomological and epidemiological studies, recruitment, training, and deployment of equipment and supplies.

These tasks were accomplished. Maintenance of a lethal residual of insecticide on the interior walls of all dwellings in malarious areas and establishment of a case-finding and treatment network to measure the results were programmed for the following four years, 1958-1961. In theory, the spraying could have been stopped at the end of the period of attack and an intensified early detection and treatment program (consolidation) then implemented to mop up the few remaining indigenous and imported cases that would occur in the final three years, 1962-1964. After this, it was anticipated that the country could be declared malaria-free.

Honduras's malaria eradication program, supported and administered by SCISP, received technical assistance from PAHO and material and equipment donated by UNICEF, by means of a tripartite agreement signed in February 1958. The attack phase started in 1958, using dieldrin for interior spraying in a yearly cycle, but the appearance of vector resistance forced SNEM to discontinue use of this insecticide at the end of that year. Beginning in July 1959, DDT was used for interior spraying in semestral cycles.

Results of the attack measures were highly favorable during the first five years. In July 1962, a part of the malarious area was shifted from the attack phase to consolidation, followed by the addition of new areas in January and July 1963, and January 1964. A February 1965 evaluation resulted in areas with a population of 59,000 reverting to the attack phase; but at the same time, an area of 90,000 persons moved to consolidation.

In December 1962, vector resistance to DDT was found in part of the southern area of the country, where insecticides were applied on a large scale in cotton plantations. In July 1963, spraying with DDT was discontinued in that area because of the continuous increase in vector resistance and in malaria cases. Spraying with malathion was started in that area, but due to a shortage of funds, could not be completed as planned. From January 1964 to February 1965, three more cycles were applied, but with considerable delay in each cycle due to lack of financial resources. There are indications that malathion had some effect in certain localities with vector resistance to DDT, but that its competence to interrupt transmission in the five cycles was not proven.

A 1964 evaluation concluded that the regions of anopheline resistance to DDT represented the only significant remaining problem areas in the country. In addition, because of a suspension of AID funds in 1963 (due to a military coup), SNEM had been unable to carry out programmed activities fully.

In October 1964, the MOH prepared, with the assistance of PAHO and AID, a triennial plan for 1965-1967. The plan called for continued DDT house spraying in attack areas plus the complementary use of malathion and/or collective drug treatment. Mass treatment was successfully instituted in Marcovia Municipality (with a population of 16,000) in mid-1965 but could not be expanded because of a shortage of funds. (140) Because of the financial inadequacies which had precluded following the Three-Year Plan malaria increased, and transmission became reestablished in some consolidation areas. (236)

The program's economic difficulties during 1964-1965 were due to AID's reductions in assistance. In August 1966, SNEM received the first funds of an AID loan based on the Triennial Plan prepared in 1964, but the malaria situation had deteriorated to such an extent by 1966 that the funds received proved insufficient to the implementation of the attack and surveillance measures required. (236) A requested extension of the original loan was approved in September 1968. The spraying operations of the Triennial Plan were started in July 1967 in the attack phase area of almost a million population, including areas with varying degrees of vector resistance to this insecticide. The mass treatment begun in Marcovia was extended to cover a population of almost 150,000 inhabitants who lived in the area with vector resistance to DDT. At the same time, surveillance activities were intensified in the consolidation area where just over a million persons lived.

In March 1969, the program was evaluated by an external evaluation group organized by PAHO and the U.S. Public Health Service. The group concluded that in the consolidation area, 59.6% of the population was kept free of transmission; that in 37.2% the application of focal measures had to be intensified; and that the balance should go into the attack phase. In the area under attack phase with DDT, only 2.1% of the population was kept from transmission and could be transferred to the consolidation phase, 82.5% obtained a decrease in the parasitic incidence and the balance did not show any progress, or their malarious status deteriorated. In the attack phase with DDT and mass treatment, 49.5% of the population achieved a decrease of parasitic incidence to a satisfactory level, 38.7% with a less significant decrease, while incidence in the rest of the population continued to increase.

In 1970, a new seven-year plan of operations was begun with technical assistance from PAHO. AID, however, provided no support for this plan probably because of worldwide shifts in AID priorities. Judging from the final report of an AID malaria advisor in this period, malaria in Honduras itself was considered to be basically under control. (137) UNICEF likewise ended its support for Honduras' malaria eradication efforts in 1973. The results of the loss of external assistance--which had provided approximately two-thirds of total funding since 1958--proved to be disastrous, as malaria cases rose significantly in the mid-1970s and the GOH could not or would not make up the budget shortfall.

The insecticide supply ran out in 1974, spraying was stopped, and malaria rates began to rise. After Hurricane Fifi hit the north coast that year, AID provided one million dollars for the GOH to use as it wished for emergency relief measures. The government purchased medicines, vehicles, and insecticides. When this supply ran out in 1975, field operations were again interrupted until late 1976. The majority of SNEM's trained and experienced personnel were lost as a result of repeated layoffs, and the quality of SNEM's work deteriorated.

In the late 1950s and 1960s, a network of village volunteers had been established to take blood samples and administer presumptive doses of anti-malaria drugs. These volunteers were recruited, trained, and serviced by

SNEM evaluators who frequently picked up blood smears for delivery to SNEM diagnostic labs; replenished drugs, slides, and other supplies; and reported the results of samples diagnosed since their previous visit. The data thus generated were used by SNEM to evaluate progress, delineate potential trouble spots, and follow up positive cases for curative treatment. This system deteriorated with the rest of the SNEM organization, and the size of the sample and the validity of the data decreased accordingly. The number of volunteer community collaborators dropped from 2,700 in 1970 to 695 in 1979.

In 1978, 21 years after the inception of SNEM's original malaria eradication campaign and 13 years after the country was scheduled to have been declared malaria-free, the official malaria rates were slightly higher than they had been at the start of the program. Moreover, a team of experts estimated that in 1978 only one in five cases was reported. SNEM was underbudgeted and was beset with technical problems. At PAHO's recommendation in 1979, the GOH changed its goal from eradication back to control of malaria. To implement this new approach, SNEM was officially disbanded and a Division of Vector Control (DVC) created within the MOH. The GOH requested that AID and other donors assist the MOH in formulating and funding the new program.

Division of Vector Control. The decline of SNEM was partly caused by the growing strength of the SNEM employees' union, which grew stronger and more militant during the 1970s. (46) The GOH dissolved SNEM, firing all of its employees, in part to wrest control of the malaria program from the union. The reformist MOH leadership had intended to integrate SNEM into the MOH, but these officials were replaced in 1978, due to a change in government before they could carry out their plan. Thus SNEM was reconstituted for a short time with new staff, many of whom were former soldiers who had gained some spraying experience while serving in the Army.

The DVC began its work in 1979 under difficult circumstances. Because of low levels of funding in the 1970s, SNEM staff lost their sense of mission and motivation. With repeated layoffs in the 1970s, many trained staff found new jobs and thus could not return when funds became available again. Older, experienced SNEM employees retired. This meant that the organization had to spend much time and money with hiring and training new workers. The organization also had serious technical deficiencies during these years. As a result of poor or non-existent data on malaria cases and vectors, SNEM invested a great deal of money and effort in geographical locations that should not have been priority areas. These technical deficiencies were compounded by the declines in community participation through the volunteer collaborator system.

In 1979, the new DVC experimented with a system of Vector Control Auxiliaries. Although they had little training themselves, these paid workers were to train community people to apply insecticides in their own communities. This scheme was designed around the use of DDT, which is not particularly hazardous to apply. When the program was finally instituted, however, the DVC was switching to Fenitrothion, which is too toxic to be applied by untrained community members. Thus the plan to have community sprayers was ended quickly.

Since 1980, the DVC has made good progress in recuperating from the losses of SNEM's declining years. Substantial foreign assistance has once more become available. PAHO has a long-term advisor to assist the program. AID has contributed \$1,124,000 through Health Sector I and also the services of an advisor in entomology. The Government of Japan has made three grants worth a total of \$4,550,000 in equipment, insecticide, and vehicles.

This support has been complemented by the strengthening of the DVC as an organization. In 1981, the auxiliaries were replaced by sprayers, evaluators, and larvae control workers who earned their jobs competitively and completed rigorous training programs. Almost all of these new employees, who include some former SNEM staff, are still working for the program. A new, partly computerized information system has facilitated program operations. More cost-consciousness has led to a change in strategy that emphasized spraying and larval control in areas of high malaria incidence. Vector habits are better studied. The DVC has established an engineering unit to focus on drainage. Local entomological assistants have been trained and are conducting vector density sampling to monitor effectiveness. The number of trained volunteer collaborators has increased from 695 to 5,600 from 1979 to 1985. Finally, case finding has become increasingly aggressive. In 1980, there were 175,623 slides checked, with 43,010 positive cases; in 1985, 410,720 slides of which 33,828 were positive. Turnaround time for checking samples and informing patients has improved. The net result has been an annual decline in cases of malaria for every year but one of the past five years.

Logistics remains a problem area. Microscopists are poorly distributed and appear not to be movable within the MOH system. Drugs for malaria treatment are often unavailable at health posts in high prevalence areas. During 1984-1985, there was a lack of insecticides for house spraying. Lack of repair capability for microscopes and other equipment limits the improvement of laboratory support. Vehicle breakdowns and lack of equipment also hamper spraying and drainage activities.

Organizationally, the DVC is much less independent than the autonomous SNEM organization, yet not fully integrated into other MOH activities. Regional MOH directors have some control over DVC workers but a separate supervision system is in place and apparently improving. There is some integration with the Rural Penetration Program for case detection and treatment.

Sustainability of U.S. Government Support for Malaria Eradication

The U.S. Government has assisted the GOH off and on since 1942 in the control or eradication of malaria. The Servicio identified malaria as a major public health problem, and made good progress over the years in controlling the disease. Total U.S. contributions at the time may be in the range of \$1 million. In close cooperation with WHO/PAHO and the GOH, AID provided significant, although not always consistent, financial support for the malaria eradication efforts of 1958-1969. U.S. contributions totalled approximately \$5 million, somewhat more than the GOH budgetary contributions.

(Budget figures reported in this case study should not be considered definitive, as there is much conflicting information among different sources.) Finally, after an interval of nine years of no significant support, the U.S. is once again (since 1980) providing both technical and financial support to the GOH's malaria control efforts.

The checkered history of U.S. support for malaria control in Honduras is analyzed below through a discussion of the major issues relating to sustainability.

1. National Commitment to Goal. The GOH has remained committed to the goal of malaria control or eradication since the seriousness of this disease as a public health problem was first quantified in surveys in the early 1940s. AID and other external donors have supported this goal substantially except for the period 1969-1979. The lack of support in this period led to serious setbacks. It is difficult to gauge the GOH's commitment based on its budgetary contributions, but it is clear that GOH funds alone have never been sufficient to reduce the malaria problem. Since 1980, the percentage of costs paid by GOH funds has increased substantially.

2. Project Negotiation. AID and PAHO had major roles in determining national malaria strategies until the DVC was formed in 1979. The organization of efforts in Honduras has followed the same pattern as in other countries of the Americas, and during the eradication efforts of the late 1950s through the 1970s, the worldwide pattern advocated by the World Health Organization. Based on its current strong leadership, the DVC have solicited advice and assistance from donors but has made major strategic decisions more independently. With a change in leadership, this pattern could change once again.

In some quarters, the SNEM program, which was designed and operated according to international guidelines, has been criticized for being too rigid. It was said to have overemphasized spraying, even after mosquito resistance was evident, rather than taking a more comprehensive approach that would have included more emphasis on drainage, treatment, and housing improvements. SNEM's rigid organization also made it very difficult to collaborate with other government health programs.

3. Institutional Organization of Project. Malaria efforts in Honduras have remained quite autonomous through the years of the Servicio (1942-1956), SNEM (1956-1979), and the Division of Vector Control (1979-the present). As in most countries, malaria control has been perceived to be most appropriately organized through vertical structures.

In Honduras, organizational effectiveness has frankly seemed to depend more on funding levels than on the organizational structure, as the familiar pattern of declining caseload led to declining funds and then increasing caseload time after time. Funds alone, however, are not sufficient. Malaria eradication is a very technical undertaking that requires very specific expertise for situational analysis and for developing appropriate strategies. A vertical organization, with its often relatively efficient and standardized procedures

and high esprit de corps, has many advantages. An AID advisor in 1963 noted SNEM's close control over expenditures, property utilization, and personnel management; efficient system for vehicle maintenance; excellent system for reporting and analysis of field activities; excellent system of passive surveillance, and effective coordination among donors. (88) An AID Capital Assistance Paper in 1965 described SNEM personnel as competent and dedicated. (184) Achieving these program characteristics in an integrated MOH program is much more difficult, as budgets are almost uniformly low and political influences chronic. On the other hand, vertical organizations in Honduras seem inevitably to incite jealousy that eventually weakens them and leads to their integration.

Thus, while integration is most palatable politically, in the Honduran context, it brings along some problems. Current leadership of the DVC point out how difficult it is to work through the MOH's seven regional directors, who have been replaced an average of once a year over the past five years. Each new regional director needs to be oriented to the program. Once oriented, a new director may remain only a short time before being replaced. While the currently strong direction of the division has protected it somewhat from the politics and inefficiencies common in the MOH, problems still abound. Salary, travel, and per diem payments are constantly months behind. Vehicle repair is slow or impossible. Politicians constantly attempt to influence personnel selection. Funds are commonly taken from the Division at the end of the year to make up shortfalls in divisions that have overspent their budgets.

The experience of SNEM in the 1960s and 1970s, however, points out that the mere fact of a vertically organized program does not guarantee its effectiveness in the face of insufficient funding, as occurred in the organization's declining years.

4. Financing. Insufficient and inconsistent financing, as already noted, has been a crucial factor in the years when malaria has made comebacks, mostly in the 1960s and 1970s. (While community participation is crucial for the success of malaria control efforts, direct community financing plays a minor role. On the other hand, the value of community contributions, of the work of both the volunteer collaborators and of the community as a whole in clean up and drainage projects, has been essential to program success.)

In budgetary terms, foreign aid has been extremely important to Honduras' malaria control efforts. During the Servicio period, the U.S. government contributed approximately a third of overall project costs, and presumably, of malaria project costs. In the 1960s, the GOH contributed around \$4 million to SNEM's operations, USAID \$5 million, UNICEF \$2 million, and PAHO \$1 million, mostly in technical assistance. This assistance was particularly important because much of it went to purchase insecticides, equipment, and vehicles for which the government would have had to have expended scarce foreign exchange. The lack of continued U.S. and UNICEF assistance in the 1970s was clearly a major factor in the decline and dissolution of SNEM. In the period since 1980, the GOH has contributed approximately \$21 million to to DVC

(approximately 80 percent for malaria control), the Government of Japan \$4,750,000 and AID \$1,124,000, so while foreign assistance remains significant, the government's share is substantially greater.

5. Role of technical assistance. WHO/PAHO and U.S. personnel have played major roles in program evaluation and planning. PAHO has provided many long-term advisors and AID many short-term advisors and evaluators over the years. Each of these groups currently has a long-term advisor to the program. This technical assistance has no doubt strengthened the malaria programs and increased the chances for sustainability. Unfortunately, the funding and technical problems already discussed lessened the long-term value of technical assistance, since many Honduran counterparts were lost to the program in political and economic layoffs of personnel.

6. Donor coordination. Donor coordination--mainly among AID, PAHO, and UNICEF--appears to have operated fairly smoothly throughout the history of malaria control efforts in Honduras. Since 1980, the DVC has really for the first time taken the principal initiative in laying out malaria program plans and has come to donors with the basic plan in hand, asking mainly for their financial assistance in implementing it.

7. Training and personnel sustainability. U.S. government support for malaria control facilitated the training of thousands of staff and volunteers over the years. Unfortunately, the long-term value of these trained individuals was greatly diminished by the layoffs caused by budgetary shortfalls in the 1960s and 1970s. With each new budgetary crisis, trained workers were lost to the program, sometimes to return but sometimes not.

On the positive side, most of the trained personnel survived the transition that occurred with SNEM's takeover of the Servicio's malaria control efforts in the late 1950s. In the years that followed, however, some of these people were lost due to political shifts and to layoffs caused by lack of funds. Although all SNEM workers were fired in 1978, some of them returned in the early 1980s with the institution of merit-based competition for positions in the DVC.

8. Community participation. The potential for community participation in malaria control programs is great, given the public's wide recognition of the problem and high motivation to do something about it. As described in the history section, the extent of community participation in malaria control has varied significantly over time. Thousands of communities have responded to program requests that they elect a volunteer collaborator and that they work with him or her to carry out such useful activities as clearing sources of standing water and cleaning up garbage and brush around houses. In addition, the volunteers themselves have taken thousands of blood samples, began presumptive treatment, and completed treatment when laboratory tests confirmed malaria.

SNEM built up this corps of volunteers beginning in the late 1950s. The reported number of volunteers were 2,700 in 1970, 695 in 1979, and 5,600

today. Today's volunteers undergo a two-week training period. They include a fair number of people who were first served as volunteers in the late 1950s and 1960s. The DVC has organized a dozen or so communities so far this year for major clean-up campaigns and to form health committees to maintain the gains.

One historical problem with community participation in this program appears to have been occasional confusion in communities because of the lack of coordination between the malaria program and (other) ministry of health programs. (48, 87) Also, because the participation was initiated by the program and independent community decision-making was not actively encouraged, participation was very dependent on the constant support of malaria program staff. In the period when the program was weakest, community participation declined in parallel.

9. Effectiveness. While the effectiveness of U.S. support of Honduras' malaria control efforts would clearly have been enhanced by more consistent funding, without the periods of decline or complete cut-off, U.S. support has clearly had many short-term and medium-term benefits. First and foremost, it has enabled the GOH to save thousands of lives and prevent millions of person days of incapacitation per year caused by bouts of malaria. Indirect effects include increasing net annual income, reducing medical expenses, reducing the demand on the public health system, and increasing the productivity in the educational system through increased teacher and student attendance. U.S. assistance has facilitated the development of valuable human resources by training malaria control specialists. Along with UNICEF assistance, AID support to malaria programs allowed the government to save millions of dollars in foreign exchange that the government could not have found in its own budgets.

ANNEX B

RURAL WATER SYSTEMS

A. INTRODUCTION

United States Government assistance to Honduran water systems began in the early 1940's and has continued in various forms to 1986. In the 1940's and 1950's the United States funded SCISP (Servicios Interamericanos de Salud Publica), which (among other things) built rural water systems. In the 1960's and again in the 1980's USAID funded the water system construction by SANAA (Servicio Autonomo Nacional de Acueductos y Alcantarillado). In the 1970's USAID provided support to the Rural Penetration Program, which, among many other activities, built simple water systems for very small communities (typically less than 30 houses).

The present analysis focusses on the USAID project of the 1960's-- Rural Water Supplies (USAID project # 5220044)--through which SANAA built 62 water systems. Data were available describing these systems as they were built and originally operated and maintained. And detailed data were also available for most of these systems from a SANAA survey, which described in of 1983-84 their condition, the population served, and current costs of operation and maintenance. These data make it possible to determine that in general project outputs and outcomes did continue after the end of USAID's assistance in 1970. Available data also facilitate interpretation of possible causal factors that may have contributed to the continuation of the project's outputs and outcomes.

The following material is in four sections; Section B briefly discusses the period prior to the beginning of the USAID's Rural Water Supplies Project (hereafter Project) in 1962. Section C uses the matrix of the present study's methodology to describe the design and functioning of the Project during the 1962-70 project period. Section C also includes information pertinent to the sustainability themes which are discussed in Section F. For 1970 to 1986, the post-project period, Section D examines the continuation of Project outputs and outcomes and discusses other rural water supply activity. Section F concludes the case study with a discussion of the factors that may or may not have contributed to the post-project continuation of Project outputs and outcomes.

B. Pre-Project Period: 1942-1961

Between 1942 and 1961 SCISCP constructed some 141 rural water systems in Honduras; as well as four water supply projects in Tegucigalpa and San Pedro Sula. Both the United States Government and the Government of Honduras supported SCISC's construction activities. The benefitted communities raised funds to help pay for their water systems.

The process of building a village water system typically began with representatives of the village contacting SCISP and requesting assistance. SCISP would then schedule a visit to the community and carry out a technical study to determine the type of system needed, its necessary material and skilled and unskilled labor inputs, and the cost. The community was required to contribute 50% of the required cash outlays, although SCISP's donations of materials was not included in this budget. SCISP then presented the plan to the community, which then had to raise its cash contribution before the construction could begin. The village's contribution was deposited in an account in the name of SCISP. SCISP staff and contracted personnel would then construct the system with the village providing some locally available materials (sand, for example). The project would also employ men from the village as unskilled workers who were paid in cash. Upon completion, the water system would be turned over to the village (to a municipality, or, to a local junta), which would be responsible for its operation and maintenance.

Subsequent evaluations of the SCISP-built systems indicated that the municipalities and local committees did not have the technical, economic, nor administrative capacity to operate and maintain their water systems and that the majority of the systems had deteriorated and, in some cases, had been abandoned. To resolve these problems, the Government of Honduras and the U.S. Government favored the creation of a national organization that would be responsible for the study, construction, operation, and maintenance of water and sewerage systems. SCISP was given the responsibility of creating such an organization. Enabling legislation passed on April 26, 1961 and SANAA began functioning on January 1, 1962.

In spite of the progress made by SCISP, in 1962 much of the rural population did not have ready access to potable water and water-related diseases seriously affected rural Hondurans. Thus the newly created SANAA had the challenges of both constructing new water systems for communities lacking such systems and of operating and maintaining existing systems.

C. RURAL WATER SUPPLIES PROJECT: 1962 TO 1970

1. History

In December 1961 SANAA requested U.S. funding for rural water systems. During the next year and a half, SANAA and USAID discussed the design of the Project, including financial aspects and the communities to be selected. In June 1963 SANAA received a letter from USAID that USAID had authorized a loan of U.S.\$ 1,050,000 or its equivalent for the construction of 24 systems. The formal contract was signed on August 23, 1963. The Project was concluded with the completion of the water system at Esparta on September 15, 1970.

2. Design

The "design" of the project in terms of a matrix must be inferred from available materials and from interviews. Neither a USAID project paper nor a post-project Evaluation has been identified; probably neither was in fact prepared. This project was designed and completed before USAID's logical framework was adopted for use by the agency. Moreover, the project's scope changed as it was implemented, notably by the addition of more water systems.

The project design, which is summarized in Table A, is narrowly oriented to constructing water systems for particular communities. Notably absent are outcomes and outputs related to building SANAA's institutional capacity so that it could continue constructing well-designed water systems after the USAID Project ended.

3. Operation and Results

In general, the project operated well and achieved good results. The following sub-sections discuss the operations and results for the period while the project was being implemented using the design matrix elements.

a. Inputs

As shown in Table A, the U.S.\$ 1,050,000 provided by the USAID loan contributed to the construction of 62 water systems--far exceeding the number systems envisioned in the design. The contributions of USAID, SANAA, and the communities toward the direct cost of construction of the 62 water systems may be summarized as follows:

<u>ENTITY</u>	<u>CONTRIBUTION</u>	
	<u>U.S.\$ amount</u>	<u>Percentage</u>
USAID	1,050,000	76.3%
SANAA	73,682	5.4%
Communities	252,911	18.4 %
Total	1,376,593	100.0 %

In addition SANAA provided the equivalent of U.S.\$ 391,000 in indirect costs, as also shown in Table C.

Most of the USAID support may be regarded as material (the contribution of U.S.\$ 1,050,000), but in addition USAID funded technical assistance, which may be regarded as a non-material contribution. Although training was not an element in the design of the project, it appears likely some on-the-job training occurred through the natural interaction of the USAID-provided technical assistance personnel with officials and staff of SANAA. Thus the USAID-provided inputs to the project were a mixture of material and human resource components, weighed heavily toward the former.

USAID's funding of water systems continued throughout the project, even as new communities were added to the program. There is no evidence that USAID or

SANAA tried to reduce the American share during implementation in order to facilitate post-project continuation of the construction program. Neither was such a reduction part of the project design.

b. Process

The process of carrying out the project, while varying in detail, followed the main elements of the project design.

SANAA required that the community have an organization with legal standing (persona juridica) with whom SANAA could work. Following a study of the design and preparation of the budget, the community was required to contribute at least 20% of the budget, a standard that was reportedly met in each of the 62 communities. There was a written contract between SANAA and the community. Unlike the community's contribution under the SCIS⁷ program, most of the contribution under the USAID project with SANAA could take the form of in-kind contributions of local materials and unskilled labor. Only a small amount had to be contributed in cash.

In this regard, it is worth noting that SANAA employed a group of "promotores" who worked directly with the communities. These individuals previously worked as promoters for the Ministry of Public Health but were loaned to SANAA for the project. SANAA paid their salaries, but they retained the right to return to the Ministry when the project ended. This is an example of good coordination that may be contrasted with the difficulties the present PRASAR project has in coordinating its SANAA, SALUD, and EDUCACION components.

SANAA constructed each system using its own skilled personnel. Generally one engineer (in charge of 3 or 4 projects), a construction superintendent, two bricklayers, a plumber, an administrator, an office boy, and laborers paid either by the community or by SANAA, depending on the terms of SANAA's contract with the community. No labor problems arose during the project, and SANAA enjoyed excellent relations with the communities.

As planned, SANAA employed a villager to administer and operate each system. During the construction phase, SANAA personnel would keep an eye out for an active and competent villager who could be employed by SANAA to administer and operate the system. This person would do operate the system which was a simple task, except for those few systems which used pumps instead gravity. He would performed simple maintenance tasks. He also collected and deposited the monthly user fees, and spent these funds as necessary to operate and maintain the system. He would call in SANAA when problems exceeded his capability.

Since SANAA was created as a vertical organization to build, operate and maintain water systems, it is not surprising that it devoted its energies to doing just that. Both during and after the project period, it maintained its commitment to these goals.

With respect to USAID-supported technical assistance, in May 1964 SANAA received a letter which discussed the possibility of using a consulting firm to check the design, construction, and inspection of the systems to be built under the USAID loan. The letter mentioned that USAID was negotiating a contract with the firm of L.B. Bell & Associates. The contract would cover work in approving the plans, specifications, and feasibility studies prepared by SANAA, as well as checking the construction and inspection procedures of the systems themselves. That same month Mr. Bell arrived at the Tegucigalpa office of SANAA in order to begin that work. This chronology suggests that the initiative for the technical assistance and its scope originated with USAID.

Detailed information is not available on all the technical assistance activities. A long-term technical advisor, Fred Alvarez, a Mexican-American engineer, worked for several years at SANAA. He evidently played a major role in reviewing plans and in assisting with the preparation and review of bid documents for materials (pipes, etc.). The firm of L.H. Bell also contributed significantly to the broadening of the project from 24 to 62 communities, at no additional cost to USAID but at some increase in the expenses of SANAA. The expansion to 62 communities was also achieved by means of substituting cheaper local materials (e.g., in water tanks in lieu of cement); technical assistance reportedly played an important role in investigating and in identifying opportunities for such substitutions.

Reportedly, USAID and SANAA generally worked well together on this project. The U.S. Government was supportive of the creation of SANAA; SANAA and USAID were both committed to the project's designed outcomes and outputs. Although technical assistance may have been introduced into the project at USAID's initiative, it was reportedly productive and well received.

During the project years, international donor/lender coordination was not a concern because, as indicated in Table, USAID and SANAA itself were funding the lion's share of the water systems constructed. Even in later years, when a number of donors were simultaneously funding many water systems, SANAA worked with them on an individual basis, and they reportedly did not coordinate their programs to any significant degree.

In short, all four elements in the project process (Table A) worked generally well--SANAA's work with the community, SANAA's employment of a village to administer and operate the system, SANAA's construction of the system, and USAID's provision of technical assistance.

c. Outputs

Project design outputs were exceeded. A total of 62 water systems were built--far exceeding the 24 in the design.

These systems were in fact operating in 1970, the last year of the project. (SANAA data indicate that all 62 were operating as of 1978; and all of those included in a 1983-84 SANAA survey were operating also, albeit in some cases at a reduced level of service.)

d. Outcomes

Both the outcomes--increase in the quantity and in the quality of water--were achieved. The water systems resulted in larger flows of water directly to households. Water quality increased sharply in relation to the communities' previous sources, which were usually (polluted) rivers and streams, and from contaminated spring outlets. The systems themselves, however, did not provide any water treatment (such as disinfection with chlorine).

e. Objectives

Although direct data are not available, it is obvious that the provision of water directly to homes reduced the time and effort of villagers expended in obtaining water.

The water systems reportedly did reduce the incidence of water-borne diseases, in part due to the difference in water quality with the quality of water previously used. It is not known, however, the extent to which complementary health measures (washing hands, use of latrines, etc.) also took place so that health benefits could be maximized.

f. Goals

In light of the above discussion, it is clear that to some extent the health of villagers was improved. Although reduction of time and effort in obtaining water and improved health both create the opportunity for an improvement in the economic condition of villagers, specific data addressing this point are not available.

D. POST-PROJECT: 1971 TO 1986

1. Continuation of Project Outcomes and Outputs

During the project, the design outcomes and outputs were exceeded; 62 water systems were built, compared to 24 in the design. The 62 water systems continue to operate. In many communities, the systems serve a much larger population than they did when built. To some extent, such expansion was anticipated; the data from the 1960's show that the design populations often comfortably exceeded the initial population served.

Comparative expenditures on administration, operation, and maintenance costs suggest that more of such expenditures may have been warranted. Project and post-project data also indicate that user fees ("recaudaciones") are not enough to cover administrative, operation, and maintenance costs--thus leaving nothing available to replace the basic facilities (tanks, major pipes, and pumps) as they wear out. Such deficits at the community level place greater demands on SANAA's budget.

As when built, the 62 water systems do not treat the water; recent testing indicates that the water is of acceptable ("acceptable") but not excellent quality.

In short, the quantity of water supplied may have declined a little (as service is not provided 24 hours per day in some communities) and there may or may not have been a modest deterioration in the quality of water provided; but some 20 years after their construction the water systems in the 62 communities continue to provide water of acceptable quality. This result is in marked contrast to the fate of the SCISP projects, the majority of which by had deteriorated significantly by 1961.

2. SANAA Activities

As noted above, the design of the project did not (apparently) encompass strengthening the institutional capacity of SANAA so that it could build, operate and maintain water supply systems in other communities. It is worth noting that SANAA in fact has continued to construct water systems, as indicated in Table B. From 1964 through 1970 SANAA water systems were financed primarily by USAID (62 systems) and by SANAA itself (16). The following year, 1971, CARE began to fund large numbers; in 1976 IDB-funded systems begin; and in 1981 USAID resumes funding, this time through the PRASAR project (Rural Water Supply and Sanitation Systems, USAID # 5220166). Over the 1964 to 1985 period, the most important sources of funding for the 933 community water systems built have been CARE (36% of the systems); USAID (30%); and IDB (28%). The prospects are that such foreign funding will continue for some time. IDB approved a U.S.\$ 24 million loan to SANAA in 1985 and assistance continues under USAID's current project.

It may be noted that in the 1970's the Ministry of Public Health began to help very small communities (generally less than 30 houses) build water systems through the Rural Penetration Program and the Ministry's promoters. Larger and more complex systems remained the responsibility of SANAA. This Ministry program continues in 1986 and is assisted by the current USAID-supported PRASAR. PRASAR has three main components--PRASAR-SANAA, PRASAR-SALUD, PRASAR-EDUCACION, the latter two under the Ministry of Public Health. Coordination problems persist among the three components.

SANAA's pace of activity has picked up fairly steadily since 1976. As shown in Table B, the most systems built in the 1960's was 30, in 1967. That number was matched in 1976 and was exceeded every year through 1985. In 1983 a high of 147 systems was reached. This year, as indicated in Table C, also represented a high in terms of cost (12 % in constant lempira) and in design population (15%). Continued construction of new systems is anticipated. But the dependence on foreign construction funds continues to this day.

E. SUSTAINABILITY

1. Methodology

A basic concept of the present study is that there are certain characteristics of USAID-financed projects that may be positively or negatively correlated with the post-project continuation of outcomes and outputs. For a variety of

characteristics, hypotheses may be formulated that endeavor to predict such continuation. With adequate data and an adequate sample size, an (statistical) analysis of a number of cases would support or not support these hypotheses.

Of course the small number of case studies, the large number of issue areas, the multiple hypotheses within issue areas, and definitional, measurement, and data problems make the strict application of this methodology impossible. Nevertheless, it is important to present the information in a framework that reflects the methodology's reasoning so that the cause-and-effect relationships remain clear. The following discussion presents sustainability issues, characteristics of the project during the project period, and the continuation of outcomes and outputs in such a framework. Otherwise it is easy to lose one's way in grappling with the messy subject of sustainability.

A major omission in this methodology is the contributory effects of events between the end of the project and the measurement of the continuation of outcomes and outputs. For example, a Government may exhibit strong commitment to a project's goal. Five years later, say, it is observed that outcomes and outputs did not occur. Everything else being equal, that situation would suggest that such strong commitment does not favor sustainability. But perhaps a new government took over which was not committed to the (prior) USAID project's goals and objectives. In this case, it is also important to look at commitment to the goal between the end of the project and the time at which post-project outputs and outcomes are measured.

An important distinction should be drawn between kinds of outcomes and outputs that are to be continued. For some outcomes and outputs the focus is on whether the SAME outputs are still producing the desired outcomes after the project ends. For example, are the 62 water systems built between 1964 and 1970 still, in 1983-84, supplying potable water. Or are the same trained auxiliary nurses still providing services for which the project trained them?

These kinds of project outcomes and outputs may be contrasted with those in which certain outputs are to be replicated in later years, and thus assure further beneficial outcomes. Thus, in the present water supply case, it is of interest whether SANAA continues building systems after the USAID funding stops in 1970. Does Honduras keep training auxiliary nurses after USAID assistance stops? In the present case study, both kinds of outputs and outcomes will be examined, although the replication of outputs (building the institutional capacity to construct more water systems) was not part of the project design.

2. Observations

Project results are summarized in Table D for project outcomes and outputs for both the project as designed and the non-design elements related to institutional capacity. Since the latter were not included in the design, such outcomes and outputs must be regarded as additional to the basic project.

Tables E and F assess the relative importance of the sustainability factors in contributing to the continuation of outcomes and of outputs. Table E addresses only the end outputs in the project design. Table F, on the other hand, is concerned with how the project may have contributed to SANAA's success in continuing to build, operate and maintain water systems.

Table A

USAID RURAL WATER SUPPLIES PROJECT (5220044)
DESIGN

MATRIX ELEMENT	RURAL WATER SUPPLIES PROJECT DESIGN
GOALS	Better health of villagers
	Improved economic condition of villagers
OBJECTIVES	Reduction in time and effort expended in obtaining water
	Reduction in water-borne diseases
OUTCOMES (BENEFITS)	Increase in quantity of water supplied to homes
	Increase in quality of water supplied to homes
OUTPUTS	Construct 24 water systems according to specifications
	Operate and maintain 24 water systems
PROCESS	SANAA works with community
	USAID provides technical assistance to SANAA
	SANAA builds system
	SANAA hires villager to administer and operate system
INPUTS	USAID loan of U.S. \$ 1,050,000
	USAID technical assistance
	SANAA budgetary support
	Community participation

Table B

**WATER SYSTEMS CONSTRUCTED BY SANAA
BY SOURCE OF FUNDING**

1964 to 1985

YEAR	WATER SYSTEMS CONSTRUCTED BY SANAA							TOTAL	%
	SANAA	AID	UNICEF	CARE	IDB	OEX	OTHERS*		
1954	4							4	0.4%
1965	4	1	2					7	0.8%
1966		16		4	2			22	2.4%
1967	1	24		1	4			30	3.2%
1968	1	9						10	1.1%
1969	1	8						9	1.0%
1970	5	4						9	1.0%
1971	3			8		6		17	1.8%
1972	3			13				16	1.7%
1973	2			9				11	1.2%
1974				11				11	1.2%
1975				18				18	1.9%
1976				21	9			30	3.2%
1977				23	22			45	4.8%
1978					46			46	4.9%
1979				38	39			77	8.3%
1980				52	22			74	7.9%
1981		18		14	16			48	5.1%
1982		55		30	31			116	12.4%
1983		59		33	55			147	15.8%
1984		35		25	16			76	8.1%
1985		52		40			18	110	11.8%
TOTAL	24	281	2	340	262	6	18	933	100.0%
PERCENTAGE	2.6%	30.1%	0.2%	36.4%	28.1%	0.6%	1.9%	100.0%	

* In 1985 9 each from the Ministerio de la Presidencia and from Fondos PROCARPA.

Table C

**CONSTRUCTION COST AND DESIGN POPULATION
OF WATER SYSTEMS CONSTRUCTED BY SANAA**

1964 to 1985

YEAR	COST IN CURRENT LEMPIRAS	COST IN CONSTANT LEMPIRAS		DESIGN POPULATION *	
		amounts	percentage	amounts	percentage
1964	140,325	144,325	0.7%	3,800	0.4%
1965	229,016	233,970	1.1%	10,300	1.0%
1966	1,227,959	1,227,959	5.7%	49,000	4.8%
1967	2,145,556	2,064,829	1.6%	99,300	9.7%
1968	827,598	786,823	1.6%	26,100	2.6%
1969	428,139	393,519	0.8%	12,400	1.2%
1970	469,184	420,838	1.0%	9,900	1.0%
1971	376,237	331,603	0.5%	21,300	2.1%
1972	359,009	303,334	0.4%	17,000	1.7%
1973	279,256	221,342	0.0%	18,400	1.8%
1974	356,849	253,204	0.2%	15,700	1.5%
1975	408,548	265,255	0.2%	22,900	2.2%
1976	1,056,465	632,431	0.9%	30,700	3.0%
1977	2,325,730	1,226,943	0.7%	61,300	6.0%
1978	2,131,822	1,051,937	0.9%	52,700	5.2%
1979	3,264,282	1,495,602	6.9%	91,800	9.0%
1980	4,134,857	1,715,932	8.0%	66,400	6.5%
1981	3,429,573	1,353,557	6.3%	38,000	3.7%
1982	6,075,832	2,233,538	10.3%	67,400	6.6%
1983	7,720,016	2,675,993	12.4%	152,500	15.0%
1984	2,959,240	986,413	4.6%	60,800	6.0%
1985	4,857,900	1,561,700	7.2%	91,700	9.0%
TOTAL	45,203,103	21,581,048	100.0%	1,019,400	100.0%

* Design population was unavailable for the 18 systems funded by the Ministerio de la Presidencia and Fondos PROCARPA; benefitted population was used instead.

Table D

**RURAL WATER SUPPLIES PROJECT, 1962 TO 1970
USAID PROJECT # 5220044**

RESULTS DURING AND AFTER THE PROJECT

DESIGN ELEMENTS

Project Period	Results During Project 1962 to 1970	Results After Project 1971 to 1986
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OUTCOMES:

Increase in quantity of water supplied to homes	achieved	largely sustained
Increase in quality of water supplied to homes	achieved	largely sustained

OUTPUTS:

Construct 24 water systems according to specifications	achieved (62 built)	not applicable
Operate and maintain 24 water systems	achieved	largely sustained

NON-DESIGN PROJECT ELEMENTS

1971 TO 1986

OUTCOME:

Improve SANAA's institutional capability	achieved	SANAA strengthened as institution
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OUTPUT:

Construct water systems	achieved	SANAA continues to build water systems
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Table E

RURAL WATER SUPPLIES PROJECT, 1962 TO 1970
 USAID PROJECT # 5220044

SUSTAINABILITY FACTORS AND POST-PROJECT RESULTS

DESIGN OUTCOMES AND OUTPUTS
 (relating to the 24 water systems)

SUSTAINABILITY FACTORS	CONTRIBUTION TO CONTINUATION OF POST-PROJECT DESIGN OUTCOMES AND OUTPUTS
COMMITMENT TO GOAL	
SANAA, communities, and international donors committed to water system programs	moderately important
INTEGRATION AND CONCENTRATION OF PROGRAM ACTIVITY	
SANAA was and continues to be a very vertical organization	important
FINANCING	
Honduran funds continue to be used for operation and maintenance	important
Honduran capital funds not substituted for foreign funds during Project	unimportant
User fees pay only part of operation and maintenance costs	moderately important
BALANCE OF MATERIAL AND HUMAN RESOURCE SUPPORT	
USAID assistance predominantly for capital costs	unimportant
TECHNICAL ASSISTANCE	
At the outset SANAA apparently did not set the objectives of or direct the technical assistance	unimportant
Host country nationals acquire skills during implementation	moderately important
TRAINING	
Not a project component	unimportant
COMMUNITY PARTICIPATION	
The communities request water systems and contributed to their capital costs; water users pay fees.	important
USAID POLICY DIALOGUE AND RELATIONS WITH HOST COUNTRY GOVERNMENT	
USAID and the Government of Honduras favored the creation of SANAA	moderately important
With respect to the project design, USAID apparently accommodated some features proposed by SANAA	important
DONOR COORDINATION	
Little donor coordination	unimportant

L WATER SUPPLIES PROJECT, 1962 TO 1970
 USAID PROJECT # 5220044

SUSTAINABILITY FACTORS AND POST-PROJECT RESULTS

NON-DESIGN OUTCOMES AND OUTPUTS
 (relating to SANAA capability to continue to build water systems)

SUSTAINABILITY FACTORS	CONTRIBUTION TO CONTINUATION OF POST-PROJECT NON-DESIGN OUTCOMES AND OUTPUTS
COMMITMENT TO GOAL	
SANAA, communities, and international donors committed to water system programs	very important
INTEGRATION AND CONCENTRATION OF PROGRAM ACTIVITY	
SANAA was and continues to be a very vertical organization	very important
FINANCING	
Honduran funds continue to be used for operation and maintenance	important
Honduran capital funds not substituted for foreign funds during Project	unimportant
User fees pay only part of operation and maintenance costs	moderately important
BALANCE OF MATERIAL AND HUMAN RESOURCE SUPPORT	
USAID assistance predominantly for capital costs	unimportant
TECHNICAL ASSISTANCE	
At the outset SANAA apparently did not set the objectives of or direct the technical assistance	unimportant
Host country nationals acquire skills during implementation	moderately important
TRAINING	
Not a project component	unimportant
COMMUNITY PARTICIPATION	
The communities request water systems and contributed to their capital costs; water users pay fees.	important
USAID POLICY DIALOGUE AND RELATIONS WITH HOST COUNTRY GOVERNMENT	
USAID and the Government of Honduras favored the creation of SANAA	unimportant
With respect to the project design USAID apparently accommodated some features proposed by SANAA	moderately important
DONOR COORDINATION	
Little donor coordination	unimportant

ANNEX C

FAMILY PLANNING PROGRAMS

A. INTRODUCTION

AID support to family planning programs in Honduras spans a period of approximately twenty years, beginning in 1966 with the signing of the first project agreement (522-0065). AID assistance to this sub-sector has had three distinct project designs: the first, Maternal/Child Health & Family Planning, was a highly vertical, largely AID-managed operation during the period 1966-1976; the second, Integrated Rural Health/Family Planning, was a highly integrated project (1976-1981) in which the family planning activity was negligible and the last, from 1981 to the present, a component Health Sector I, which appears to fall between the earlier efforts with both vertical and integrated characteristic. The first project will be discussed in some detail below; the last two, will be briefly noted here and in Annexes E (Rural Penetration) and F (Health Sector I).

B. MATERNAL CHILD HEALTH/FAMILY PLANNING PROJECT

Project Description.

In the early 1960s, prior to the initiation of AID support to the government of Honduras, the International Planned Parenthood Federation (IPPF) affiliated Honduran Family Planning Association (ASHONPLAFA) began providing family planning services. In 1965, in response to ASHONPLAFA promotion efforts the Honduran government agreed to institute a national family planning program through the Ministry of Health. In 1966 USAID/Honduras began its major family planning project (Maternal/Child Health and Family Planning Project) by assuming almost all direct costs of the governments efforts, including: training equipment, salary incentives for MOH personnel, administrative and educational services and materials. Contraceptives were supplied by IPPF and the Population Council. This project lasted until 1976.

The project goal was to contribute to a reduction in the population growth rate from 3.6% in 1968 to 2.9% in 1974 (201). Although project documents report that the 1974 census found an annual rate of population growth of 2.8%, a level below that projected by the project designers, and attributed the drop in growth rate to the program (216), their calculations were subsequently found to be in error with the growth rate more likely to be on the order of 3.5% (62).

The project objectives, with respect to numbers of women using contraceptive services, changed significantly over the years as is apparent in the following Table 1.

Table 1

OBJECTIVES OF MATERNAL/CHILD HEALTH PROJECT, 522-0065:
 FAMILY PLANNING USERS, PROJECTED AND (ACTUAL)
 BY DOCUMENT SOURCES AND YEAR OF ACHIEVEMENT

Document	1971	1972	<u>END CY</u> 1973	1974	1975
AID Project		32,000			
AID Project Rev 1'70	40,000				
AID Project Rev 2'71	(31,000)			130,000 MOH 35,000 Commercial	
AID Evaluation '72		(26,103 cumulative)			
AID Evaluation '73		(35,000 MOH) (10,000 ASHONPLAFA) (17,300 commercial)			130,000 including 75,000 MOH
AID Evaluation '74			(44,000 MOH) (13,000 ASHONPLAFA) (20,000 commercial)		107,000 including 60,000 MOH
AID Evaluation '74				107,000	
AID Evaluation '75					data system revised to show clients not visits
Overall Project Evaluation '75					(38,000)

A Maternal-Child Health Section was established within the Ministry of Health, however, it operated largely independently of other Ministry structures. This unit directed training of administrative and clinic personnel, both overseas and in-country. These trained personnel worked in specially designated portions of Ministry clinics, reserved only for family planning. The Family Planning Unit set up separate accounting, service statistics, and all other administrative services (e.g. supervision) to manage the family planning service program. This degree of verticality was repeatedly described in AID documents as necessary to avoid bureaucratic obstacles and to facilitate accounting and control of AID funds.

Following the election of President Cruz in 1971, project documents consider the prospect of integration of the family planning unit into the administrative structures of the Ministry by 1973 (201). After the Lopez Arellano coup in 1972, the new Minister of Health was believed to be in favor of the program, but desired to have it completely integrated into the Ministry. A sweeping re-orientation of health service delivery known as the Rural Penetration Program (See Annex E) was taking place.

AID documents in 1972 indicate that the Ministry was working on plans for integration, which were to be presented to the National Congress for approval in May or June. In March, 1973, AID documents indicate that the Minister and the Sub-Secretary of Health wanted to delay the integration of the family planning program until plans could be formulated for financial and program support (203).

By December of 1974, plans for integration of the family planning progressed. AID documents indicate that by the end of 1975, the Ministry would pay all salary and administrative costs of the family planning project from its regular budget on a continuing basis, and that the administrative structure would be completely integrated with other offices of the Ministry (216). In addition, the Ministry was to establish 83 new Civil Service positions to absorb family planning staff, and pay their severance pay as required by law prior to the formal transfer of employees to the Civil Service. By March 1975, the program was administratively integrated into the Ministry. AID financial input for this project totalled \$3,774,000 over eleven fiscal years. Unfortunately, the overall evaluation done in mid-1975 does not analyze these expenditures, nor does it discuss the costs of various project elements.

The contribution of the Honduran government, however, is mentioned in several available project documents. In the 1970 revised project document, it is noted that Honduras had made sizeable previous allocations to this project. In November 1971, \$75,000 had been budgeted in 1972 for this program, the same amount as the previous government had budgeted. In March 1974, AID documents state that the Honduran government's assumption of project costs has been slow, but adds that substantial increases were expected shortly. June 1975 documents note that Honduran funds had been allotted for the following year. The project evaluation reports that AID was only funding limited personnel and contraceptives by mid-1975.

There were other donors during the project period, but no clear record of such financing has been found.

Evaluation of Results

While AID project evaluators concluded that this project may have been successful, since estimated annual growth rates were reported to have declined from 3.4% to 2.8%, (201), other project documents repeatedly acknowledged that reliable data were not available and other sources also suggest that there is no reason to conclude that the project had significant impact on population growth (62). Indeed, very little changes in crude birth rate and total fertility rate appeared during the project years.

Considering the objectives of family planning users, the project appears to have been unsuccessful as only 38,000 users were active in the program by the end of the project. However, this conclusion is confounded by the statement made in 1975 AID documents regarding the change from counting family planning visits to counting acceptors. If previous estimates of 107,000 - 130,000 acceptors were based on data which were thought to be acceptor numbers, but which were actually visits, program growth may have been as planned. 38,000 users could have made 120,000 visits if each visited about three times per year, not an unusual occurrence.

In any case, after almost a decade of major funding, the achievement of only 38,000 users, can be evaluated as quite modest.

Sustainability Factors

1. Commitment to Goal and Project Negotiation

While this project had the consent of the Honduran government and the Ministry of Health, project documents, even as early as 1969, are clear that there was less than full commitment to this project. Several informants who themselves profess to support family planning indicated that the vertical nature of this project, and the inequities between the project and other service delivery programs caused resentment and substantially reduced commitment within the Ministry. It was seen as an AID project without full involvement of Hondurans. Indeed, the 1969 project document states that Honduran officials were "somewhat reluctantly" associated with the project (208). While a 1970 project revision discusses the "relaxation of the Government's prior resistance," this was likely to have been only a relative change. President Cruz campaigned against the project in 1971, but allowed it to continue after his election. However, after the Lopez Arellano coup of 1972, the Ministry moved to integrate the vertical program and by 1975 had achieved this integration, while at the same time substantially reduced its family planning activities. Resources were then shifted to other maternal and child health priorities.

In hindsight, it may very well be that the problems suffered by this program may not have been entirely a lack of commitment of Hondurans to the family planning program goals but rather, that the "higher goal" of extension of coverage and integration of health services had greater salience at this moment in history. One can only speculate on whether family planning activities might have continued, in a much modified organizational service structure, if AID had moved more quickly with significant financing for support of the very powerful movement to extend health service coverage. AID however resisted Ministry efforts to de-emphasize the vertical program and to provide resources for other activities.

2. Institutional Organization of Project

This project started as an extremely vertical effort, and, because it was relatively well-funded, it created considerable resentment in other service delivery entities of the ministry. Indeed, some Honduran observers subsequent

to this period feel that the real resistance to family planning per se were mid-level Ministry officials who were abused or ignored during the difficulties with this program during the early and mid-70's.

The reason given for the completely vertical program was to enable a high degree of control over personnel and budget, presumably to ensure that AID resources were used only for their intended purposes, thereby improving chances for success. It should be noted that the vertical nature of the program in Honduras is not unlike AID's own internal structure for population assistance at that time. The dismantling of the program in 1975 and in projects subsequent to this time seems to have nullified any benefit of such a concentrated start. In retrospect a less categorical approach might have had better long-term results.

It should be recognized that although personnel were "integrated" into the Ministry, they no longer pursued goals and objectives of family planning. There was no major integrated family planning program in the Ministry until the 1980's.

3. Financing

AID funded almost all direct costs for this program at the beginning, including personnel. While the Ministry picked up an increasing portion of personnel costs at the end of the project, only something over 50% of project staff were retained when the Ministry took over the program, thus greatly reducing the pool of personnel to carry on the program activities. For example, the educators were dismissed, because the Ministry determined that it could not afford the recurrent cost of salaries (about \$90,000 per year). (216).

4. Technical Assistance

There was a great deal of short-term technical assistance from centrally-funded AID programs during the course of this project. However, only one full-time advisor to the Ministry was mentioned during the early years of the project. It is not clear how long this technical assistance was present.

Given the record regarding the Ministry's lack of involvement in setting project objectives, it seems unlikely that the Ministry was very active in setting the agenda for such technical assistance, thus reducing its likely impact.

5. Training and Personnel

While the Ministry unit employed those persons trained, only something over 50% were retained after integration into the Ministry, thereby significantly reducing potential sustainability of the provision of family planning services by trained personnel. A few of those who left the Ministry at this time continued working in the family planning field in the private sector agency ASHONPLAFA.

6. Community Participation

There is little evidence of community participation in this project, except as family planning clients.

7. Donor Coordination

IPPF and the Population Council, both heavily dependent on AID support, provided contraceptives for this project, apparently in an adequate quantity and variety. There is no evidence of other bilateral or multilateral sources of funds. It does not appear, however, that the Ministry took a very active role in such coordination.

C. INTEGRATED RURAL HEALTH/FAMILY PLANNING PROJECT

The second major family planning project in the 1970's, Integrated Rural Health/Family Planning, demonstrated the long term negative implications of the earlier project. It was designed by AID officials to tap both family planning and health funds and was rushed through the AID approval process and through the Ministry under the end-of-fiscal year pressures in 1976. AID was forced to backtrack when the Ministry, still resentful of the earlier project, refused to implement the family planning aspects of the project. Indeed, a project evaluation report in 1978 (221) indicated that the family planning content of the 10 month auxiliary nurse training course totalled only 4 hours, out of a total curriculum of 1,600 hours. The project really only emphasized the general training of auxiliary courses and is best treated as a major component of AID support for the Rural Penetration program (see Annex E.)

D. HEALTH SECTOR I

The family planning component of the current Health Sector I project has only recently (in 1984) gained significant support at the highest levels of the Ministry after almost decade of resistance. Now, however, family planning appears to have become a priority of the Ministry and various training and outreach activities have begun. Following a November 1983 announcement of the Ministry Family Planning Program, norms for family planning activities were announced in 1984. Fairly extensive family planning training of auxiliaries at the CESAR and CESAMO levels has been accomplished and contraceptives appear to be cyclically available - although the Ministry has only recently begun to remove large quantities of out-of-date pills acquired during the earlier projects. In addition, family planning components has been added to the mass media outreach and the breast feeding projects (see Annex F).

While it is important to note the shift in Ministry commitment to the objectives of family planning, it is too soon to evaluate the current impact of this sub-component of Health Sector I, and hard to forecast its sustainability - although it seems likely that some foreign funding is essential to continuation of this activity.

E. ASHONPLAFA

It should be recognized, that the activities of the private family planning association, ASHONPLAFA, which now receives significant direct AID funding and previously received almost all of its funding from International Planning Parenthood Federation, appears to be growing in effectiveness. Beginning as a largely urban-based program in Tegucigalpa and San Pedro Sula, it has branched out in the last few years into rural areas. A recent survey found that over 75% of Honduran women had knowledge of contraceptive devices, and 35% of the women in union were using some contraceptive method (101). This last figure marks a significant rise in only three years (in 1981 the figure was 27%). Of the women using oral contraceptives, 52% received their pills from ASHONPLAFA. Again, however, ASHONPLAFA is almost entirely dependent on external funding and appears unlikely to be sustained without continuous foreign support.

ANNEX D

Nutrition *

Widespread malnutrition has been and remains a serious problem in Honduras, particularly among children under 5 and pregnant and lactating women. Studies as early as the 1950s estimated the under 5 malnutrition rate at 70% or more, and these high rates have continued or possibly increased since then. While studies show the infant mortality rate decreasing from 86.6 to 78.6 (per 1,000 live births) from 1977 to 1983, the percentage of malnourished children remained at 72.5% (52). Continued poverty is clearly a major factor in the lack of progress.

In 1965-1966, INCAP carried out the first comprehensive, national assessment of nutrition in Honduras. (68) Over 70% of children under 5 were found to be malnourished, 2.4% severely, 28.7% moderately, and 45.4% mildly. Although studies show anemias, vitamin A deficiencies, and shortages of riboflavin, iodine, and other trace minerals to exist on a wide scale, protein-calorie malnutrition is by far the country's most critical nutritional problem. (228)

Reducing malnutrition is a major and complex challenge for any developing country. (228) Optimally, policies not only aim to increase national income but also address land tenancy, agricultural credit, agricultural technical assistance, roads, internal markets, food prices, income distribution, food habits and beliefs, export vs. consumption crops, and last but not least, health status, which reacts synergistically to improve or worsen nutritional status. Achieving coordinated national policies and programs was indeed the goal of a major AID project in Honduras from 1976 to 1981, but the project's effectiveness was limited by the lack of strong top-level political commitment that is necessary for successful intersectoral coordination. Moreover, the commitment and ability of the technical personnel in the different participating ministries were neither sufficiently strong nor adequate for this type of multisectoral intervention.

The U.S. government has also worked to improve nutrition in Honduras through food distribution programs that have continued since the 1950s. These programs have been administered by CARE and Catholic Relief Services/Caritas. A large number of other private and voluntary organizations and bilateral programs have established food distribution programs in recent years, and the GOH is making progress in coordinating these efforts.

History of Nutritional Improvement Efforts in Honduras

During the early 1950s, the GOH made the first attempts to identify and try to resolve national nutrition problems. (164) During that period, public

* Sources for this annex include interviews with Gomez Padilla, Palma, Elvir, Schwartz, Castillo.

awareness of the nutritional problem was heightened by a series of studies done in conjunction with INCAP which led to the creation of the Unidad de Nutricion within the Ministry of Government, Development, and Health. The principal concerns of that unit were for the delivery of nutrients to school-age children and for nutrition education programs. It was during this period that the CARE school feeding program was initiated to help support this effort.

In the mid-1950s, the nutrition unit was transferred to the Secretariat of Public Health and Social Assistance, thereby creating the Department of Nutrition within this Secretariat. (202) The school feeding programs were continued and special feeding programs created in hospitals and clinics for the children who were detected as having nutritional deficiencies. This detection and treatment of malnourished children by health centers became the predominant approach to nutrition problems in the 1960s.

At least as early as 1959, the GOH and external donors considered efforts to institute a coordinated national nutritional policy. In that year, the Food and Agriculture Organization, the Pan American Health Organization, and UNICEF elaborated an integrated plan for nutritional education and development with the GOH. (53) The plan called for nutritional education through health centers, schools, 4H clubs, and other activities through agricultural extension and basic education increasing production of nutritious foods such as vegetables, fruits, eggs, poultry, rabbits, fish, etc.; nutritional recuperation through food supplementation of high-risk mothers and children and through administering iron to all pregnant women. To achieve these objectives, the program was to sponsor various training activities and effective coordination among the ministries of health, education, and natural resources, and local and international organizations.*

Although the program reportedly started well, particularly through the schools in the Choluteca area, it ultimately achieved limited success, as the three collaborating ministries lacked funding and the willingness to sacrifice their own resources for the benefit of the joint project. This theme is repeated throughout the history of nutrition programs in Honduras.

Clearly, nutrition was not a major priority in these years. Within the MOH in the mid-1960s, the Department of Nutrition had a director, three nutrition educators (trained for several months at INCAP), and two nutrition educators in Choluteca. The total budget was approximately \$15,500, of which \$15,000 went to salaries.

INCAP and the GOH took several positive steps beginning with the 1966 INCAP survey, national seminars on national food and nutrition policies in 1968 and 1974, the creation of a National Food and Nutrition Council in 1968, the

* One source describes this nutrition policy as "only a catalog of good intention, which were not sufficiently discussed with the executing agencies and which did not receive budgetary support."

elaboration of food and nutrition policies in the ministries and health and natural resources in 1971, and the outline of a national food and nutrition policy in the National Development Plan for 1974-1978.* With technical assistance from INCAP, a national nutritional assessment was carried out in August-November 1975. (164)

In partial response to these initiatives, AID provided a major grant/loan package from 1976 to 1981 aimed at increasing the GOH's capability to carry out analysis, planning, and evaluation activities regarding nutrition programs and at developing institutional elements and rural infrastructure essential to dealing with national nutrition problems. (228) At the same time, ROCAP and INCAP signed an agreement to provide technical assistance to support the AID-assisted program. The major AID long/grant package was to cover the following:

<u>Project Activity</u>	<u>AID Grant</u>	<u>AID Loan</u>	<u>GOH Contribution</u>
analysis and planning	466	-	730 (1,000s of US\$)
nutrition education	164	200	10
environmental sanitation	20	1,650	500
pilot projects	-	1,650	400
	650	3,500	1,800

Major project activities included:

a. Analysis, planning, and evaluation. i. establishing a national nutrition surveillance system. ii. designing systems and procedures to evaluate nutrition-related programs. iii. conducting a series of studies aimed at analyzing the extent, nature, and causes of nutrition problems, in order to improve the design and coverage of nutrition-related programs.

b. Nutrition education. Long-term and short-term training of personnel in GOH agencies and institutions involved in nutrition-related activities. i. 6 years of participant training in nutrition planning and related fields for GOH personnel engaged in national nutrition planning. ii. 360 months of training, 6 months for 60 people, for technicians who work in nutrition programs. iii. 320 months of in service training for 320 extension agents and promoters who will conduct outreach activities. iv. design of primary school curriculum supplements and non-formal education packages concerning nutrition. v. design and production of a series of 30-second radio spot messages on nutrition, and broadcast of these on a nationwide hookup of 16 radio stations. vi. purchase of essential audiovisual equipment and training of staff in their use in producing audiovisual materials on nutrition.

c. Water supply and environmental sanitation. Assist in provision of potable water and sanitary waste disposal for over 500,000 people. i. construction of

3,000 low-cost water wells or gravity-fed systems per year in rural areas. ii. construction of 10,000 latrines per year in the same communities. iii. nutritional education in these communities. iv. an evaluation of the impact of these facilities on the nutritional status of the families benefited.

d. Pilot projects. i. a series of small, community-level projects for increasing the availability of food products for consumption by the families involved. ii. improvement and expansion of fish farming as a source of more food. iii. research into methods for introducing soya into the diets of rural families. iv. applied research concerning the use of new varieties of sorghum.

This program was coordinated by the Technical Secretariat of the National Planning Council (CONSUPLANE) and the MOH. In late 1976, System of Analysis of Food and Nutrition Planning (SAPLAN) was created within CONSUPLANE to administer the program. AID funding provided full-time staff members on a Program and Projects staff from the MOH, MOE, National Social Welfare Board, National Agrarian Reform Institute, and Ministry of Natural Resources (agriculture). The respective organizations submitted projects to SAPLAN for funding under the AID guidelines.

The results of SAPLAN's activities were mixed. SAPLAN coordinated a major national study of food and nutrition from 1978-1980, which still provides very useful information today. A nutritional surveillance system established in the Danli area worked well, but no funds were available for national expansion, and there was little organized follow-up of the nutritional problems identified. (138, 153, 177).

The MOE conducted many courses, developed educational materials and nutrition texts for schools, and presented thousands of spot radio messages. Although most of these activities ended with the end of AID funds in 1981, some of the donated equipment is still in use. These nutrition education activities were not, however, coordinated with education, carried out by health workers -- an indication of the lack of coordination among ministries.

The Ministry of Natural Resources conducted three projects: promotion of soya cultivation and consumption, a sorghum project in southern Honduras, and an aquaculture project in Comayagua.

The MOH's wells and latrines projects were quite extensive and apparently successful. The available AID resources were used well in the Rural Penetration Program, which had generated national and community enthusiasm in the mid-1970s. The material support through SAPLAN was vital to the work and credibility of health promoters.

The income-generation projects of the National Social Welfare Board (book-keeping, pig and chicken raising, sewing, irrigation) had little success, but cattle-raising activities of the National Agrarian Institute still continue.

A number of criticisms have been made of the AID project and the functioning of SAPLAN. SAPLAN was a planning and policy-making organization but could not execute projects. Execution depended on the mixed effectiveness of the

participating organizations. SAPLAN lacked management capabilities but AID and INCAP technical assistance was technical rather than managerial. SAPLAN lacked the necessary prestige and high-level representation from the participating organizations. The institutional representatives came with their own agendas of projects they wanted funded, not with an attitude of working selflessly to define the best programs to reduce malnutrition, regardless of which group most appropriately implemented them. These projects of the participating ministries generally functioned independently, with no coordination among them. While the project trained many Hondurans, there are differing opinions on whether many of these people remain working in public health nutrition.

Although early project evaluations had been quite positive, a 1981 evaluation by AID's Office of the Auditor General found project achievements to be few. The evaluators reported that the lack of implementation experience of SAPLAN, along with the project's complex design, led to poor overall management and little coordination with other involved agencies. The limited success of many activities stemmed from procurement problems such as unrealistic timeframes and inadequate selection and utilization of equipment. The fish demonstration/research center was reported to be poorly functioning. The nutrition surveillance system in Danli, community miniprojects, and the soy production project were reported to be functioning well. According to USAID/Honduras information, just over half of appropriated AID funds were ever dispersed.

With the end of AID funding in 1981, SAPLAN's budget was cut by two-thirds. SAPLAN was dissolved in 1983 and replaced within CONSUPLANE by a small coordinating unit. This unit continues its coordinating function with some success (it administers an interagency committee on food distribution programs and is overseeing in service training for personnel of these programs), but it has no representatives from the other agencies.

Today, INCAP and AID/ROCAP are once again working on many of the types of activities begun during the SAPLAN period. (67) The MOH plans a second national nutritional surveillance survey, and the Ministry of Education a height census of first graders. Both of these projects are funded by AID, with supplemental funding from INCAP. INCAP, AID, and the Government of France are collaborating in supporting nutrition training for MOH personnel. A large number of governmental and international groups have food donation programs (these will be discussed in detail below). AID and the Government of Canada are supporting government efforts to survey dental health, evaluate the national salt iodization program, and to fortify sugar with vitamin A. The Government of Switzerland is supporting nutrition training at the university level and in service training in health organizations. ROCAP has a large regional child survival project that works through the Divisions of Maternal and Child Health and Epidemiology. And the Government of Italy supports training and technical assistance in research on basic grains.

While this array of projects is impressive, the fact remains that nutrition planning and programs are still supported mainly by external donors.

Government support remains modest, and the Nutrition Division modestly staffed. Nutrition is not emphasized in the medical school, so physicians do not appreciate its important role in health.

While SAPLAN helped strengthen the nutrition units in most of the participating organizations, most remain relatively weak and underfunded. The Junta operates child development centers and has one nutritionist on staff. The Ministry of Labor has a day care department. The Ministry of National Resources has a rural youth program, administers some food for work projects, and has recently established a food unit. The Ministry of Education has a school garden program and administers a fortified milk program for students, but has no professional nutritionist on staff. The Ministry of Health nutrition program has approximately 15 nutritionists and operates 7 nutritional recuperation centers and three intensive care units for severely malnourished children. But the program in general is described as weak and disorganized, with few norms, unclear policies, and no regular budget. An active national breastfeeding promotion program (PROALMA) established in 1983 works quite independently of the MOH. This program will be discussed under Health Sector I.

Sustainability Discussion

Except for food distribution, AID's support to nutrition planning and programs in Honduras began only ten years ago. As the above history describes, the achievements of SAPLAN were limited, and some of the benefits achieved were lost rather quickly with the cessation of AID funding in 1981. It is interesting to note, however, that other Central American countries, most notably Costa Rica, studied and built on the SAPLAN's experience in Danli to create their own systems for nutritional surveillance.

1. Political commitment. SAPLAN was basically an AID/INCAP creation that did not grow naturally out of Honduras's readiness for real intersectoral nutrition programming. It is true that the GOH took a number of steps in the years prior to the AID project to indicate some recognition of the problem of malnutrition and determination to address it. Yet at no time past or present, has the GOH invested a significant amount of its own funds in nutrition-improvement projects. It is noteworthy that a major portion of AID funds available under the nutrition program were channeled to the health program to which the government was most committed--the Rural Penetration Program--in support of the small water and sanitation projects.

2. Project Negotiation/donor coordination. AID and INCAP encouraged governments throughout the region to establish intersectoral nutrition planning systems. Thus, although Honduran officials had been thinking along similar lines, the major impetus, and enabling funding, came from abroad. While AID and INCAP appeared to have worked well together on this project, there is one report of some disagreements between USAID/Honduras and the AID regional office (ROCAP). (153)

3. Institutional Organization. Although SAPLAN was intended to integrate the nutrition-related efforts of a number of government agencies, it never had the ability to manage programs. It thus ended up serving as a mechanism for collaborating agencies to fund their projects. SAPLAN, thus had the advantages of neither a vertical nor of an integrated organization. The SAPLAN experience yields no obvious lessons regarding the advantages of integrated or vertical programs for sustainability.

4. Financing. The project had few hopes of financial sustainability without continued external funding. The AID loan/grant package of over \$4 million was over twice the GOH contribution, much of which the GOH would have spent anyhow through the respective agencies. As described, SAPLAN was terminated shortly after the AID support ended.

5. Role of technical assistance. The technical assistance (one INCAP long-term advisor and many short-term advisors from INCAP, AID, and UNICEF) was given at modest levels that have been sustained by the same external groups. More importantly, a number of key Honduran counterparts continue to work in positions related to nutrition planning in Honduras. Evaluators have noted the need for technical assistance in management which was not forthcoming.

6. Training and personnel. As noted, a great number of Hondurans received training under the AID program, and at least some of them continue to work in nutrition-related positions.

7. Community participation. Community participation was unimportant in SAPLAN's work, but it was quite important in some of the field projects funded by through that agency, particularly the small water and sanitation projects of the MOH and the community miniprojects of the JNBS. The role of community participation in strengthening project sustainability, however, appears to be minimal.

8. Effectiveness Opinions among Hondurans associated with the project differ significantly. One source says that SAPLAN became politicized and ineffective, and that most of the people trained went on to different jobs. Another source credits SAPLAN with raising the national consciousness about malnutrition, strengthening the appreciation of nutrition as a multisectoral problem demanding multisectoral solutions, and with training many people who are still working to improve nutrition in Honduras. Another source reports that some of the community miniprojects continued with funding from the Government of Germany. We have already noted the mixed effectiveness of the projects of the individual organizations that constituted SAPLAN.

U.S. Food Distribution Programs

Since the 1950s, the U.S. government has supported food distribution programs in Honduras under P.L. 480. Some provisions of this legislation provide for the U.S. to sell substantial amounts of wheat to the GOH, which it in turn sells to the private sector. If the proceeds are used to fund food and

agriculture- related development projects (e.g., to encourage local production of food crops, better storage and marketing of grains), the GOH does not have to repay the U.S. soft loans that financed the original purchases. Other major food distribution programs are administered by CARE and Catholic Relief Services through Caritas, its Honduran affiliate. The U.S. Government donates and transports this P.L. 480 food to a port of entry. CARE and Caritas together reach approximately 425,000 beneficiaries, including 120,000 preschool children and pregnant or lactating women.

CARE began its food distribution programs in Honduras in 1959. (52) It administers the storage and transportation of food through:

1. Maternal and child health programs.

- MOH facilities (hospitals, health centers, nutrition recuperation centers), which distribute food monthly to pregnant and lactating mothers and malnourished children
- JNBS facilities, which prepare food daily. JNBS community nutrition centers supplement P.L. 480 food with food purchased locally.
- community programs of international and Honduras private and voluntary agencies.

The beneficiaries are children under 5 and pregnant and lactating women, orphanages, and day care centers.

2. School lunch program. CARE provides food for the national school lunch program (300,000 students in 4,000 schools).

CARE's programs account for the great majority of U.S.-sponsored food. The participating GOH agencies pay CARE for the cost of administrative expenses such as transportation and warehousing, which have risen sharply in recent years. The GOH's current contribution is approximately \$1 million per year, which it obtains from ESF funds.

Caritas distributes food through its housewives' clubs and through a food-for-work program that gives food in return for labor on community development projects. (149, 157) The housewives' clubs carry out such projects as well-digging, vegetable gardens, and income-generating activities. FFW projects are organized by volunteer Caritas promoters and parish priests, sometimes in collaboration with MOI and SANAA projects. Since 1967, the GOH has contributed \$50,000 per year towards covering Caritas' administrative expenses. At least in part because of the organization's reluctance to work closely with the GOH, Caritas is unlikely to request an increase in this subsidy, although it is quite inadequate.

There are many other private and governmental food distribution programs in Honduras. (52) CONSUPLANE has established a committee representing the major programs, that meets every two months. ROCAP/INCAP are also supporting in service training for staff of all of these programs.

CONSUPLANE, the MOH, the JNBS, the Ministry of Natural Resources, and the Institute of Professional Training has prepared a national policy on food distribution programs that has been presented to the President for approval.

Evaluations of these food distribution programs emphasize management and administrative problems. Because of the lack and difficulty of obtaining useful nutritional data, the nutritional impact of the donated food has never been adequately measured. It seems clear, however, that the community development projects that food distribution facilitates have positive benefits for health and nutrition and continue in at least a small way to long-term solutions to nutritional problems. The JNBS in particular is interested in using food aid as a developmental tool, and CARE staff share this desire.

Sustainability

There is little hope that the need for food AID in Honduras will disappear soon. Malnutrition in Honduras continues to afflict some 70 percent of children under 5. A major portion of the rural population cannot consistently grow or purchase sufficient food for their families. It seems likely that if for some reason the U.S. Government suspended its food aid, some other foreign donors would step in.

While the food distribution programs will probably depend on external donors for some time, there is now some interest in AID to at least seriously investigate the possibility of the GOH purchasing more of the food on the local market and/or of taking over more of the transportation and warehousing duties. Indeed CARE is involved in a slow process of turning over more of such responsibilities to the Ministry of Education. A major program evaluation scheduled for 1987 will be critical in assessing such possibilities for the Honduranization of the programs.

The sustainability of the food programs would be enhanced if the food provided were used more as a development tool, to stimulate basic health and nutrition education, local food-production projects, and local income generation projects. Through such means, food aid can at least contribute to local food self-sufficiency and to a decreasing need for widespread food distribution in Honduras.

ANNEX E

RURAL PENETRATION PROGRAM

The Rural Penetration Program is an unusual case study in this evaluation. Rather than a study of an AID project, it is a study of a broad-based program of the Ministry of Health, a program that included three AID projects as well as projects of other international donors. We chose to treat this government program as a case for a variety of reasons. The Rural Penetration Program was a watershed program in the Honduran health sector, a program that dominated health activities in its period and that has remained a major influence in the sector. It is thus extremely important to understand the program as a whole to understand the role of AID projects in that period. Secondly, by viewing the program as a context within which AID functions, we gain an appreciation of the systemic influences on AID projects, a perspective that is less clear when we focus attention only on AID projects. Thirdly, since other donors often played a more important role than AID, we gain an additional perspective on the projects and participation of other donors. We therefore present the Rural Penetration Program as a case and highlight the role of AID projects within it. For each AID project, however, we also evaluate its sustainability according to our established methodology.

In 1972, following the coup of General Oswaldo Lopez Arellano, a new team of health officials was appointed to take charge of new reform efforts in the health sector to complement a general reform movement in other sectors. This team initiated a variety of programs, the most significant of which was a massive extension of primary care coverage into the rural areas, called the Rural Penetration Program. This program was unusual in several ways. First, the initiative for the program was largely national in origin, and AID's contribution was subordinated to the national agenda and goals. In addition, other donors, in particular PAHO, UNICEF, and IDB, played a more active role in the design, implementation, and funding of the program than did AID. Second, there was an unusual national commitment to the project and unusual stability among key Ministry of Health staff. The program, fully implemented in the period 1973-78, when the original MOH team was in office, and encompassed three major A.I.D. projects: 1) the final stage of the Maternal Child Health and Family Planning Project (1965-76); 2) the Nutrition Planning Project (1975-81); and 3) Integrated Rural Health and Family Planning (1976-81). Much of the original program has survived to the current period, although it has suffered reversals and declines before becoming regenerated with an influx of renewed foreign funding that will be discussed in the following case study of Health Sector I (1980-1987).

* Sources for this annex include interviews with Aguilar, Paz, Alvarado, Guzman, Godoy, Corrales, Pinto, Rivera, Estrada, Haddad, Troches, Siegel; in addition to earlier research by Bossert, see source 18.

I. Prior Conditions

In the period before the Rural Penetration Program, the Ministry of Health received a relatively low portion of the national budget, 7.3% in 1972 which rose to a high of 10.4% by 1976. Much of this funding was committed to the hospital sector, which consumed around 63% of the MOH budget (See Annex G). Nevertheless, the Ministry was engaged in some activities in the rural areas, including the mobile units program that was initiated by AID in 1965. The Ministry also had begun the large-scale Maternal Child Health/Family Planning Project, described in Annex C. In addition, with PAHO guidance, the Ministry began major efforts in national planning with the Planes Cuadriales. Malaria programs were beginning to suffer the effects of withdrawal of international funding (see Appendix A). SANAA continued implementing water and sanitation programs, although funding for these programs shifted from AID in 1970 to CARE and later IDB (see Appendix B).

II. Rural Penetration Program

The Rural Penetration Program was established within the context of the reformist government of Lopez Arellano (1972-5) which emphasized moderate reforms targeted largely to the rural population, with considerable emphasis on community participation and cooperative activities. Lopez appointed a well respected physician, Dr. Aguilar Paz, a former dean of the medical school, as Minister of Health and allowed him to appoint his own team of officials to the highest positions in the Ministry. This team which included many members of the Medical School's Division of Preventive Medicine, was dedicated to professionalizing the Ministry by promoting specialists in public health and deemphasizing political appointments. They had also been able to gain control of the Colegio de Medicos, the Honduran medical association, thereby temporarily defusing the potential resistance to their program from more conservative physicians.

With the initial objective of establishing a single health system (Sistema Unico) to unite all government and semi-autonomous health providers (including the Social Security Institute) under the Ministry, the team set out to plan the entire sector. It failed to gain support from the relatively powerful planning agency, CONSUPLANE, for such an ambitious goal (33). The planning option that was adopted involved an ambitious expansion of both the hospital sector and basic primary care services in rural areas. In the hospital sector the plan envisioned the construction of the Hospital Escuela as well as two regional and eight area hospitals (CHE) whose construction and equipment was to be funded through two major loans from IDB (totalling US\$ 17.8 million). These hospitals were seen as part of a complex regionalization plan in which the hospital sector would provide for referrals to different specialization levels and the basic primary care would be provided by a network of health centers with physicians (CESAMO) and rural health posts with auxiliary nurses (CESAR) and three types of community-level volunteers: trained midwives, guardianas, and representantes (126).

The community-level personnel would be organized and trained by a paid health worker, the promotor, who would also be responsible for sanitation and

water programs. A major component of the program was the involvement of the community in the selection of health workers and in some priority setting for health activities. For this aspect of the program, the promotor was to assist the community to organize a health committee and involve the community in its activities.

In addition, administrative reforms were initiated. One of the first decisions of the new team was to unite the two separate directorates (one for hospitals and the other for public health) under one Director General for Health Services. At the same time, the Ministry was decentralized in order to give greater budgetary, personnel, and programming authority to the regional level officials. A new administrative reform unit, UNIDESA, was created to develop and implement new systems of cost control and maintenance.

This program was developed with active participation of PAHO technical assistance. Indeed, PAHO adopted Honduras as a model of its extension of coverage program. Both PAHO officials and Hondurans describe the process of their cooperation as one of mutual learning and priority setting. PAHO planners were particularly active participants in the process, and they used Honduras as a means of developing an alternative to PAHO's overly elaborate planning methodology, the PAHO-CENDES method. PAHO also provided some funding for training and scholarships related to the development of this program. UNICEF provided assistance to train the village-level volunteers. IDB funding, in addition to that for the construction of hospitals, provided for the construction of the CESAMO and CESAR, as well as training for hospital administration and some equipment.

AID's contribution to the Rural Penetration Program was initially influenced by its established commitment to the Family Planning Project (see Annex C). This program had generated some backlash against family planning objectives in the university and the church, as well as among some members of the Aguilar Paz team. Perhaps more important, within the Ministry widespread institutional jealousy had been generated by the privileged vertical program which had considerably greater resources and relative autonomy from the rest of the Ministry. By 1975, the Ministry was able to "integrate" the family planning program into the division of MCH and in so doing radically reduced family planning activities.

While AID apparently attempted to develop a major new loan for the health sector (\$15 million), its initial overtures were ineptly handled and the proposal was rebuffed. The mission proposed that Honduras adopt a plan based on the model of El Salvador. Only three years after the Soccer War, this proposal was an affront to Honduran nationalism. It appears that in the first few years of the Rural Penetration Program, AID funds were nevertheless made available for training of auxiliary nurses in Tegucigalpa and San Pedro Sula and other paraprofessionals in the "Las Crucitas" center in Tegucigalpa. In addition, AID funded the printing plant for the Ministry's publication needs.

These funds for training of auxiliaries were expanded in 1976 with the Integrated Rural Health and Family Planning Project. This project provided

funds for the construction of two new training centers for auxiliary nurses in San Pedro Sula and Choluteca, and the remodeling of the training center in Tegucigalpa. The project expected to train 1120 auxiliary nurses by 1980. (191) It also funded the per diem and scholarships for the training of over 4,000 empirical midwives and guardianas from 1976-1981. While the family planning aspect of this project was relegated to an extremely minor part of the curriculum, the design of the auxiliary nurse training program and the training provided generally received positive evaluations. (89, 193) Indeed, the training of these human resources was one of the more sustained programs AID has supported.

The other major AID program during this period was a nutrition planning loan that was administered through the nutrition unit of the planning ministry: SAPLAN. While the effort to initiate a strong multisectoral nutrition planning program ended in the 1980's with few significant achievements (see Annex D) portions of this project were relatively successful. In particular, this loan provided a major source of funding, along with other foreign donors, for the rural water and sanitation program of the Division of Environmental Sanitation. This funding provided materials (pumps, concrete) for the activities of the "promotores." The program has the reputation of being one of the more successful programs of the period. It generated a significant level of community participation and by 1981 had provided resources for the placement of 21,174 latrines and 2,388 potable water supply systems in rural communities of less than 200 people (177).

By 1978 the Rural Penetration Program had achieved a significant expansion of coverage. The number of health posts (CESAR) increased from 148 in 1973 to 309 by 1978; auxiliary nurses rose from 1,647 in 1973 to 2,275 in 1978, with 275 receiving special training for primary care in rural areas; over 300 promotores were trained to promote water and sanitation programs in small communities; over 1,185 guardianas, 823 representantes, and 1,958 empirical midwives received training from the program (113). Community participation during much of this period was reported to be extremely high. And there may be some indication that these activities influenced the rate of decline in infant mortality that was experienced during this period. The estimates based on three surveys suggest that the general rate of infant mortality decline during this period accelerated and most of the acceleration was due to a faster decline in rural areas where the program was implemented (36).

There were, however, some areas in which the program did not reach expected goals. Despite widespread immunization campaigns, coverage never reached sufficient levels to prevent epidemics of measles and polio from occurring in 1978. Logistic and supply problems developed toward the end of the period and would continue to plague the system and undermine the effectiveness of CESAR and community-level workers. Finally, the hospital construction that was planned during this period would have the potential of becoming a tremendous burden on future MOH budgets (60, 180).

III. Post-Program Conditions

After 1978 the Rural Penetration Program changed character. The original team of public health officials under Minister Aguilar Paz was removed from office with the coup of Policarpo Paz. Unlike the previous coup of Melgar Castro in 1975, which had maintained a commitment to the Ministry's programs and personnel (while changing all other ministries), Policarpo Paz brought in new officials who opposed the dominance of public health specialists and sought slightly different priorities. The new Minister and Vice-minister had been hospital administrators in San Pedro Sula and were closely related to the air force. This new team became involved in the full construction stage of the hospital facilities planned under the Aguilar Paz period. They were also faced with outbreaks of dengue, measles and polio which involved emergency responses. Nevertheless, this new team and its successor in 1980 were able to maintain high levels of growth in the health sector budget and brought significant new resources to the Rural Penetration Program (see Annex G).

During the period which followed Aguilar Paz, the general structure of the Rural Penetration Program was retained and training of health workers at various levels was maintained -- with continued AID funding until 1981. Almost all the programs of the Rural Penetration Program were extended: from 1978 to 1980 over 70 new CESAR were built, 1,929 new wells installed, 26,193 latrines built, and high levels of immunization coverage achieved (103). However, by all accounts, the high levels of community participation and enthusiasm of the early years of the program began to decline (87, 92). Few new initiatives were taken to solve the problems that were emerging in program administration and in logistics and supply. Guardianes began to abandon the program since they were no longer receiving drugs and other supplies (180). Services that were established during the 1973-78 period experienced a decline in effectiveness as the program provided resources for a wider population (197). It appears that the continued extension of the program into new regions was overtaxing the system even though the whole national program was receiving significant budgetary increases.

The one area in which programmed activities appeared to continue to grow and improve was the promotores and their water pump and latrine program. This program continued to receive foreign material support and had developed a fairly efficient supply system. Its personnel were highly motivated and the communities appeared to be strong supporters of their activities.

IV. Sustainability Factors

A. Commitment and Project Negotiation

This program began as a Honduran initiative and received full support from the military governments of Lopez Arellano and his successor Melgar Castro. Hondurans appear to have been quite proud of this program and its national origins. While other donors were instrumental in the development of the Rural Penetration Program, no single donor dominated and all openly recognized the importance of the national initiative.

AID, however, had significantly lost influence in the health sector. The major AID health program during the early 1970's was the family planning program which was not only a politically sensitive issue, drawing anti-imperialist charges in the University and religious attack from the Church, but which also created strong jealousies within the Ministry because it was a vertical and privileged program. AID's association with this program, and its rigid resistance to the Ministry's desire to change the program organization made it difficult for AID to exercise leverage in other health areas. Nevertheless, AID support was welcome if it was willing to adapt to the established national priorities. AID provided funding for three other Honduran-defined priorities: training of auxiliaries and community workers; water and sanitation programs in rural areas; and nutrition planning. It was not until AID's large Health Sector I project implemented in 1982 that AID again began to play a major role in the health sector design, having prepared the path by working closely with Honduran counterparts to develop the priority areas of mutual interest.

National commitment to the Rural Penetration Program, however, was not maintained at the same level as in the Lopez Arellano period. When Policarpo Paz assumed power, the priorities of the government and of the Ministry shifted and the commitment to the program began to decline. The shift was not radical, but over time the effectiveness of the program suffered a gradual decline.

B. Institutional Organization of Projects

The Rural Penetration Program was perhaps the most integrated program implemented by the MOH in its history. It was one of the earliest examples of national, large-scale integrated programs in the world. The Ministry developed a broad planning exercise which involved most levels and divisions in the Ministry. It absorbed the vertical family planning program and began the process of integrating SNEM. A new system of cost control and maintenance was initiated throughout the Ministry. All normative programs were designed to fit within the integrated plan and to be phased from regional programs into full national activities. In addition, since the Ministry had been decentralized to give greater budgetary, personnel and programmatic responsibility to the regions, the integration of activities had to take place at several levels of the Ministry.

This integration avoided the isolation of privileged programs that occurs with vertical programs. It also provided considerable incentives to motivate personnel at all levels and in all divisions within the Ministry, avoiding the gravitation of qualified people to the privileged sectors which often leaves the rest of the Ministry with less well qualified people.

However, the high degree of integration required a level of coordination and logistical support that the Ministry was ill equipped to maintain. These problems became especially exaggerated as the program expanded to ever widening areas in an attempt to serve as large a population as possible. As the system overreached its administrative capacity, the difficulties a maintaining fully integrated activities became greater. Low levels of

managerial skills, poor information systems, and major bottlenecks within the logistics and supply systems all conspired to weaken the effectiveness of the program. The complexity of the system, with so many different types of health workers and a logical but impractical hierarchy of referrals to higher service levels, militated against focusing resources on key bottlenecks and on priority areas. The continued weakness of the immunization programs, the decay of SNEM, the chaos in supply of medicines were all in part due to the complexity of the tasks of a fully integrated structure.

While the program declined in effectiveness with the shift in government commitment and the collapse of integrated coordination, the program outputs were, nevertheless, moderately sustainable. The national government continued to provide salaries of the core health workers in the system: auxiliary nurses and promoters. While supplies to each health post apparently declined, they nevertheless continued to be provided. Indeed, it seems likely that the total amount of medicines and materials may have increased, but not at a sufficient rate to keep up with the growth of the health services. Supervision of the auxiliaries and community workers was also maintained, albeit at a deficient level.

The programs that are quite well sustained after the 1978 change in the Ministry leadership, are ones that received AID support, at least for a transition period of three years. The auxiliary nurse training program, which was at the core of AID's Integrated Rural Health/Family Planning project, was supported until 1981, when it became a fully national program no longer dependent on external support. Some aspects of this program have changed; for instance, the Choluteca school which originally trained a special auxiliary nurse only for rural service, now trains its students to be available for hospital service as well, a change that some observers feel dilutes the primary health care emphasis of the original program. Nevertheless, the auxiliaries are still a backbone of the rural health system and are well trained and generally motivated to promote primary care activities.

The second significant program that AID funded -- the rural water pump and latrine program of the Ministry's Division of Environmental Sanitation (funded with US\$1,670 from the Nutrition Planning Project) -- was also one of the major sustained activities of the Rural Penetration Program. This program funded the activities of the promoters by providing some training and much of the materials necessary for water pumps and latrines. While the salaries of the promoters and their training programs now are funded by national funds, and the systems put in place during the life of the project (1976-81) are relatively maintained by the communities and the promoters, the continued expansion of the program to more communities has relied on a constant flow of external resources from AID, IDB and other donors (139).

C. Financing

As with all other new health initiatives, the Rural Penetration Program depended heavily on foreign sources of funding. PAHO, UNICEF, IDB, and AID

provided over US\$9 million during the first five years of the program. Nevertheless, one study showed that the government of Honduras contributed increasing proportions of its internal health funds to the program (19). Over the period the budgetary priorities of the Ministry shifted significantly from the hospital sector to primary care, and much of this activity was encompassed by the Rural Penetration Program (See Annex G). The government showed its commitment by taking over the salary lines of personnel who had been funded under foreign programs -- with the exception of approximately half the personnel in the family planning program.

It should be noted that some decisions made during this period ran counter to the priority of primary care programs. The decisions to construct the Hospital Escuela and the two regional and eight area hospitals set in motion a process that was difficult to control. These hospitals place an enduring drain on the national health budget and limit the national resources available for the primary care programs of Rural Penetration. The recurrent costs of the new hospitals did not come on line until after 1978, so they did not limit the Ministry's ability to divert increasing amounts of national funding for the Rural Penetration Program, especially as foreign funding also gave priority to primary health care. However, in the periods following 1978, spending in the hospital sector was controlled only with great difficulty. The explanations for the success of the Ministry in retaining the proportion of hospital to primary care spending established during the Aguilar Paz period, were 1) the delay in the construction of some hospitals (to date none of the IDB hospitals are on-line) and 2) the rapid growth in foreign funding for primary care activities. Indeed, the growth in foreign sources of funding for primary care may have allowed the Ministry to allocate greater proportions of internal Honduran funds to the hospital sector. The decisions to expand the hospital system are likely to have limited the national capacity to sustain programs that have been funded from foreign sources.

D. Technical Assistance

Technical assistance played a significant role in the development of the Rural Penetration Program. PAHO advisors were instrumental in the design of the program and in a variety of technical and normative fields. AID technical assistance was important in the design and initial implementation of the training programs for auxiliaries, empirical midwives and guardianes. Technical assistance was also important in the design and construction of the new health facilities -- although in some cases, especially the design of the CHE, this assistance appears to have been of poor quality.

Technical assistance appears to have been mainly short-term specialists who worked fairly well with their Honduran counterparts and were phased out quickly. There was no central coordinated group of long-term consultants, as there is in Health Sector I. Since the program was maintained with little long-term technical assistance, it appears that this form of assistance is consistent with sustainability.

E. Donor Coordination

During the period of the Rural Penetration Program there were a few specific examples of programmed coordination among donors. IDB provided a non-reimbursable loan for administrative development which funded technical assistance from PAHO in this area. However, most donor activity was pursued independently within the framework of the Ministry's established program. PAHO made major contributions to the design of the program through its flexible new planning efforts. It also provided technical assistance in various key areas of the program, as well as fellowships for human resource training. UNICEF, switching from its major commitment to malaria in order to train village-level health workers in western provinces, provided funds and models for training the representantes and guardianes. AID funded the construction of training facilities and developed curriculum for auxiliary nurse training and the training of village-level workers. IDB provided funds for the construction of health facilities, including the CESAR and CESAMO that were part of the Rural Penetration Program. This de facto division of labor among donors appears to have occurred without any coordinating agency and without a particular plan of coordination.

The lack of explicit coordination may have contributed to the failure of the hospital construction program to be developed in a manner consistent with the rest of the Ministry's activities. The ambitious construction program was to plague the Ministry of Health in the period after 1978 when hospitals began to come on line or near completion and when funds for recurrent costs had to be found.

F. Training

The Rural Penetration Program involved extensive training programs for the preparation of new auxiliary nurses, with new orientation toward rural primary care, a new type of paid health worker, the promoter, and three types of village volunteer workers, the guardian, representante, and empirical mid-wife (123). The training programs for the auxiliaries and promoters were well designed and the graduates have been effective in delivering health services when they have appropriate supervision and supplies (89). AID's Integrated Rural Health Project contributed significantly to the training of auxiliaries and provided some assistance to the promoter training. A recent study of auxiliaries suggests that many are still practicing in rural areas for which they were trained.

One aspect of the training program of auxiliary nurses has, however, changed. Originally one of the three schools, Choluteca, was designed to train auxiliaries only for work in rural areas. This choice was made so as to deemphasize the curative orientation found in the training for auxiliary work in hospitals and to encourage more attention to the special needs of rural areas. After several classes of graduates it was found that the Ministry's posts for rural auxiliaries were not sufficient to employ all graduates from the Choluteca school and that many graduates were being placed in hospitals in positions for which they had not received sufficient training. The school

therefore restored hospital training to its curriculum so as to produce multi-purpose auxiliaries. This choice was unfortunate in that there are insufficient rural auxiliaries to provide temporary replacement for the auxiliaries who take leave (usually for a three month maternity leave). When auxiliaries take leave, their health posts are closed. At any one time approximately one quarter of the health posts are closed for this reason.

The training of community-level volunteers, however, was not quite as effective. Training periods were judged by evaluators to be too short to provide sufficient knowledge to the guardianes. The role of the representante was never clearly defined and the type of training received, was also deemed insufficient. These two types of community workers have been the least successfully maintained portion of the Rural Penetration Program. Training of the midwives, however, was more effective, and a recent study suggests that they have been more successfully sustained than the other community volunteers.

Continuing education and short course training also occurred throughout the Ministry. Courses on community organization, health planning, administration, as well as specialized courses on specific health issues, were supported by both national and international funds. AID and PAHO were particularly important donors, but IDB also provided funding for administrative training.

G. Community Participation

One of the hallmarks of the Rural Penetration Program was its emphasis on involvement of the community in health activities. The promoters were trained to motivate and organize communities to form health committees which were to help set community priorities, select individuals to be trained as guardianes and representantes, and provide labor and some materials for health activities in the locality. The guardianes were village volunteers who were trained in short one-week courses and supervised by the auxiliary nurses to provide basic primary care with simple medicines, some follow-up, assistance in immunization campaigns, and health education campaigns. The representantes were leaders in the community who helped maintain the community health committee, organized local work force and materials, and worked closely with the promoters in sanitation and water projects.

In many localities these workers were chosen and trained by active community health committees which also participated in deciding health priorities within the programmed activities of the Ministry. The latitude of decision-making was restricted to selection of personnel for training, location of pumps and latrines, and local labor and material support. While no systematic study was done of the community-level participation, several studies do demonstrate that it was extensive in many communities (20, 87, 92).

Community participation, however, was difficult to maintain. It appears to have depended on a regular supplies and supervision of the community volunteers to provide incentive and means to carry out the expected activities. Even during the 1973-78 period, there is evidence that the early

high levels of participation began to fall off as logistics, supply, and supervision problems accumulated. During the following period, community participation did not receive high-level support and in some instances was discouraged by governments concerned about internal security (20, 87).

Although community collaboration contributed somewhat to program effectiveness, participation itself appears to have required an effective program for its own sustainability.

H. Effectiveness

During the core period of Rural Penetration Program, 1973- 78, when the Aguilar Paz team was implementing the program, it appears to have been a fairly smooth running program which was likely to have provided significant health benefits to an ever-widening population. It developed and implemented a fully integrated rural health delivery system with a wide network of new health posts, specially trained auxiliary nurses and promotores, and major component of community participation, both in terms of community health committee decision-making and in terms of village volunteer activity. The implementation was phased to grow from two prime regions to eventually cover the whole national territory.

However, as the program expanded, even during the core period, some program problems began to develop. Logistics and supply problems became increasingly acute with the rapid addition of new health posts and new communities served by the program. These problems would plague subsequent administrations and would undermine the effectiveness of community level workers and auxiliaries. In addition, immunization programs, especially for polio and measles, had not reached sufficient levels to prevent the outbreaks of epidemics in the years immediately following the replacement of the Aguilar Paz team. Nevertheless, during the core period, the program in general was one of the more effective broad-based health activities implemented in Honduras.

Two AID projects implemented during this period were not only partially responsible for the general effectiveness of the Rural Penetration Program, but also maintained the program's effectiveness for several years after the core period. The auxiliary nurse training program of AID's Integrated Rural Health/Family Planning was particularly effective, and this program was sustained with national funds after the end of AID support. Empirical midwife training also appears to have been quite effective and sustained. The training of guardianas was less effective, since their utility was circumscribed by logistics and supply problems, and lack of clear supervision.

The second important AID contribution to Rural Penetration was the water and sanitation sub-component of the Nutrition Planning Project. This project contributed significant training and materials for the promoters and their wells and latrine projects. These projects appear to have been well received during the first years of the project, and have been maintained in many communities after they were installed, although maintenance has varied considerably.

AID projects which were not particularly effective during the life of the project were the Maternal Child Health/Family Planning Project (including the family planning aspect of the Integrated Rural Health project) and most of the sub-components of the Nutrition Planning Project. Family planning was rejected by the Ministry and nutrition planning was never able to overcome the inherent obstacles of multisectoral programs.

IV. Sustainability

The Rural Penetration Program of the 1973-78 period was relatively well sustained in the subsequent periods, although its effectiveness declined as services were extended and as subsequent governments changed priorities.

Some components of AID projects within this program extended beyond the core period, but also were sustained in subsequent periods. The auxiliary nurse training program was the only major project that was sustained with national funds after AID funding ceased. The water and sanitation projects put in place during the life of the project were also sustained with national funding for the promoters. This program, however, has continued to receive AID funding, as well as other foreign funding, for the provision of new wells and latrines.

Other AID-supported activities have not been so fortunate. Family planning activities have been severely curtailed until the mid 1980's when renewed efforts under Health Sector I have been adopted by the Ministry. Nevertheless, some of the acceptors of the earlier program still seek and receive contraceptives from the Ministry of Health facilities. This is a minor sustained aspect of an ambitious program which failed. With the exception of the water and sanitation sub-component, the rest of the Nutrition Planning Project was not well sustained after the funding ceased.

Finally, the training of guardianes in the Integrated Rural Health project was only modestly sustained. Reports suggest that less than 40% of those trained continue to perform their functions and attend scheduled meetings. Nevertheless, these community volunteers have become a resource that the Ministry has begun to utilize more effectively in the current period of Health Sector I.

ANNEX F

HEALTH SECTOR I *

Since Health Sector I is an on-going project at the time of this writing, it is not possible for us to determine whether or not its components will actually be sustained. Strictly speaking then, this case cannot provide evidence for our systems approach methodology. Nevertheless, based on the conclusions we draw from the previous five cases, where we can judge whether components were sustained, we can attempt to evaluate the sustainability of aspects of Health Sector I.

Health Sector I initiated a new period in Honduran health system. At \$30 million for five years, Health Sector I represents the largest single foreign source of funding in the health sector (227). During the period of its implementation, other foreign donors have also significantly increased their contribution to the health sector (See Annex G). This flood of foreign funding has seriously raised the question of Honduran capacity to absorb the funds. The large amount of funding also raises an unprecedented challenge for sustainability. It is unlikely that Honduran resources could easily or rapidly replace the large amount of foreign funding currently being provided.

While, unless the geopolitical situation in Central America changes significantly, it is likely that Honduras will continue to receive large amounts of foreign funding, there is nevertheless some reason for Hondurans to be concerned that current programs would have to be discontinued or greatly altered should the international donor community, and AID in particular, shift priorities from health or from Honduras and dramatically reduce their support.

In this context, it is important to attempt to identify 1) those aspects of the project that are likely to be sustained at some level of effectiveness even if donor support is terminated, 2) which aspects might be sustained only if other sources of foreign funding are obtained, and 3) which are likely to be terminated once AID funding ceases. These are difficult questions to answer in a prospective fashion. Our analysis, therefore is very tentative and should be taken more as hypotheses for future evaluation, than as clear judgments about the actual sustainability of the project.

I. Prior Conditions: Planning for HSI

After the team of health officials who had designed and implemented the Rural Penetration Program had been removed from office in 1978, AID support for both the training program and the rural water and sanitation programs

* Sources for this Annex include interviews with Paredes, Corrales, Garcia, Magana, Penna, Aquino, Casas, Park, Smith, Siegel, Cross, Holley, McCarthy.

continued. At the same time, some initiatives were made by AID officials to begin the design of a large-scale omnibus health loan. Over the course of two years, an extended planning process, funded by an AID grant, developed the design of Health Sector I (193, 60). The process was one of prolonged interaction and negotiation to identify priority areas and develop mutually acceptable measures to address these priorities. After years of tension and lack of communication between the Ministry and the Mission, a new cooperation and mutual respect developed. Personal relations between key Honduran officials and AID personnel and consultants were particularly good. At the same time, relations between the U.S. government and the military government of Policarpo Paz were moderately good. Under these conditions, AID was able to engage in a genuine policy dialogue in which U.S. interests and objectives for the health sector were developed in mutual negotiation with the Hondurans, assuring that the program would not be seen by Hondurans as an imposed plan -- as were some previous programs.

The planning project identified a large number of areas of particular concern (193). Eighteen sub-components were developed and designed: malaria, rabies control, immunizations, diarrhea control, tuberculosis, sexually transmitted diseases, maternal and child health and family planning, epidemiology training, basic medicine list, logistics system, maintenance, management and planning, mass media for village health workers, teacher training, extension of supervision, continuing education for Ministry employees, and operations research. The core of this project was to be managed by a large technical assistance team, which would provide major support for many of the components, but especially the management and planning program.

II. Implementation

Although the loan was signed in 1980, implementation of the program was delayed until 1982 because of changes in personnel in the ministry, funding cycles, delays in procurement and start-up for contracting technical assistance (which involved Honduran approval for all personnel). However, the delay was also associated with the long process of transition from military governments to democracy that dominated the period 1980-82. Once the newly elected government of Suazo Cordoba assumed power, the ministry was again in a position to address the new initiatives in health. Several individuals who had been intimately involved in the planning stage of Health Sector I, assumed high-level positions in the Ministry and began to work closely with the AID mission and the technical assistance contractor, Management Sciences for Health.

The program was implemented in a unique organizational design, avoiding the extremes of both vertical and integrated designs (46, 235, 55). A large project, with major amounts of technical assistance, the project spread out throughout the Ministry, involving most divisions and eventually reaching down to regional levels as well. No one division of the ministry was particularly privileged by the loan funding. At the same time, each of the sub-components involved quite specific objectives and development, in some cases, of special new organizations and priority attention within existing

structures. The management and planning component, one of the largest in terms of funding, could provide training and technical assistance back-up for management problems identified in each of the other sub-components. The system of support was similar to a matrix of separate projects united by a dominant management and planning component.

While the project was being implemented, two additional centrally funded projects were initiated: mass media and health practices, and mothers' milk and child weaning practices. The mass media project began as a pilot program in one region to design a social marketing approach to mass media messages for diarrhea control (169). The program was initially organized under a new unit within the Ministry which was charged with developing the messages. It received extremely positive evaluations of effectiveness in raising knowledge and changing practices regarding diarrhea. Later the project was integrated into Health Sector I and expanded to the national arena, involving other messages associated with other aspects of Health Sector I, such as breast feeding and family planning. Recent evaluations suggest that the expanded program is quite effective, albeit at a significantly lower level than the pilot project.

The breast feeding and child weaning project was initially developed as a vertical program not integrated into other Health Sector I activities and not well integrated into the Ministry. While the project was effective in reaching its immediate goals, evaluations were quite critical of the vertical nature of the program, the lack of dispersion of knowledge beyond those directly involved in the project, and the developing resentment in other departments (115, 218, 231). After these critical evaluations, efforts were made to integrate the project into other Ministry activities. At the time of this writing it was not possible to evaluate the effectiveness of this integration.

III. Evaluations

Health Sector I has received quite favorable evaluations in the two major evaluations done in 1984 and 1986 (235, 46). Significant advances have been achieved in the malaria control and immunization sub-components where more aggressive programs (ie. whooping cough, polio, tetanus and diphtheria) have exceeded project goals. While logistical problems remain in both programs, major achievements have been obtained through efforts to improve the maintenance of the cold chain. Efforts to improve the management capability and administrative support through training and development of rationalized and simplified systems of maintenance, supply, procurement procedures and information gathering, analysis and dissemination were judged to be generally quite effective. Health education activities were also given high marks. While no direct link could be established between Health Sector I and improvements in infant mortality trends, two recent studies appear to demonstrate a significant decline during the period of the project.

The evaluations, however, were critical of one central aspect of Health Sector I. They found that although the complexity of the project, involving so many sub-components, had given Health Sector I the flexibility to respond

effectively to targets of opportunity and to continue working when obstacles to implementation emerged, this same complexity inhibited the capacity to follow through on some priority sub-components. In particular, the areas of cost recovery, development of storage capacity, creation of basic information systems and supervisory follow-up between levels of service and management. This conclusion suggests that in its attempt to provide a wide matrix of discrete programs, Health Sector I has sacrificed some of the effectiveness that could have been gained by focusing attention on a few specific priorities. We will consider this possibility in relation to the objective of project sustainability in our analysis of the institutional organization factor.

IV. Sustainability Factors

A. Commitment and Project Negotiation

Since 1982 two successive democratic administrations have given consistently high support for Health Sector I. Relations between the Ministry and AID mission and MSH have remained very good. In some aspects these relationships have improved with personnel changes and the incorporation within MSH of key Ministry officials who maintain good access to the Ministry. Current Ministry officials appear to be as committed to the goals of Health Sector I as were the originators. The fact that Health Sector I originated under a military regime and was implemented by two successive civilian regimes suggests that the program reflects enduring commitment of the Honduran governments to project goals. This commitment may be due to the wide net of activities and objectives of the program, and the current international interest in many of the program activities, e.g., diarrhea control, immunizations, and breast feeding. There may be a wider consensus around these programs than there was around the initial family planning program, nutrition planning or even malaria eradication.

We might also note that the level of commitment to reforms in the health sector is not as high during the 1980's as it was during the early period of the Rural Penetration Program. It would be difficult under any circumstances to maintain the high level of enthusiasm of that period; however, without a general governmental commitment to large-scale reform efforts, it is unlikely that any one sector could achieve that level of commitment. Within the context of non-reformist and economically strapped governments, the level of commitment to Health Sector I goals is extremely high.

There is, however, some concern that the U.S. presence and influence is too great. Project negotiation may in fact have been too successful. The large technical assistance team of MSH and the great variety of Ministry activities in which Health Sector I participates raises questions of the degree to which the project is dominating the activities of the Ministry. This concern is expressed even by those who in general support the goals of the program and consistently work closely with MSH. There is also some indication that a more nationalistic response is growing against the large U.S. presence and influence. This response has not yet been widely articulated, but it is a potential consequence of too much success in project negotiation.

B. Institutional Organization of Project

Health Sector I was uniquely designed in a matrix of targeted program priorities united by a dominant management and planning component. This design allowed the program to avoid the weaknesses of highly visible autonomous vertical programs, the perils of which are most apparent in the maternal child health and family planning program of the 1960's and early 1970's. It also appears to avoid the difficulties of highly integrated programs such as those of the Rural Penetration Program. Highly integrated programs have difficulty in focusing resources on priority areas and responding flexibly to bottlenecks in the complex system. The matrix design of Health Sector I allows for institution building around management problems as they arise in the course of implementing the series of programmatic sub-components. Hence, information systems are designed around training problems, special management programs are developed for maintenance problems, cold-chain maintenance is improved to support the immunization campaign, etc.

Without a period of time to evaluate the long-term implications of this matrix design, it is difficult to conclude that this implementing organization is more sustainable than the vertical or integrated approaches of other programs; however, it does appear likely that it will be. By providing support for many different divisions in the Ministry, it avoids the potential for institutional resentment against privileged programs. It also avoids the tendency of vertical programs to attract the most qualified people away from the other programs of the Ministry. On the other hand, while the matrix design provides general institution-building programs through its management and planning component, it has the flexibility to focus efforts on problem areas as they arise and respond to changing priorities. In this manner, it is able to avoid the weaknesses in highly integrated programs.

This conclusion suggests that the evaluations of Health Sector I which criticize its lack of focus as a factor inhibiting effectiveness may be too harsh. Its effectiveness may indeed depend on the wide net of activities and the flexibility it is able to exercise in addressing the multitude of implementation problems that arise. If, however, the evaluations are correct, the same institutional elements which might contribute to sustainability (project complexity and flexibility), might hinder immediate project effectiveness. Our study of previous health projects, especially the experience of malaria and family planning, suggests that a drive for immediate effectiveness which does not also account for institutional development, may ultimately endanger sustainability.

C. Financing

As noted in the introduction, the financial aspects of Health Sector I make it extremely unlikely that the program can be sustainable if all AID funds were to end as scheduled. A recent study of the ability of the Honduran government to fund the implementation and recurrent costs of the activities under Health Sector I concluded that it was highly unlikely that sufficient internal funding would be available for the Honduran government to meet obligations to finance Health Sector I recurrent costs (12). According to

this analysis, the Honduran government has had difficulty contributing its counterpart funding of 2% of the internal health budget and a significant portion of this funding has come from US sources through Economic Support Funds. Recurrent costs of the program would require shifting at least 7.5% to 10% of the internal health budget to program activities.

We are unlikely to be able to test the ability of the Honduran government to absorb the recurrent costs of Health Sector I. Health Sector I has been extended for a follow-on period through 1987 and the mission is now planning a major new project: Health Sector II. It does seem likely that AID funding will continue for at least the next seven years.

Nevertheless, the project has set some conditions that might make it more likely to be sustained. Personnel line items in the health budget have been added according to the agreement and the Honduran government is now pledged to maintaining most of the salaries of positions created by the loan activities. The sustainability of this commitment, however, is undermined by the fact that much of the counterpart spending of the government is covered by Economic Support Funds support from AID.

The project agreement also commits the government to restrict expansion in the hospital sector so as to maintain sufficient national resources for primary care programs. While this agreement has been honored up to the present; indeed, hospital spending has been declining as a percentage of the national budget (see Annex G), two factors could undermine this commitment in the future. The first is the new medical salaries law which has at least doubled the salaries for physicians, whose salaries make up a large part of the hospital budget. The second new element that endangers the internal distribution of resources is the new IDB loan of \$27 million, with \$19 million counterpart funding. This loan, which has been approved by the IDB, will fund the equipping and start-up costs of several of the hospitals that IDB had constructed but not yet completed, including the new 600-bed hospital in San Pedro Sula. These hospitals had been delayed for a variety of reasons, including the decision of the government to freeze hospital spending in 1983 to 1985. With the new loan, it seems unlikely that the Ministry will be able to keep its commitment to primary care with national funds (63, 86). The recurrent costs of the hospitals could increase the proportion of the national budget that goes to the hospital sector, at the expense of the primary care programs. As long as the primary care sector continues to gain international funding, however, the Ministry may not have to face the trade off choice.

D. Technical Assistance

Health Sector I has provided an unusually large amount of technical assistance for an AID-funded project. Almost one third of the total budget is for technical assistance. MSH has established a long-term presence in an office across the street from the Ministry. Both long and short-term consultants are constantly working in the Ministry and often also in the regional offices. This assistance not only provides technical advice but is also instrumental in prodding the Ministry bureaucracy to accomplish goals.

in the project. As such it is an integral part of the implementation process of the programs. This large and moderately assertive group of consultants is able to give unusual levels of coordinated support for its Honduran counterparts.

With few exceptions, the quality of technical assistance has been high and relations between consultants and their Honduran counterparts have been good. It appears that counterparts are learning from the consultants and that good working relations are establishing high levels of mutual respect and cooperation. Since much of what the technical assistance is imparting is management skills, it is likely that Honduran counterparts will be able to utilize their experience even when the technical assistance is withdrawn.

It is clear, however, that not much thought has been given to phasing out the large-scale technical assistance. As long as plans for a second health sector loan of similar magnitude are in the works, it is unlikely that the technical assistance will be reduced in the near future.

The other institution that provides major technical assistance is PAHO. Most of its \$1 million yearly budget goes to pay consultants' salaries. It also provides a coordinated center of support for its technical assistance and, because it is housed within the Ministry, usually has easy access to the highest levels of the Ministry. The crucial difference between PAHO and AID/MSH technical assistance is that PAHO's assistance is designed to be a permanent process of international cooperation, while AID's is tied to single programs and could be terminated when the project ends. In other words, sustainability is not an issue for PAHO, since its presence is permanent, while it is an issue for AID.

It is unclear what the impact of withdrawal of this large group of technical advisors would have on the sustainability of the program. Not only has their expertise in technical areas contributed to the effectiveness of current programs, but their assertiveness, backed by the legal commitment of the loan agreement and by the significant funding that supports their efforts, may be irreplaceable. On the other hand, while the quality and efficiency of the program might decline without technical assistance, the trained counterparts and the management systems that have been put in place are likely to be able to sustain a major portion of the activities, especially since much of the technical assistance is designed to create new simplified administrative systems. The fact that several of the initial Honduran counterparts are now working for MSH and providing technical assistance to their former colleagues is a positive sign, although their high salaries may make it difficult for them to find similar work in Honduras after the project ends.

E. Donor Coordination

In general, there has been only informal coordination of efforts among donors in the health sector. There are a few examples of coordination on specific program sub-components -- for instance, PAHO, UNICEF and MSH worked closely in implementing the local programming project in 1985. Nevertheless,

this type of intense coordination is the exception. Although there are regular meetings for information exchange among donors, there really are no mechanisms for coordination of activities. Since AID and PAHO programmatic activities are defined in similar ways, there is considerable overlap and duplication of efforts. This duplication often causes conflicts over specific objectives and confusion within the Ministry. With such a large amount of foreign funding, now coming from an increasing number of donors, the problem of lack of coordination has alarmed the Ministry. It is now attempting to establish, with PAHO assistance, an office to coordinate and channel donor support so that the Hondurans can establish priorities and rationalize the different donor interests.

It is unclear how this lack of coordination could affect the sustainability of the AID programs. It could be argued that the duplication of donor efforts might in fact contribute to sustainability, especially if the donors do not phase out their support at the same time. Duplication of efforts may simply mean a larger supply of human resources or materials will be available once the assistance of one donor is terminated. However, it seems more likely that coordination of efforts would allow the Ministry to plan phased withdrawal of donors or at least direct assistance from different donors so that they complement activities in long-term plans.

F. Training

The training components of Health Sector I were directed toward continuing education of Ministry employees. Large percentages of health workers received short-courses in aspects of the priority programs: diarrhea control, respiratory infections, malaria, tuberculosis, immunization and family planning. In addition, special training courses in management systems were held throughout the Ministry. These courses were designed in relation to specific priority areas where administrative bottlenecks have occurred. The training programs have been organized in such a way as to develop permanent corps of experienced trainers at the central, regional and local levels.

One major concern has been raised about Health Sector I training and the training programs of other donors. There appears to be a current overloading of training activities, to the detriment of on-going administrative necessities. So many employees are taking advantage of training programs -- and their per diems, which often means additional income -- that they are often taken away from their assigned duties. This problem is exaggerated by the "ganging up" phenomenon of several donors (especially PAHO and AID) running simultaneous training and education activities.

Nevertheless, the training programs appear well designed to sustain Health Sector I activities in the future. Even if the training programs themselves were to lose continued funding support, the individuals trained and the corps of experienced trainers are likely to continue functioning.

G. Community Participation

There was very little concern with the development of community participation in the initial plans for Health Sector I. The logic of the program was to develop the Ministry's capabilities from the center outward toward the regions and areas and to reach the community directly primarily through mass media programs. The argument of this approach was that community participation depended heavily on the provision of medicines and on a well developed system of supervision. Since the ministry was ill-equipped to provide constant supplies and supervision, it was deemed necessary to develop these systems before restoring efforts to involve the community in active participation and decision making. This decision would allow the deterioration of the high levels of participation of the Rural Penetration Program to continue throughout the period up to 1985.

In 1985, the widespread efforts in local programming have begun to reinvigorate community participation in some regions at least (122, 107, 114). However, there is no clear evidence of the extent of this community participation, at the present time. It is likely that we must again conclude that it is community participation that needs to be sustained and that it does little in the Honduran context to sustain the program.

H. Effectiveness

As noted above, evaluations of Health Sector I have been generally positive, suggesting that the project has been quite effective in many of its sub-components. It has been criticized for not having the kind of focus that might have increased its effectiveness; however, the evidence for this conclusion is open to other interpretations. It is just as possible to view the complexity and flexibility of Health Sector I as a major contributor to its demonstrated level of effectiveness.

Two programs that were originally started as child survival initiatives and organized as separate vertical programs -- Mass Media for Health Practices Project and Breast Feeding and Child Weaning Project -- have both also been judged as quite effective in their initial phases (169, 231). Both also have made significant efforts to become programs fully integrated into the Ministry's existing organizational structure. While this integration has resulted in some dilution of their initial effectiveness, it nevertheless has allowed a significant expansion of the programs with indications of continuing effectiveness.

V. Sustainability

It is important to reiterate that our conclusions about the sustainability of Health Sector I are extremely tentative. We have drawn lessons from the experience of the projects which have terminated to make suggestions about the ability of Health Sector I activities and benefits to continue should AID funding cease in the future.

We feel that it is extremely unlikely that the Honduran government could absorb the funding levels necessary to continue many of the project activities. Not only has it been difficult for the national government to provide counterpart funding for the current implementation phase, but the government itself is becoming increasingly dependent on foreign funding for all of its programs. In the health sector, the anticipated expansion of the hospital sector -- previously restrained -- is likely to further limit the government's ability to take on additional responsibility for primary care programs now funded by many foreign donors. The lesson of malaria programs in the early 1970's suggests the risks of this donor "ganging up" are quite great. It is likely that Health Sector I activities will require continued foreign funding and AID should consider either a commitment to long-term support (similar in duration to that of SCISP) or beginning a cooperative effort with the Honduran government and other donors to sequence donor support for the long-term future. With the prospect of Health Sector II, it appears that AID will have the opportunity to plan for long-term support if it begins to consider the implications of this study.

On the other hand, Health Sector I has also been designed in ways that are likely to produce some enduring benefits, even if donor funding were to cease. The matrix organization is likely to avoid the pitfalls of privileged vertical programs and of highly integrated programs. Technical assistance that has emphasized development of skilled counterparts and simplified administrative systems has been of sufficient long term effectiveness to have created a basis of sustainability, even if it has run the risk of being such a large presence, that dependence and resentment could develop.

Health Sector I was developed with a genuine policy dialogue in which the multiple goals and objectives were mutually defined over a long period. The Honduran government has maintained a high level of commitment through three changes in government. It is likely that this commitment will be maintained in the future.

ANNEX G

FINANCING

a. Introduction

This annex discusses the financial aspects of sustainability in the context of economic and financial trends. The annex first briefly discusses the economy of Honduras; then the levels of expenditure of the Ministry of Public Health and the dependence on external financing are examined. The annex concludes with a discussion of the relation of financial characteristics of projects and external financial issues to sustainability.

b. Economic Trends

Honduras, one of the poorest countries in the Western hemisphere, experienced generally positive economic growth between 1950 and 1979, but stagnated from 1979 to 1985. Gross Domestic Product and population data are presented in Tables 1 to 3. In 1985 per capita GDP was 565 lempiras (U.S.\$ 282.50), which was only 31.4% above the level in 1950.

The generally positive growth between 1950 and 1980 was interrupted by the Banana Strike of 1954 (real GDP per capita fell 8.8%) and the 1969 War with El Salvador (real GDP per capita fell 2.9%). Honduras benefited from participation in the Central American Common Market from the early 1960's to 1969. Growth during the 1960's and 1970's was favorably affected by increases in banana exports, expansion in coffee exports, and the growth of manufacturing under high protective tariff barriers. In 1979 real GDP per capita peaked at 623 lempiras.

Beginning in 1980 real GDP per capita declined every year through 1984 and leveled off in 1985. The Honduran economy was adversely affected by the world recession, deteriorating domestic terms of trade, the adverse political climate in Central America, and a halving of private investment. The public sector incurred deficits, which were financed by domestic borrowing and large transfers from the United States.

The Ministry of Public Health has been the implementing agency for most of the United States Government-supported projects examined in the present study. The malaria program was originally operated by SCISCP but later it was transferred a semi-autonomous organization under the Ministry (SNEM). Similarly, the rural water programs also were supported by SCISP but then became the responsibility of SANAA, which is a semi-autonomous organization affiliated with the Ministry. The other projects of the present study were directly controlled by the Ministry. Trends in Ministry expenditures are the context in which individual projects are funded.

Central government expenditures for public health are presented in Tables 5 and 6. In constant prices expenditures varied between 16.2 and 17.4 million lempiras between 1970 and 1973. Between 1974 and 1979 expenditures varied but at a higher range--between 23.5 and 32.2 million lempiras, reflecting the impacts of the programs initiated by Minister of Public Health Aguilar Paz. In 1980 expenditures jumped to 38.5 million; in constant lempiras expenditures were at a new plateau between 1980 and 1985, varying between 37.5 and 40.9 million lempiras. In current lempiras public health expenditures increased every year between 1980 and 1985, reaching 127.3 million lempiras in 1985, expenditures which in part reflected the large inflows of Health Sector I funds.

In constant prices per capita, public health expenditures peaked at 11.60 in 1980, falling to 10.69 in 1985. But these levels in the early 1980's represented a significant increase above the levels for most of the 1970's. This improvement occurred in the face of a generally declining trend in the share of the central government's expenditures devoted to public health. There was considerable variation in this share between 1970 and 1985. It is notable that the share of public health was below 7% for 1983 to 1985, whereas it had been above 7% for the preceding 12 years. These trends reflect the tendency of central government expenditure growth to outstrip that of the economy.

c. External Financing

In the early 1980's Honduras' external position deteriorated in a number of ways, including increased dependence on foreign debt to finance public health expenditures. Export revenues suffered due to weak international demand and production setbacks for some crops. Balance of payments deficits and the continued pegging of the lempira to the U.S. dollar led to a decline in international reserves of U.S.\$ 244 million between 1980 and 1984, in spite of growing U.S. concessionary aid. The central government became increasingly dependent on foreign funds to finance its budgets. By 1984, 28.8% of the its budget was externally financed (Table 4).

Public health in Honduras has received foreign financing since the early 1940's but the amount of that assistance increased greatly in the early 1980's. Data for assistance from the Pan American Health Organization (PAHO) and the Interamerican Development Bank (IDB) are presented in Table 7 for 1960 through 1985. The values for PAHO include allocations of PAHO's central administrative cost to Honduras; thus the values overstate direct expenditures in Honduras. PAHO data for 1984 and 1985 were not available.

PAHO provided help over the years in a number of public health areas, including the eradication of malaria, maternal and child health and family planning, epidemiology and laboratory services, program planning and general activities, equipment for local health centers and rural health training, medical care services, and basic training for health auxiliaries. In general PAHO assistance rose fairly steadily over the period; beginning in 1978 annual assistance exceeded U.S. \$ 1 million.

For IDB the values in Table 7 are the full amounts approved in the year approved, which is reflected in the large annual variations in the reported amounts. Actual disbursements occurred in the approval and in subsequent years. IDB devoted U.S.\$ 46.8 million or 70 percent of the total of U.S. \$66.7 million of its financing to water and sanitation projects. Tegucigalpa received U.S.\$ 7.8 million and San Pedro Sula 1.9 over the 25 years. Most (U.S.\$ 37.2 million) of the water and sanitation funds were directed to smaller cities and rural communities through SANAA, the National Autonomous Authority Water Supply and Sanitation. Through a large 3-stage project IDB financed SANAA's construction of water systems; U.S.\$ 4.0 million approved in 1974, 7.3 in 1979, and 24.0 in 1985 for a total of 35.3.

Other health projects financed by IDB include U.S.\$ 4.8 million for a hospital-medical school in Tegucigalpa in 1971 and U.S. \$ 13 million in 1975 to help the Ministry of Public Health construct and equip 243 rural health centers, 8 emergency hospital centers, and 2 regional hospitals.

USAID's assistance to Honduras for public health activities increased significantly in the early 1980's. Disbursements of USAID funds for health projects in Honduras are given in Table 8 from 1967 to 1985 (U.S. Government fiscal years). The table does not include the U.S.\$ 1,050,000 of funds lent to SANAA in the 1960's for the construction of rural water systems. From low levels in the late 1960's, disbursements of USAID funds varied around half a million dollars per year in the 1970's, with the exception of 1977 when disbursements were only U.S.\$ 123,000. Between 1981 and 1985, on the other hand, expenditures were much larger, varying between U.S. \$3.4 million and 7.8 million.

Two current projects, the disbursements for which began in 1981, largely account for this huge increase in USAID's financing of public health in Honduras. Health Sector I, budgeted for U.S.\$ 23.6 million draws the funding by USAID for similar activities in the 1960's and 1970's. By the end of U.S. Government fiscal year 1985 a total of U.S.\$ 19.4 million had been disbursed for Health Sector I.

Similarly, the Rural Water Supply and Sanitation Systems budgeted for U.S.\$ 14.8 million provides funding far greater than support provided for such activities in the 1940's and 1950's through SCISP (Servicio Interamericano de Salud Publica) or in the 1960's through USAID's Rural Water Supplies project. As shown in Table 8, by the end of U.S. Government fiscal year 1985 U.S.\$ 12.2 million had been disbursed.

It should also be noted that USAID's direct assistance to public health in the 1980's does not represent all of USAID's financial support provided to public health. Beginning in 1983, USAID also allowed Economic Support Fund (ESF) monies to be used by the Government of Honduras to fund the Government's counterpart obligations for the Health Sector I and Rural Water Supply and Sanitation Systems projects. As shown in Table 10, 21.1 million lempiras were provided through ESF for 1983 through 1986. Another 4.5 million lempiras has been requested for 1987, which would bring the total to 25.6 million lempira.

The 21.1 million lempiras from ESF disbursed for public health projects between 1983 and 1986 represents only 3.5% of the 597 million lempiras disbursed. Of this larger amount, half was allocated to the public sector, and half to the private sector. Public health accounted for 7.1% of the public sector's share.

The ESF figures illustrate the central government's general dependence on U.S. financing. In the case of public health, Honduras is dependent on large direct assistance and on sizeable indirect assistance through ESF counterpart financing. Thus, if U.S. were to stop funding public health, Honduras, in order to continue to same level of public health spending, would have to replace both the direct dollar assistance for certain project activities and the lempiras that help fund Ministry of Public Health and SANAA budgets.

d. Sustainability

The following section of observations concerning the financial aspects of sustainability is in two sub-sections. The first presents observations emerging from the analysis of the relation between project financial characteristics and the continuation of outputs and outcomes. The second sub-section makes observations that relate to larger issues, which are external to the project as such. The two sub-sections correspond to the methodology discussed in Annex H.

1. Project Characteristics

Financial characteristics of seven USAID-supported projects are presented in Table 10. The seven projects are grouped in three categories: sustained outputs and outcomes; outputs and outcomes not sustained; and current project. The placement of six of the projects in the first two categories is based on the extent to which outputs and outcomes were sustained; the reader is referred to the pertinent case studies. It should be noted that not all of the outputs and outcomes of all the projects in the 'sustained' group were fully continued; similarly some project outputs and outcomes were continued in the 'not sustained' group. But that each of the projects in the 'sustained' group had outputs and outcomes which continued significantly more than any of those in the 'not sustained' group.

As shown in Table 10, three of the six projects were in the 'sustained' group: rural water supplies; the water and latrines component of the Ministry of Public Health's Rural Penetration Program, which was funded through USAID's nutrition project; and the training of auxiliary nurses component of the Integrated Rural Health project. These three projects were sustained both in the continuation of benefits from the direct activities of the project period and in the post-project replication of project activities. For example, the 62 water systems built in the 1960's by and large continued to operate, and SANAA built other systems after the end of the USAID-supported project of the 1960's. Similarly, trained auxiliary nurses continued to work and the training school (which had been funded by the project) continued to train nurses.

Defined in terms of both continued direct benefits and replication, only the auxiliary nurses program was sustained without continued foreign funds. The 62 SANAA water projects which had been constructed with USAID financing were administered, operated, and maintained with Honduran funds (user fees and national funds, but the post-project construction of new systems depended heavily on funds from CARE, IDB, and (beginning again in 1981) USAID. Similarly, the water and latrines component of the Rural Penetration Program was sustained in terms of replication in part with funding from the current USAID Health Sector I project. An important observation in the present study is that replication of the activities of USAID-supported health projects have been heavily dependent on continued foreign financing.

Thus, using both continuation of direct benefits and replication of direct outputs as the criteria, only one of the three sustained projects was sustained with national funds. Had foreign funding not been available for the SANAA's construction program and the Ministry's water and latrine program, it is likely that they would have been funded with Honduran funds at lower levels of expenditures. It is not known how much lower the funding would have been.

Table 10 presents six columns of information describing financial characteristics of the projects; the last column describes selected post-project characteristics. The first four columns of financial characteristics relate to the funding of the project--the Honduran and USAID funding shares, the mix of assistance provided by USAID, and funding from other foreign donors and lenders. Contrary to what might have been expected, there was little correlation between these characteristics and the continuation of outputs and outcomes.

It could be hypothesized, for example, that projects with a low share of USAID funding and a high Honduran share would be more likely to be sustained. Such was not the case. Within the sustained group, auxiliary nurses received less than half its funding from Honduran sources; rural water systems had only 25 % of its capital costs funded by Honduras. Within the not sustained group, there was a wide variation in the Honduran contribution. Similarly, the extent of foreign assistance from donors and lenders other than USAID does not correlate with the continuation of project outputs and outcomes. Thus there does not appear to be a direct relationship between the continuation of project outputs and outcomes and the share of project funding which is from Honduras, from USAID, or from other foreign sources.

It could be hypothesized that there may be a mix in USAID's assistance between human resources (training) and material support that favors sustainability. The information in Table 10 shows that the mix varies within those projects which were sustained and within those which were not. Thus there is not evidence from the present study to support such a hypothesis.

Although the willingness of the Ministry to absorb salaries of project personnel is often seen as important for sustainability, the projects examined in the present study do not suggest that such willingness is a guarantee of

sustainability. Malaria workers, for example, were absorbed by the Ministry but project outputs were cut sharply; half of the family planning personnel were absorbed, but few were able to deliver family planning services.

The cost recovery data in Table 10 do not support the hypothesis that projects with more cost recovery tend to be sustained. The degree of cost recovery varies within both the group of sustained and of not sustained projects. The user fees paid for the administration, operation, and maintenance of the SANAA water systems of the 1960's did contribute to their continued provision of water over the years; but such cost recovery may not have contributed to the construction of other water systems subsequently. For individual water projects, cost recovery does not predict sustainability.

One hypothesis that is supported, to some extent, is that projects that are more cost effective tend to be sustained. In Table 10 the heading of the pertinent column of data is 'Effectiveness of Project,' reflecting the fact that cost analyses, in the strict sense, were not carried out. Available reports did not include cost effectiveness analyses and data were not available to permit such analyses to be carried out in the present study. Rather, the column of information reports a general judgment about how well project resources were used. In other words, if the project generally achieved its designed outcomes and outputs and, moreover, did not apparently significantly waste resources, it was categorized as 'good.'

It is striking that three of the four projects judged 'good' in terms of effectiveness were sustained. This result may reflect the notion, which appeals to common sense, that a success is more likely to be continued; a failure to be discontinued. Successful projects may be candidates for continued funding from Honduran and from international sources.

2. External Issues

There are four external (that is, external to the projects) issues that are especially important to examine for their relationship with the sustainability of health projects in Honduras: funds available to the Ministry of Public Health; the competition between hospital and non-hospital uses of Ministry funds; external financing; and cost recovery from beneficiaries. The following paragraphs address each of these issues.

a. Funds Available to the Ministry of Public Health

A project may have characteristics that would favor its continuation after the end of United States assistance. But adverse external factors may impede continuation with local funding; or positive external factors may encourage such continuation. Crucial here are the funds available to the Ministry of Public Health.

Trends in Ministry of Public Health funds were discussed above referring to data in Tables 5 and 6, data which begin with 1970. Operating expense data for the Ministry for 1968 to 1985 are presented in Tables 11 and 12. There are differences between the total expenditures reported in Tables 5 and 11.

The differences partially reflect the fact that the public health expenditures in Table 5 include capital as well as operating expenses. Because the data on central government and Ministry expenditures in Table 4 were taken from one table (from CONSUPLANE), they are particularly useful for comparisons between the Ministry and the central government as a whole. The operating expense data in Table 11, on the other hand, were prepared from line item Ministry of Public Health expenditures made available by the Ministry of Finance. The line items for capital transfers to national organizations (SANAA) and the construction of health facilities were deleted to attain the operating expenses shown in Table 11. The line item for hospital-medical service permitted the breakdown between hospital and non-hospital expenses given in Table 11.

A general lack of Ministry of Public Health funds is not a major contributing factor to USAID-supported projects not continuing. Obviously, if enough funds had been spent for these projects, they could have been sustained. It should be noted that there were not cutbacks in overall Ministry expenditures in the years after USAID funding stopped that could be cited as a major cause of projects not being sustained. For example, the early 1970's, which followed the end of U.S. assistance to malaria in 1969, were years of growth in Ministry expenditures (Tables 5, 6, and 11). The same is true for the years following the end of the USAID maternal and child health project in 1976. Although there may not have been sufficient increases in the Ministry budgets to replace fully the amount previously funded by USAID, nevertheless budgets were generally increasing and, if the commitment had been present, funds could have been found to sustain, to a greater extent than that realized, the previous levels of project outputs and outcomes.

b. Hospital and Non-Hospital Competition for Funds

The health projects examined in the present study are for primary health care, not hospital activities. (The rural water supplies project may be regarded as primary health care or as a non-health project, but not a hospital activity). It could be hypothesized that some projects were not sustained because of a failure of primary health care activities to compete for funds within the Ministry budget. Such was not the case.

As noted above, the hospital operating expenses in Table 11 are from a line item of data for such expenditures; non-hospital operating expenses is the difference between total operating expenses and hospital expenses. Thus non-hospital expenses includes administrative expenses of the Ministry as well as the costs of operating a variety of primary health care programs. Data were not available to permit an allocation of administrative expense to hospital and non-hospital expenses. Thus the hospital operating expenses may be understated by excluding its share of central administrative costs; but this understatement is probably quite consistent over time. Thus the hospital operating expenses share in total operating expenses over time probably closely represents the trend in all direct and indirect hospital related operating expenses. Similarly, the trend in non-hospital operating expenses is a good proxy for the trend in primary health care operating costs.

At the bottom of Table 12 are compound annual growth rates of the total, hospital, and non-hospital operating expenses for four selected time periods. Only in the first period, 1968-1972, did hospital operating expenses outstrip those for non-hospital. In the era of Minister Aguilar Paz (1972-1978), the subsequent military government (approximately 1978-1981), and the following elected government (approximately 1981-1985), primary health care expenditures grew faster than hospital operating costs.

Between 1968 and 1972 hospital costs as a percentage of total operating costs rose from 53.8% to 61.5%. By 1978, at the end of the era of Minister Aguilar Paz, they had fallen to 56.5%. This decline continued, reaching 54.7% in 1981 and 51.1% in 1985. The continuation of the decline is especially noteworthy in that the Hospital School (Hospital Escuela) in Tegucigalpa began operating in 1980.

With respect to the four projects identified in Table 10 as not sustained, only for the malaria program is this competition for funds argument supported. USAID's funding ceased in 1969. In 1970 non-hospital operating costs fell 12.7%; in 1971 they only partially rebounded by rising 7.0% (Table 11). In 1972 and 1973 primary health care costs grew faster than hospital costs. But for the other three non-sustained projects, for which USAID funding ended in the 1970's and 1980's, this explanation does not hold. Their outputs and outcomes were not sustained although funding of primary health care projects was growing faster than hospital expenditures.

For the future there may be increased competition for primary health care from hospitals. The doubling of physicians' salaries in 1986 will affect hospital operating costs relatively more than those of primary health care programs. In 1987 and 1988 three hospitals are expected to come on line. Over the next five years the Ministry of Public Health has a commitment to the IDB to incur U.S.\$ 19 million (38 million lempiras) of costs for these three hospitals, mostly in operating expenses.

In conclusion, the failure to sustain projects after the end of USAID funding is not attributable to unsuccessful competition against hospitals for funding. On the contrary, for the years when most of the non-sustained projects failed to have Honduran funds replace USAID funds, primary health care operations expense funding was growing faster than that of hospitals. It should be noted here, however, that the absence of such competition for some past years may well be due to external financing being heavily oriented toward primary health care, as discussed in the following section. In the future, primary health care projects may face increased competition from hospitals for operating funds as the construction of more hospitals is completed.

c. External Financing

Previous discussion has made clear the dependence of Honduras on external financing both in general and for health project funding. This dependence augurs ill for the capacity of Honduras to continue health projects should the currently large foreign assistance cease.

For the sustained projects (Table 10), foreign financing played an important role in the replication of project benefits. CARE and the IDB funded the construction of rural water systems in the 1970's after the initial USAID project ended. The large funding of Health Sector I helped the Ministry of Public Health continue the water and latrine components of its Rural Penetration Program. With the end of USAID assistance in 1969 and with replacement funds unavailable from international sources, the malaria program was cutback severely in the early 1970's.

External financing may have had a differential impact on the funding of hospital and of primary health care. Unfortunately, the available data did not permit this possibility to be investigated rigorously. It is likely, however, that in the early 1980's funds from international organizations--such as the large Health Sector I disbursements--have reduced the need for Honduran funds to be spent for primary health care. A consequence would be that more Honduran funds could be directed to hospital care. In other words, without the external funds directed to primary health care it is likely that primary health care projects would have faced strong competition for operating funds from hospitals.

In conclusion, the availability or unavailability of foreign funds has been a very important factor in whether USAID projects are sustained. When available, these funds have enabled projects to continue; and vice-versa. At present the Ministry of Public Health is very dependent on foreign funding, especially from USAID. USAID funding is currently being provided at a very high level, a level reflecting the current political priority of Honduras. Should United States priorities change and funding be reduced, it is very doubtful that Honduras would be able to maintain its current level of public health expenditures.

d. Cost Recovery from Beneficiaries

The previous discussion of cost recovery of the projects indicated that cost recovery has not been a significant factor in the continuation or non-continuation of USAID-supported primary health care projects (Table 10). The notable exception is the rural water supplies project for which user fees contributed significantly to their post-project administration, operation, and maintenance. With the encouragement of USAID, the Ministry of Public Health in the 1980's has taken steps to increase revenues collected from hospital patients and further progress in this regard is anticipated.

The limited current recovery of costs from the beneficiaries of public health programs does not mean, however, that cost recovery is not potentially an important positive factor for sustainability. For selected services, water and sewerage being outstanding examples, there is the potential for much more cost recovery. Significant additional revenues from beneficiaries would reduce pressures on central government funds and strengthen the Ministry of Public Health's ability to continue programs after the end of USAID assistance.

Table 1

REPUBLIC OF HONDURAS GROSS DOMESTIC PRODUCT

1950 TO 1985

YEAR	GROSS DOMESTIC PRODUCT IN MILLIONS OF LEMPIRAS		GDP IMPLICIT PRICE DEFLATOR 1966 = 100
	current prices	constant prices	
1950	458	589	77.8
1951	487	615	79.2
1952	506	628	80.6
1953	549	666	82.4
1954	520	625	83.2
1955	557	662	84.1
1956	583	691	84.4
1957	605	721	83.9
1958	644	761	84.6
1959	667	778	85.7
1960	680	797	85.3
1961	718	819	87.7
1962	781	861	90.7
1963	820	889	92.2
1964	914	942	97.0
1965	1,017	1,039	97.9
1966	1,100	1,100	100.0
1967	1,196	1,151	103.9
1968	1,299	1,235	105.2
1969	1,348	1,239	108.8
1970	1,446	1,297	111.5
1971	1,551	1,367	113.5
1972	1,683	1,422	118.4
1973	1,895	1,502	126.2
1974	2,114	1,500	140.9
1975	2,241	1,455	154.0
1976	2,626	1,572	167.0
1977	3,321	1,752	189.0
1978	3,814	1,882	202.7
1979	4,387	2,010	218.3
1980	4,976	2,065	241.0
1981	5,293	2,089	253.4
1982	5,582	2,052	272.0
1983	5,891	2,042	288.5
1984	6,297	2,099	300.0
1985	6,719	2,160	311.1

Table 2

REPUBLIC OF HONDURAS
POPULATION AND GROSS DOMESTIC PRODUCT PER CAPITA

1950 TO 1985

YEAR	POPULATION IN THOUSANDS	GDP IN CURRENT LEMPIRAS PER CAPITA	GDP IN CONSTANT LEMPIRAS PER CAPITA
1950	1,369	335	430
1951	1,409	346	436
1952	1,451	349	433
1953	1,493	368	446
1954	1,538	338	407
1955	1,583	352	418
1956	1,630	358	424
1957	1,678	361	430
1958	1,727	373	441
1959	1,778	375	438
1960	1,831	371	435
1961	1,885	381	435
1962	1,948	401	442
1963	2,013	407	442
1964	2,080	439	453
1965	2,150	473	483
1966	2,222	495	495
1967	2,297	521	501
1968	2,373	547	520
1969	2,453	550	505
1970	2,535	570	512
1971	2,604	596	525
1972	2,675	629	532
1973	2,747	690	547
1974	2,820	750	532
1975	2,896	774	502
1976	2,975	883	528
1977	3,057	1,086	573
1978	3,141	1,214	599
1979	3,228	1,359	623
1980	3,318	1,500	622
1981	3,413	1,551	612
1982	3,511	1,590	584
1983	3,612	1,631	565
1984	3,717	1,694	565
1985	3,826	1,756	565

Note:

Population figures from 1970 through 1985 are from Cuentas Nacionales, Central Bank. Figures for 1950 and 1961 are from the census (cited in Diagnostico de los Recursos Humanos, 1961-74, Secretaria Tecnica del Consejo Superior de Planificacion Economica, Unidad de Planificacion de Recursos Humanos, July 1976, p. 33). Population figures for 1951 through 1960 and for 1962 are interpolations.

Table 3

REPUBLIC OF HONDURAS
ANNUAL GROWTH RATES, GROSS DOMESTIC PRODUCT PER CAPITA

1950 TO 1985

YEAR	ANNUAL GROWTH RATES					
	GDP current prices	GDP constant prices	GDP implicit price deflator	Population	GDP in current prices per capita	GDP in constant prices per capita
1950						
1951	6.3%	4.4%	1.8%	3.0%	3.3%	1.4%
1952	3.9%	2.1%	1.8%	3.0%	0.9%	-0.8%
1953	8.5%	6.1%	2.3%	3.0%	5.4%	3.0%
1954	-5.3%	-6.2%	0.9%	3.0%	-8.0%	-8.8%
1955	7.1%	5.9%	1.1%	3.0%	4.0%	2.9%
1956	4.7%	4.4%	0.3%	3.0%	1.7%	1.4%
1957	3.8%	4.3%	-0.5%	3.0%	0.8%	1.3%
1958	6.4%	5.5%	0.9%	3.0%	3.4%	2.5%
1959	3.6%	2.2%	1.3%	3.0%	0.6%	-0.7%
1960	1.9%	2.4%	-0.5%	3.0%	-1.0%	-0.5%
1961	5.6%	2.8%	2.8%	3.0%	2.6%	-0.2%
1962	8.8%	5.1%	3.5%	3.3%	5.3%	1.7%
1963	5.0%	3.3%	1.7%	3.3%	1.6%	-0.1%
1964	11.5%	6.0%	5.2%	3.3%	7.9%	2.5%
1965	11.3%	10.3%	0.9%	3.3%	7.7%	6.7%
1966	8.2%	5.9%	2.2%	3.3%	4.7%	2.4%
1967	8.7%	4.6%	3.9%	3.3%	5.2%	1.2%
1968	8.6%	7.3%	1.2%	3.3%	5.1%	3.8%
1969	3.8%	0.3%	3.4%	3.3%	0.4%	-2.9%
1970	7.3%	4.7%	2.5%	3.3%	3.8%	1.3%
1971	7.3%	5.4%	1.8%	2.7%	4.4%	2.6%
1972	8.5%	4.0%	4.3%	2.7%	5.6%	1.3%
1973	12.6%	5.6%	6.6%	2.7%	9.6%	2.9%
1974	11.6%	-0.1%	11.7%	2.7%	8.7%	-2.7%
1975	6.0%	-3.0%	9.3%	2.7%	3.2%	-5.5%
1976	17.2%	8.0%	8.5%	2.7%	14.1%	5.2%
1977	26.5%	11.5%	13.5%	2.8%	23.1%	8.5%
1978	14.8%	7.4%	6.9%	2.7%	11.8%	4.5%
1979	15.0%	6.8%	7.7%	2.8%	11.9%	3.9%
1980	13.4%	2.7%	10.4%	2.8%	10.3%	-0.1%
1981	6.4%	1.2%	5.1%	2.9%	3.4%	-1.7%
1982	5.5%	-1.8%	7.4%	2.9%	2.5%	-4.5%
1983	5.5%	-0.5%	6.1%	2.9%	2.6%	-3.3%
1984	6.9%	2.8%	4.0%	2.9%	3.9%	-0.1%
1985	6.7%	2.9%	3.7%	2.9%	3.7%	-0.0%

Table 4

REPUBLIC OF HONDURAS
CENTRAL GOVERNMENT EXPENDITURES

1970 TO 1985

YEAR	CENTRAL GOVERNMENT EXPENDITURES IN CURRENT PRICES	EXTERNAL FINANCING	
		AMOUNTS IN THOUSANDS OF LEMPIRAS	PERCENTAGE OF CENTRAL GOVERNMENT
1970	230,189	31,335	13.6%
1971	249,895	34,063	13.6%
1972	263,991	43,327	16.4%
1973	266,796	24,265	9.1%
1974	315,572	40,189	12.7%
1975	395,348	56,194	14.2%
1976	483,303	77,199	16.0%
1977	585,506	68,613	11.7%
1978	769,915	128,122	16.6%
1979	868,282	122,618	14.1%
1980	1,022,963	85,771	8.4%
1981	1,010,581	58,739	5.8%
1982	1,329,112	250,403	18.8%
1983	1,583,445	359,132	22.7%
1984	1,941,411	558,198	28.8%
1985	2,101,653		

Table 5

**REPUBLIC OF HONDURAS
MINISTRY OF PUBLIC HEALTH EXPENDITURES**

1970 TO 1985

YEAR	PUBLIC HEALTH EXPENDITURES				
	as Percentage of Central Government Expenditures	in current prices in thousands of lempiras	in current prices per capita	in 1966 prices in thousands of lempiras	in 1966 prices per capita
1970	7.9%	18,111	7.14	16,245	6.41
1971	7.4%	18,453	7.09	16,264	6.35
1972	7.3%	19,245	7.19	16,260	6.08
1973	8.2%	21,912	7.98	17,368	6.32
1974	10.5%	33,185	11.77	23,547	8.35
1975	8.3%	32,793	11.32	21,291	7.35
1976	10.4%	50,037	16.82	29,954	10.07
1977	8.5%	49,576	16.22	26,154	8.56
1978	8.5%	65,110	20.73	32,128	10.23
1979	8.0%	69,592	21.56	31,885	9.88
1980	9.1%	92,765	27.96	38,497	11.60
1981	9.8%	99,157	29.05	39,134	11.47
1982	7.7%	102,038	29.06	37,510	10.68
1983	6.9%	109,722	30.38	38,033	10.53
1984	5.9%	115,190	30.99	38,397	10.33
1985	6.1%	127,284	33.27	40,919	10.69

Table 6

REPUBLIC OF HONDURAS
MINISTRY OF PUBLIC HEALTH EXPENDITURES

ANNUAL GROWTH RATES, 1970 TO 1985

YEAR	ANNUAL GROWTH RATES OF PUBLIC HEALTH EXPENDITURES			
	current prices	current prices per capita	1966 prices	1966 prices per capita
1970				
1971	1.9%	-0.8%	0.1%	-2.5%
1972	4.3%	1.5%	-0.0%	-2.7%
1973	13.9%	10.9%	6.8%	4.0%
1974	51.4%	47.5%	35.6%	32.1%
1975	-1.2%	-3.8%	-9.6%	-12.0%
1976	52.6%	48.5%	40.7%	36.9%
1977	-0.9%	-3.6%	-12.7%	-15.0%
1978	31.3%	27.8%	22.8%	19.6%
1979	6.9%	4.0%	-0.8%	-3.4%
1980	33.3%	29.7%	20.7%	17.5%
1981	6.9%	3.9%	1.7%	-1.2%
1982	2.9%	0.0%	-4.1%	-6.8%
1983	7.5%	4.6%	1.4%	-1.4%
1984	5.0%	2.0%	1.0%	-1.9%
1985	10.5%	7.4%	6.6%	3.5%

TABLE 7

IAID AND IDB ASSISTANCE TO HEALTH IN HONDURAS
 AMOUNTS APPROVED AND DISBURSED, 1960 TO 1985

INTERNATIONAL ORGANIZATION	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Interamerican Health Organization (1) (Actual Disbursements)	126.363	123.867	187.445	151.616	167.100	179.100	196.635	257.223	237.401	290.266	293.971	256.902	272.382	322.763
Interamerican Development Bank (2) (Approved)	0	0	0	2.300.000	372.469	0	0	0	49.000	46.200	100.000	5.770.000	0	1.200.000
Water and Sanitation Projects SARAA (3)	0	0	0	2.300.000	372.469	0	0	0	0	46.200	100.000	450.000	0	1.200.000
Tegucigalpa				150.000	372.469							350.000		
San Pedro Sula				2.150.000							100.000	100.000		1.200.000
Other Health Projects									49.000			5.320.000		
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	TOTAL 1960-1985		
Interamerican Health Organization (1) (Actual Disbursements)	606.738	745.392	898.199	1.049.334	1.200.469	1.138.503	1.138.503	1.696.033	1.696.033					13.630.288
Interamerican Development Bank (2) (Approved)	14.965.000	440.000	5.620.000	0	7.302.290	0	0	0	22.000	8.100	24.166.000			66.661.059
Water and Sanitation Projects SARAA (3)		440.000	5.620.000	0	7.302.290	0	0	0	22.000	8.100	24.166.000			46.827.059
Tegucigalpa	500.000				7.302.290				22.000	8.100	24.166.000			37.157.059
San Pedro Sula	14.465.000		5.620.000											1.900.000
Other Health Projects														19.834.000

Notes:

(1) Single amounts were given for the two years 1980 and 1981, and for 1982 and 1983; these amounts were split equally between the years. The 1978 amount was not available; the amount shown was interpolated between the 1977 and 1979 values.

(2) The full amount of the IDB amount approved is entered in the year in which the loan was approved.

(3) Includes 3 stages of a rural water supply project: \$4.0 million in 1974; \$7.3 million in 1979; and \$233.0 in 1985.

TABLE 8

United States Agency for International Development
Disbursements of Health Project Funds
1967 to 1986

HEALTH PROJECT NAME/ NUMBER	12 MONTHS ENDING SEPTEMBER 30						IN THOUSANDS OF U.S. DOLLARS					Total: 1967-1976
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976		
Maternal and Child Health 5220065	46	29	89	394	471	533	644	570	460	210		3.446
<hr/>												
HEALTH PROJECT NAME/ NUMBER	12 MONTHS ENDING SEPTEMBER 30						IN THOUSANDS OF U.S. DOLLARS					Total: 1977-1986
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986		
National Nutrition Planning 5220124	91	227	151	158	1,470	108	13					2.218
Integrated Rural Health/ Family Planning Services 5220130	32	167	288	358	431							1.276
Health Planning Sector I 5220148				138	261							399
Health Sector I 5220153					102	2,006	4,928	2,986	3,928	5,463		19,413
Rural Water Supply and Sanitation Systems 5220166					3,336	1,173	433	2,343	2,566	2,359		12,210
Honduran Family Planning 5220175					300	129		11				440
Changing Maternal Weaning Practices* 9311010							30	153	103	21		325
Family Planning Services								346	420			766
TOTAL	123	394	439	654	5,900	3,416	5,422	5,839	7,017	7,843		37,047

* 1979 to 1982 disbursement data not available; in those years the project was administered by AID/Washington, not AID/Honduras.

Table 9

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
ECONOMIC STABILIZATION FUNDS ALLOCATED FOR HEALTH PROJECTS
IN HONDURAS, 1983 TO 1987

YEAR	USAID HEALTH PROJECT NAME AND NUMBER		
	Health Sector I # 5220153	Rural Water Supply and Sanitation Systems # 5220166	Total
in lempiras			
Actual:			
1983	1,092,700	2,970,300	4,063,000
1984	1,893,000	1,800,000	3,693,000
1985	2,432,000	3,890,000	6,322,000
1986	3,252,900	3,800,563	7,053,463
Sub-total	8,670,600	12,460,863	21,131,463
Requested:			
1987	3,310,780	1,200,000	4,510,780
Total	11,981,380	13,660,863	25,642,243

TABLE 10

SELECTED USAID HEALTH PROJECTS IN HONDURAS
FINANCIAL CHARACTERISTICS

PROJECTS	FINANCIAL CHARACTERISTICS DURING THE PROJECT						POST PROJECT CHARACTERISTICS
	Honduran share of spending	USAID funding share	USAID mix of human resources & material support	Funding of other foreign donors and lenders	Cost recovery from beneficiaries	Effectiveness of Project	
SUSTAINED OUTPUTS AND OUTCOMES							
Rural Water Supplies 1962-1970 (62 water systems)	25% of capital cost; 100% of operation & maintenance costs	75% of capital costs	Almost entirely material and budgetary support	none	0% of capital; 60% of recurrent, incl. depreciation, in 1970	good	SANAA and communities funded O & M costs; foreign donors & lenders fund capital costs of new systems
Nutrition: water and latrines component 1976-1983	significant	significant through SAPLAN	mostly material	some from other material sources	some	good	Ministry and other sources continue funding
Integrated Rural Health, Family Planning: training of auxiliary nurses component 1976-1981	estimated to be less than half	estimated to be more than half	a mixture of both	none	little	good	Ministry and IDB continue funding
OUTPUTS AND OUTCOMES NOT SUSTAINED							
Material and Child Health 1965-1976	some personal costs toward the end of the project	almost all	a mixture of both	negligible	token amounts	mixed	Ministry of Health only retained half of the project personnel, thus reducing the program's scope
Malaria Eradication Program 1965-1969	significant contribution	significant, and rising at end of the project	mostly material; some human resources	some from PAHP/WHO and UNICEF	none, but community volunteers worked in project	mixed	USAID's funding was subsequently only very partially replaced by Ministry funds
Nutrition: other components (planning) 1976-1983	approximately one-third	approximately two-thirds	mostly material; some training	a little technical assistance from INCAP funded by AOCAP	some through particular sub-projects	mixed	CONSUPLANE continues at a very much reduced level
Integrated Rural Health, Family Planning: community level training 1976-1981	approximately one-half	approximately one-half	mixture of both; large portion of contraceptives	some support from UNICEF and PAHO	none	mixed; midwives most effective; rapid decline in other community workers	continues with national funds at lower effectiveness
CURRENT PROJECT							
Health Sector I	significant, Ministry has taken over some personnel positions	significant	a mixture of both	some parallel contributions	more from hospital services	appears to be good	not applicable

TABLE 11

 MINISTRY OF PUBLIC HEALTH, REPUBLIC OF HONDURAS
 OPERATING EXPENSES 1968 to 1985
 HOSPITAL AND NON-HOSPITAL
 IN CURRENT AND CONSTANT LEMPIRAS

CATEGORIES	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
OPERATING EXPENSES IN CURRENT LEMPIRAS										
Amounts: Total	12,959,500	15,277,300	16,957,400	18,495,700	19,772,900	21,566,000	21,890,100	25,731,900	29,368,600	38,884,200
Hospital	6,965,800	7,918,400	10,535,800	11,623,800	12,157,700	13,098,036	13,881,311	16,594,900	10,969,300	16,612,500
Non-hospital	5,993,700	7,358,900	6,421,600	6,871,900	7,615,200	8,468,064	8,008,789	9,137,000	10,869,300	16,612,500
Annual Percentage Growth Total		17.9%	11.0%	9.1%	6.9%					
Hospital		13.7%	33.1%	10.3%	4.6%	9.1%	1.5%	17.6%	14.1%	31.4%
Non-hospital		22.8%	-12.7%	7.0%	10.8%	11.2%	-5.4%	19.5%	18.9%	52.9%
PERCENTAGES: Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Hospital	54%	52%	62%	63%	61%	61%	63%	64%	63%	57%
Non-hospital	46%	48%	38%	37%	39%	39%	37%	36%	37%	43%
GDP IMPLICIT PRICE DEFLATOR, 1966 =100	105.2	108.8	111.5	113.5	118.4	126.2	140.9	154.0	167.0	189.6
OPERATING EXPENSES IN CONSTANT LEMPIRAS										
Amounts: Total	12,318,916	14,041,636	15,208,430	16,295,771	16,700,084	17,088,827	15,535,912	16,709,026	17,580,898	20,513,435
Hospital	6,621,483	7,277,941	9,449,148	10,241,233	10,268,328	10,378,792	9,851,889	10,775,909	11,074,810	11,749,479
Non-hospital	5,697,433	6,763,695	5,759,283	6,054,537	6,431,757	6,710,035	5,684,023	5,933,117	6,506,088	8,763,957
Annual Percentage Growth: Total		14.0%	8.3%	7.1%	2.5%	2.3%	-9.1%	7.6%	5.2%	16.7%
Hospital		9.9%	29.8%	8.4%	0.3%	1.1%	-2.1%	9.4%	2.8%	6.1%
Non-hospital		18.7%	-14.9%	5.1%	6.2%	4.3%	-15.3%	4.4%	9.7%	34.7%
OPERATING EXPENSES IN CURRENT LEMPIRAS (1978-1985)										
CATEGORIES	1978	1979	1980	1981	1982	1983	1984	1985	ANNUAL GROWTH RATE 1968 TO 1985 (1)	
OPERATING EXPENSES IN CURRENT LEMPIRAS										
Amounts: Total	150,629,700	59,620,700	74,984,200	90,862,800	97,404,800	108,990,800	110,237,600	120,039,800		14.0%
Hospital	29,734,000	34,795,300	42,817,100	41,172,800	54,623,900	75,491,500	58,547,300	61,345,200		13.7%
Non-hospital	22,895,700	24,825,400	32,167,100	41,172,800	42,780,900	51,499,300	51,690,300	58,693,600		14.4%
Annual Percentage Growth Total	35.3%	13.3%	25.8%	21.2%	7.2%	11.9%	1.1%	8.9%		
Hospital	33.5%	17.0%	23.1%	16.1%	9.9%	5.2%	1.8%	4.8%		
Non-hospital	37.8%	8.4%	29.6%	28.0%	3.9%	20.4%	0.4%	13.5%		
PERCENTAGES: Total	100%	100%	100%	100%	100%	100%	100%	100%		
Hospital	56%	58%	57%	55%	56%	53%	53%	51%		
Non-hospital	44%	42%	43%	45%	44%	47%	47%	49%		
GDP IMPLICIT PRICE DEFLATOR, 1966 =100	202.7	217.8	241.0	253.4	272.0	288.5	300.0	311.1		6.6%
OPERATING EXPENSES IN CONSTANT LEMPIRAS										
Amounts: Total	25,969,873	27,372,683	31,117,840	35,861,022	35,806,996	37,779,530	36,745,867	38,589,643		6.9%
Hospital	14,672,100	15,975,001	17,768,752	19,611,262	20,080,301	19,928,305	19,515,767	19,721,035		6.6%
Non-hospital	11,297,773	11,397,683	13,349,088	16,249,760	15,726,694	17,851,226	17,230,100	18,868,608		7.3%
Annual Percentage Growth: Total	26.6%	5.4%	13.7%	15.2%	-0.2%	5.5%	-2.7%	5.0%		
Hospital	24.9%	8.9%	11.2%	10.4%	-2.4%	-0.8%	-2.1%	1.1%		
Non-hospital	28.9%	0.9%	17.1%	21.7%	-3.2%	13.5%	-3.5%	9.5%		

Notes:

(1) Compound annual growth rate 1968 to 1985

TABLE 12

MINISTRY OF PUBLIC HEALTH, REPUBLIC OF HONDURAS
 OPERATING EXPENSES IN CURRENT AND CONSTANT LEMPIRAS
 SELECTED YEARS 1968 to 1985
 ANNUAL COMPOUND GROWTH RATES

OPERATING EXPENSES, AMOUNTS IN LEMPIRAS AND SHARES IN PERCENTAGES		1968	1972	1978	1981	1985
CURRENT LEMPIRAS:	TOTAL	12,959,500	19,772,900	52,629,700	90,862,800	120,038,800
	HOSPITAL	6,965,800	12,157,700	29,734,000	49,690,000	61,345,200
	NON-HOSPITAL	5,993,700	7,615,200	22,895,700	41,172,800	58,693,600
CONSTANT LEMPIRAS:	TOTAL	12,318,916	16,700,084	25,969,873	35,861,022	38,589,643
	HOSPITAL	6,621,483	10,268,328	14,672,100	19,611,262	19,721,035
	NON-HOSPITAL	5,697,433	6,431,757	11,297,773	16,249,760	18,868,608
PERCENTAGE: TOTAL	HOSPITAL	100.0%	100.0%	100.0%	100.0%	100.0%
	NON-HOSPITAL	53.8%	61.5%	56.5%	54.7%	51.1%
		46.2%	38.5%	43.5%	45.3%	48.9%
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OPERATING EXPENSES, COMPOUND ANNUAL GROWTH RATES		1968-1972	1972-1978	1978-1981	1981-1985	1968-1985
CURRENT LEMPIRAS:	TOTAL	11.1%	17.7%	20.0%	7.2%	14.0%
	HOSPITAL	14.9%	16.1%	18.7%	5.4%	13.7%
	NON-HOSPITAL	6.2%	20.1%	21.6%	9.3%	14.4%
CURRENT LEMPIRAS:	TOTAL	7.9%	7.6%	11.4%	1.9%	6.9%
	HOSPITAL	11.6%	6.1%	10.2%	0.1%	6.6%
	NON-HOSPITAL	3.1%	9.8%	12.9%	3.8%	7.3%
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ANNEX H

METHODOLOGY

A. INTRODUCTION

This annex discusses the methodology of the present study of the sustainability of United States Government-supported public health projects in Honduras. Essentially the study field-tested the methodology in the process adapting it to the circumstances encountered in Honduras. The final sections of the annex discuss how the methodology was field-tested and offers observations concerning methodology.

The methodology to be employed in the study was described in HONDURAS HEALTH ASSISTANCE: Evaluation Design, by Thomas Bossert, study team leader, University Research Corporation (URC), October 14, 1986. This original methodology had benefited from the contributions of many individuals and from previous reports. The following reports are among those that were particularly useful: Evaluation of AID Health Programs in the Context of Sustainability, by S. Blumenfeld, URC, 1986; ISSUES IN HEALTH SECTOR EVALUATION, by S. Blumenfeld and M Pipp, URC, for USAID/Washington, D.C., September 1985; ISSUES IN HEALTH IMPACT SUSTAINABILITY, by S. Buzzard, URC, for USAID/Washington, D.C., May 1986; and FRAMEWORK FOR NATIONAL HEALTH SECTOR IMPACT EVALUATIONS AND GENERIC SCOPE OF WORK, by L. Godiksen, USAID/Washington, D.C., May 1986.

The project team, contracted by University Research Corporation, included the Team leader, a policy analyst/political science Ph.D. with eight years experience in public health policy analysis in Central America; a public health specialist, M.P.H., with extensive experience in evaluation of primary health projects; a development economist, with field experience in financial and economic analysis of rural credit and water projects. All URC team members had experience in Latin America and were Spanish speakers. This team was in Honduras three and one half weeks in November 1986.

Honduran counterparts included three physicians who were prominent in Honduran public health. Two had been vice-ministers and one had been the Director General. In addition to providing their intimate knowledge and long historical perspective, they wrote several preliminary reports and facilitated the access of the URC team to important Honduran informants.

The PPC/CDIE project manager participated in all aspects of the project, both in Washington and in the field. In addition, a population officer from S & T/Health joined the team for one week to research and write one of the case studies; and a former USAID/Honduras health officer helped design the project, facilitate access to officials, prepare the final workshop and review the report and cases.

USAID/Honduras continued to express interest in and support for the project. The health and population officers reviewed design papers, initial drafts and final drafts, they facilitated access to Honduran officials and made themselves available for interviews by the URC team. They contributed conceptually, factually, and administratively to the project. Nevertheless, all efforts were made by the URC team to avoid burdening the Mission unnecessarily. The project established its own office with an excellent secretarial service, word processing support and vehicle.

B. DESCRIPTION

1. Systems Approach to the Case Studies

The purpose of the study was to investigate why, for some United States Government-supported public health projects, the activities and benefits of the projects continued after the end of United States assistance, while for other projects they did not. What factors favor or inhibit sustainability? In particular, how can the design and implementation of future projects be modified to increase the likelihood of post-project continuation of activities and benefits?

These questions naturally lead to the United States Government-supported public health projects being the focus of the study. In the methodology, these projects became the cases to be examined.

The methodology focuses on projects which were completed some time ago and for which, as a consequence, it is known today whether in fact their activities and benefits were continued after USAID assistance ceased.

The methodology, as described in the following paragraphs, uses a basic systems approach which studies a multiplicity of influences on the sustainability of projects. The projects were examined in the context of an overall system with interacting sub-systems (or elements) such as the government, economy, communities, and international donors and lenders.

2. Project Matrix and Time Periods

The USAID projects were described using the matrix, or system, with six levels from inputs to goals. An example of this matrix is given in Table A. Like the USAID logical framework, the matrix is a hierarchy with one element leading to the next; inputs through a process achieve outputs, for example. The use of the matrix provides rigor and consistency in the description of the project. Comparisons of project outcomes to the inputs permit observations to be made about the overall effectiveness of the project.

The projects are also defined in terms of three time periods: pre-project, during-project period, and the post-project. Comparisons of the pre-project to the during-project period enable judgments to be made concerning whether the project increased committed resources (inputs), provided net benefits, or increased achievement of objectives.

TABLE A
 USAID RURAL WATER SUPPLIES PROJECT (5220044)
 DESIGN

MATRIX ELEMENT	RURAL WATER SUPPLIES PROJECT DESIGN
GOALS	Better health of villagers
	Improved economic condition of villagers
OBJECTIVES	Reduction in time and effort expended in obtaining water
	Reduction in water-borne diseases
OUTCOME (BENEFITS)	Increase in quantity of water supplied to homes
	Increase in quality of water supplied to homes
OUTPUTS	Construct 24 water systems according to specifications
	Operate and maintain 24 water systems
PROCESS	SANAA works with community
	USAID provides technical assistance to SANAA
	SANAA builds system
	SANAA hires villagers to administer and operate system
INPUTS	USAID loan of U.S. \$ 1,050,000
	USAID technical assistance
	SANAA budgetary support
	Community participation

The use of the matrix and the clear demarcation of time periods facilitate answers to the questions:

What is being (or should be) sustained?

When should sustainability be measured?

After considerable discussion, especially in the first week in Honduras, we decided to focus on the sustainability of project outcomes (benefits) and outputs. Achievements of goals and objectives are important, but often in the field of public health, direct data on the impact of project output on health indicators are lacking. While practical measurement problems exist at each level of the matrix, there were only a few cases in which data on outcomes--such as increases in the water supplied to homes or the reduction in the incidence of certain diseases -- were available.

Since we had such limited data on project outcomes, most of our analysis focused on the outputs, the immediate result of the project's use of inputs. Numbers of trained nurses and construction of water systems are examples of these outputs. We had to assume, then, that these outputs continued to produce their expected outcomes: e.g., trained nurses continued to utilize their training and continued to provide services expected to improve health levels of the population.

Thus it was decided that project outputs and, when possible, outcomes would be the units of measurement for sustainability. It was also recognized, however, that information on the other elements of the matrix would also be of interest. In particular, for the financing aspects, the input level of the matrix is pertinent and data were sought concerning the resources provided in the pre-, during-, and post-project periods.

The 'when' question was answered by the decision to focus on two time periods: 3-to-5 years after the project; and up to 20 years after the project. The 3-to-5 year period provides enough time after the end of U.S. assistance for the host country to find other ways of providing the same outputs and outcomes, if indeed it is to do so. The 20-year period provides a long-term perspective.

A project would be judged to have been sustained if the project's level of outputs and outcomes continued in the 3-to-5 post-project period.

3. Sustainability Factors

Nine factors concerning the design and implementation of USAID projects were identified which may have influenced the sustainability of the projects. They reflect the systems approach in which there is a broad range of factors which are interrelated and which may contribute to sustainability. The factors are:

1. National Commitment to Project Goals
2. Policy Dialogue between USAID and Honduran authorities

3. Institutional Organization of the Project
4. Financing
5. Technical Assistance
6. Donor Coordination
7. Training
8. Community Participation
9. Project Effectiveness

During the study, two factors (numbers 1 and 9) were added to the initial seven included in the evaluation design to attain the nine listed above.

4. Development and Testing of Working Hypotheses

For these sustainability factors, working hypotheses were developed which related characteristics of the project to its likelihood of being sustained. That is, it was hypothesized that certain during-project characteristics may favor sustainability. This approach endeavors to determine which factors may be consistent with, or 'predict' in some fashion, the subsequent continuation of outputs and outcomes. The identification of such predictive factors would be useful for the design and implementation of future projects.

Examples of working hypotheses are as follows:

The outputs and outcomes of USAID-supported primary health care projects are MORE likely to be continued after the project,...

- the GREATER the commitment to the project's goal during the project by the central government, the implementing agency, and beneficiaries
- the MORE centrally the organization of the project is positioned on the concentrated (vertical)-to- integrated spectrum
- the LOWER the share of USAID financing throughout the project
- the MORE the host country is involved in setting the objectives of and in directing the technical assistance.

All of these hypotheses relate project characteristics (or conditions) of the during-project period to the likelihood of post-project continuation of benefits.

It was recognized from the outset that it would not be possible in the Honduras sustainability study to test these hypotheses in a statistically

significant fashion. Such rigorous tests would use the extent to which projects were sustained as the dependent variable; projects would be classed as 'sustained' or 'not sustained;' or, more ambitiously, a scale could be devised and each project given a value on the scale. The independent variables would be the large number of project characteristics arising from the nine sustainability factors and multiple elements within factors. Statistical techniques, such a multiple regression analysis, would then be used to test for relationships between the independent and dependent variables. Care would have to be taken to allow for interdependence among the independent variables and for the influence of the external issues discussed in the following section.

Such statistical testing was not possible for a number of reasons. First, there are a host of definitional and measurement problems concerning a number of the the variables. How does quantity national commitment, for example? How can national commitment be distinguished from central government funding? Commitment by whom?

Second, even for quantifiable variables there are severe problems in obtaining data for the defined variables. For projects that go back to the early 1940's, good data were unavailable. Care must be taken to ensure the data that are available are consistently describing the same phenomenon over time. One problem encountered, for example, was the changes in the budget categories used through the years by the Ministry of Public Health.

Third, the number of case studies was small relative to the number of independent variables.

Because of these major problems, the testing of hypotheses was approached in a much more qualitative manner. The analysis of factors related to sustainability was carried out with openness to ideas and with flexibility. For example, the team kept itself open during the study to adding, deleting, or otherwise modifying both sustainability factors and hypotheses for these factors.

5. External Issues

The methodology of the study also recognized that the continuation of project outputs and outcomes was affected by events and conditions between the end of the project and when such continuation is measured. Because these events and conditions are external to the project, they are termed 'external issues.' But they directly reflect the fact that the projects operate within the context of larger systems. For example, Ministry of Public Health budgets could be reduced by a recession and cutbacks in the entire central government budget, which in turn could explain why certain projects were not continued after United States assistance stopped.

The consideration of external issues focuses on national and Ministry-level events and conditions which were the context in which the projects operated

and in which they subsequently were or were not sustained. Also unlike the methodology used for the project characteristics, which requires looking at two time periods, the same time period is used for examining both the factors and the impact of external issues. For example, a change in government in the post-project period could explain the failure of a project's outputs and outcomes to continue (also) in the post-project period.

Understanding the role of external issues can also provide useful information for the design and implementation of projects, albeit in a different fashion. Since these factors are largely exogenous to the projects, the efforts of project designers may be directed to attempts to insulate their projects from possible adverse external events.

C. FIELD TESTING

In addition to its directly substantive aspects, the present study also field-tested our methodology. Shortly before leaving for Honduras and especially during the first week in Honduras, the team discussed how the methodology was to be applied. These discussions also led to the addition of the sustainability factor 'national commitment to goal.'

The methodology imposed great demands for data and information. Comparable data were needed for outputs and outcomes for different time periods, for example.

The hypotheses also required that much qualitative information be obtained, much of which could only be obtained through interviews. A set of standard questions were developed. The questions were asked in such a way as to give the interviewers an opportunity to express their own views. There were many open ended questions. The purpose of the study was explained and interviewers were invited to come up with their own ideas on sustainability.

Once the case studies were prepared, we presented them to a one day workshop of Honduran health officials (past and present) and AID staff. Separate working groups reviewed each case and presented their evaluations of the factual and interpretive materials of each case. These evaluations were quite positive. Some factual errors were changed as a result of the workshop.

During the three and a half weeks in Honduras and the days in Washington, D.C., in early December 1986, the team met often to discuss the implications of the data and information collected with respect to the sustainability factors, hypotheses, and the external issues. These discussions, as well as those at the concluding workshop in Honduras and the debriefing meeting in Washington, also contributed to the qualitative testing of hypotheses. It was decided to add 'project effectiveness' as an explicit sustainability factor for which sufficient information had already been collected. Consideration was also given to adding another new factor, 'mix of human resources and material support from USAID,' as factor but it was decided to treat that as an item within the financing factor.

D. OBSERVATIONS

The following observations may be useful both for understanding the development and use of the methodology in the present study and for planning for similar studies concerning sustainability.

- Sustainability is a complex issue to address. The time spent by the team developing and adapting the methodology was time well spent.

- The methodology described above was a useful way of attacking the subject of sustainability. It makes full use of the advantage of knowing today whether IN FACT previous projects have been sustained. Building on system concepts allows many variables to be considered for their possible impacts on the sustainability of specific projects.

- It is important to be both:

- analytically rigorous in thinking about sustainability, e.g., identifying sustainability factors, developing hypotheses, and assessing the impact of external issues

- open to new ideas and flexible in adapting the methodology to available information and local circumstances

- Quantitative data and hard information were often difficult to obtain and qualitative and qualified statements accordingly are indicated.

- The methodology involves the use of USAID-supported project as the cases to be examined. In the present study, it was considered important to examine the Ministry of Public Health's Rural Penetration Program (see Annex E), which began in the 1970's. This Honduran program received assistance from a number of USAID projects. Thus, it was necessary to look at components of this program to determine whether the USAID-funded activities continued after USAID stopped its assistance. This is an example of how flexibility was needed to apply the methodology.

- Going into the study, the present team had a number of advantages, including:

- two design trips facilitated access and logistics

- prior preparation of papers on methodology helped define conceptual issues

- prior collection of pertinent documents in both Washington and Honduras - an excellent counterpart group of Honduran public health officials (who had held high posts in the Ministry of Public Health)

- and a team leader who was very familiar with public health policy in Honduras.

Each of these advantages was important to the success of the present project. A future study should consider ways of duplicating these efforts.

- In spite of these advantages, the three and a half weeks in the field and the few additional days in Washington, D.C. to polish the draft report were inadequate. More time could have been profitably spent in obtaining information, in internal discussions, and in preparing and revising the report. The time ended while the team was still productively assessing and interpreting the information obtained.

Although appropriate to the difficulty of sustainability as a subject of study, the methodology is demanding in terms of quantitative and qualitative information required. Time is also needed at the end of the study to assimilate the information and to draw conclusions.

It would have been desirable to have had two months in Honduras instead of one--that is, an increase of one month. The additional month could have been added to the study month in Honduras; or it could have been split between the design trip and the time of the study itself.

- The detailed investigation of the case studies was an excellent investment of time. Sustainability can become a very abstract and ephemeral topic; immersion in the case studies provided an important anchor in reality.

- One of the features of the methodology is that it treats different kind of public health projects equal, in the sense that all are cases. It should be recognized that of course there are aspects of cases peculiar to particular kinds of public health projects.

In the present study, the malaria program's evolution was heavily influenced by the earlier belief on the part of international donors and Honduran officials that malaria could be eradicated in Honduras.

The rural water systems of SANAA are included in the present study as one of the projects. But, unlike many health care goods and services, people know they need water. They want the convenience and aesthetics of clear water piped to their homes, although they may not appreciate the health benefits of potable water. Water is a commodity in demand, as well as a way of conveying health benefits. This factor could help explain the continuation of water supply projects.

This limitation can be partially overcome by being aware of it and allowing for it in the interpretation of results. Comparative studies in different countries may provide an opportunity to overcome this limitation by studying the sustainability of the same kind of projects.

- In measuring which project outputs and outcomes are sustained, a very useful distinction may be drawn. On the one hand, there is the continuation of the same outcomes from the resources originally expended in the during-project period. For example, are the 62 rural water systems built by

SANAA in the 1960's continuing to supply water in the 1980's? On the other hand, did SANAA continue to build water systems after USAID's assistance stopped?

One category of outputs and outcomes may be described as a continuation of the direct activities of the project; the other as the replication of project outputs and outcomes.

From the viewpoint of sustainability, the replication of outputs and outcomes is especially important. Nevertheless, it should be recognized that in some earlier projects, replication was not an explicit objective. An earlier project could succeed on its own terms without the host country subsequently replicating the project's activities.

VI. INTERVIEWS

- 1) Ramón Alcerro, former Vice-Minister of Health, 1955, (Honduran team member)
- 2) Rigoberto Alvarado, former Vice-Minister of Health, 1972-1978 (Honduran team member)
- 3) Alberto Guzmán, former Director of Division of Epidemiology and Director General of Ministry of Health, 1980-1982 (Honduran team member)
- 4) Enrique Aguilar Paz, former Minister of Health, 1972-78
- 5) Juan de Dios Paredes, Management Sciences for Health, former Minister of Health 1984-5
- 6) Manuel Octavio Suazo, former Vice-Minister of Health, 1978-80.
- 7) Rodrigo Barahona, former Director General of Public Health, Ministry of Health, 1955-?
- 8) Carlos Godoy, former Director General of Health Services, Ministry of Health, 1972-78
- 9) Gustavo Corrales, Management Sciences for Health, former Director General of Health Services, Ministry of Health, 1982-84
- 10) Yanuario García, Director General Health Services, Ministry of Health, 1986-present
- 11) Aníbal Pinto, AID/Honduras, Executive Unit of Health Sector I, former Sub-Director General Ministry of Health, 1972-78
- 12) Emile Falk, former director of SCISP (Inter-American Public Health Service), 1958-65
- 13) Benjamín Rivera, Director of Division of Environmental Sanitation, Ministry of Health
- 14) Arnalda Estrada, Director of Human Resources Division, former Director of Maternal and Child Health, Ministry of Health
- 15) Jorge Haddad, PAHO, former director of Human Resources, Ministry of Health, 1972-78
- 16) Carlos Pineda, Director of Division of Vector Control, Ministry of Health
- 17) Hilton Troches, Honduran Social Security Institute, former Director of Planning, Ministry of Health, 1972-76
- 18) Carlos Pineda, former Health Planner, Ministry of Public Health, 1960's
- 19) Gómez Padilla, former Director of Department of Nutrition, Ministry of Health, in mid-1960s
- 20) Danilo Velázquez, former Director of Family Planning Program, 1965-74
- 21) Rodolfo Magana, Management Sciences for Health, former Director of UNIDESA and PRONASSA, Ministry of Health, 1973-84
- 22) Manuel Sandoval, former Director of Mobile Units Program, Ministry of Health, 1960's
- 23) Humberto Pineda Santos, former Director of Health Region 3, Ministry of Public Health, 1960's-1980
- 24) Juan Manuel Fuentes, Sub-Director of Region 3, Ministry of Health
- 25) Olimpia Lainez, former Director of Nursing of Region 7, Ministry of Public Health
- 26) Digna de Reyes Flores, Director of Maternal and Child Health, Region 3, Ministry of Health
- 27) Alfonsina Montoya, former instructor at Tegucigalpa School of Auxiliary Nursing, Ministry of Health

- 28) Edy Orlando Moya, promotor de salud, Health Area Progresso, Ministry of Health
- 29) Carmen Hernández, auxiliary nurse, CESAR de Toyos, Health Area Progresso, Ministry of Health
- 30) Various auxiliary nurses, promoters and malaria workers in Region 3
- 31) Emirto Randaes, SAPLAN and CONSUPLANE
- 32) Roberta Palma, SAPLAN and CONSUPLANE
- 33) Ruben Clair Andino, former Director of SANAA, former official of CONSUPLANE
- 34) Fausto Gómez, former Chief Engineer, SCISP and SANAA 1950's and 1960's
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- 36) Escoto, Sanitary Engineer, SANAA
- 37) Carlos Alirio Cruz, former SNEM official
- 38) Eduardo Aquino, PAHO Country Representative
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- 41) Luby Cásares, UNDP/Honduras
- 42) Ricardo Agurica, UNFPA/Honduras
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- 48) Mireya Palmieri, INCAP
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- 53) Juan Castillo, AID/Honduras, Food for Peace Officer
- 54) Jeff Stivers, AID/Honduras, malaria advisor
- 55) Betsy Burleigh, AID/Guatemala
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- 57) Peter Cross, Chief of Party, Management Sciences for Health
- 58) Carlos Tabón, Management Sciences for Health
- 59) John Holley, Management Sciences for Health
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VII. BIBLIOGRAPHY

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
1) ALCERRO CASTRO, Ramón	Resumen sobre el estudio del tema "Características de Organización de la Atención Médica Privada en Honduras"	1985
2) ALCERRO CASTRO, Ramón	Servicios Médicos Sanitarios, Manuscript	1986
3) ALCERRO CASTRO, Ramón; ALVARADO LOZANO, Rigoberto, and GUZMAN BANEGAS, Alberto	Síntesis del Desarrollo del Sector Salud en Honduras, Manuscript	1986
4) ALMENDARES IRIAS, Juan	Programa de la Alianza para el Progreso en el Campo de Salud Pública en Honduras (UNAH Thesis)	1965
5) ALVARADO, Rigoberto	El Desarrollo de la Infraestructura de los Servicios de Salud frente a la Necesidad de la Extensión de la Cobertura en la República de Honduras	1976
6) ALVARADO, Rigoberto	Recortes de Periódicos desde 1972-1978. Colección Privada del Dr. Alvarado	1986
7) ALVARADO M., Tito	Personal Técnico Medio en Salud de Honduras (Ministerio de Salud)	1978
8) ARANDA-PASTOR, José et al.	"Planning a Food and Nutrition Surveillance System: The Example of Honduras," <u>American Journal of Public Health</u> , Aug. 78, 68-8, pp 748-50.	1978
9) ARANDA-PASTOR, José et al.	"Sistemas de Vigilancia Alimentaria Nutricional: Un Estudio de Caso en América Central." <u>Bol. Of. Panam</u> 90(2) 1981, pp-126	1981
10) AUTOTTE, P.A.	A Mid-Term Evaluation of Hospital Institutions for the PROALMA Project, Honduras (INCS)	1985
11) BERTRAND, J.T.	An Evaluation of Midwife Training in Honduras: Reports on the Initial Planning Session and Technical Assistance (APHA)	1980
12) BIRCH and DAVIS	Evaluation of Health Sector I	1984
13) BLATTER	Airgram - End of Tour Report	1961

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
14) BLUMENFELD, Stewart	Evaluation of AID Health Programs in the Context of Sustainability (University Research Corporation)	1986
15) BLUMENFELD, Stewart and PIPP, Marty	Issues in Health Sector Evaluation (URC)	1985
16) BORGE, Carlos	A Field Survey of Community Water Supplies of Honduras (ICA)	1961
17) BORGE, Carlos	End of Tour Report - Sanitary Engineering Advisor (ICA)	1963
18) BOSSERT, Thomas J.	"Health-Policy Innovation and International Assistance in Central America." <u>Political Science Quarterly</u> 99-3, Fall 1984, pp 441-455	1984
19) BOSSERT, Thomas J.	The Role of Government and Donor Support in Financing Primary Health Care: Case Studies from Central America	1982
20) BRAVO, J.	Informe sobre Participación Comunitaria en el Proceso de Extensión de la Cobertura de Servicios de Salud. Ministerio de Salud Pública, Gobierno de Honduras	1982
21) BUZZARD, Shirley	Issues in Health Impact Sustainability (URC)	1986
22) CAPPARELLI, E. et al.	Guidelines for a Multiyear Plan for the School Feeding and Maternal Child Health Programs (INCS)	1982
23) CASSEN, Robert and Associates	Does AID Work? (Oxford)	1986
24) CLAPP and MAYNE	Evaluation of P.L. 480 Title II Feeding Programs in Honduras	1977
25) CLAPP and MAYNE	Termination Report. Management Improvement Assistance to the Government of Honduras	1970
26) CONSEJO NACIONAL DE ECONOMIA (GOBIERNO DE HONDURAS)	Desarrollo Económico y Social de Honduras, 1965-1969	1965

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
27) CONSEJO NACIONAL DE ECONOMIA (GOBIERNO DE HONDURAS)	Resumen del Plan Nacional de Desarrollo Económico y Social en Honduras, Septiembre 1965, Tegucigalpa	1965
28) CONSUPLANE (HONDURAS)	Estrategia Nacional de Desarrollo 1986-1989	1983
29) CONSUPLANE (HONDURAS)	Estrategia para el Desarrollo 1982-1986 Vol. 1 - Estrategia Global	1982
30) CONSUPLANE (HONDURAS)	Monografía de la Población de Honduras	1985
31) CONSUPLANE (HONDURAS)	Plan Nacional de Desarrollo 1979-1983	1983
32) CONSUPLANE (HONDURAS)	Plan Nacional de Desarrollo 1982-1986 Vol. 2 - Plan Global	1982
33) CONSUPLANE (HONDURAS)	Plan Nacional de Desarrollo para la Salud 1982-1986. Plan Operativo Sector Salud 1973	1973
34) CONSUPLANE (HONDURAS)	Plan Nacional de Salud 1979-1983	1983
35) CONSUPLANE (HONDURAS)	Plan Sectorial de Salud	1970
36) CONSUPLANE (HONDURAS)	Programa Mundial de Alimentos, Naciones Unidas/FAO. Análisis de los Programas de Ayuda Alimentaria que Funcionan en Honduras	1985
37) DE ABARCA, A., et al.	"La Enfermería en el Plan Nacional de Salud de Honduras." <u>Educación Médica y Salud</u> , 13-4, 1979, pp. 351-361	1979
38) DE BONILLA, V. and VERDUZCO, J.J.	Analysis of Administration and Management in the Health Sector, Ministry of Health, Government of Honduras	1981
39) DE CARIAS, and CHONGS	Administrative Arrangements for Linking the TBA with the Formal Health System	1981
40) DE ESCOBAR and PINEDA	Estudio sobre Cumplimiento de Metas Relacionadas con la Formación de Personal de Enfermería y Comunitario. Informe Final.	1981
41) DEVELOPMENT ASSOCIATES	Basic Medicine Supply Assessment (Honduras)	1984
42) DIRECCION GENERAL DE ESTADISTICAS Y CENSOS/ HONDURAS	Boletín Informativo de la Encuesta Demográfica Nacional de Honduras	1972

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
43) DIRECCION GENERAL DE ESTADISTICAS Y CENSOS/ HONDURAS	Informe General Encuesta Demográfica Nacional 1983 de Honduras	1983
44) DONALDSON, D.	Operation and Maintenance of Rural Drinking Water and Latrine Programs in Honduras (Wash)	1984
45) DONALDSON, D.	Testing of USAID - Type Handpump (Honduras) (Wash)	1984
46) EDMONDS, S., et al.	Final Evaluation of the Honduras Health Sector I Project (Development Associates)	1986
47) EDMONDS, S., et al.	Follow-on Project Recommendations from the Honduras Health Sector I Project Final Evaluation (Development Associates)	1986
48) EOFF, G.M.	Vista Socio-Cultural de la Salud Rural y la Entrega de Servicios de Salud. Mito y Realidad.	1980
49) ESTRADA, Anarda, et al.	Análisis del Desarrollo de Recursos Humanos en el Sector Salud de Honduras. (Ministerio de Salud Pública y Asistencia Social y la Agencia para el Desarrollo Internacional de los Estados Unidos).	1980
50) FLORES, Francisco	Realidad Indígena Hondureña	1977
51) FOOTE, D. and MORTORELL R.	Briefing Notes and Tables for Presentation on Mass Media and Health Practices Evaluation	1985
52) GOBIERNO DE HONDURAS	Análisis del Funcionamiento de los PAG [food donation programs] y Lineamientos de Estrategia	1986
53) GOBIERNO DE HONDURAS	Plan Integral de Educación Nutricional a Desarrollarse en la República de Honduras con la Cooperación de la "FAO, de la "OMS" de la "UNICEF".	1959
54) GOBIERNO DE HONDURAS	Review of the Strategy for Malaria Eradication Report of the Review Team	1970

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
55) GODIKSEN, Lois.	Framework for National Health Sector Impact Evaluations and Generic Scope of Work. Interim Document.	1986
56) GRUESO, R. and TICAS, J.	Report of the Final Evaluation of the Regional Nutrition Technical Outreach Project INCAP/ROCAP.	1985
57) GUZMAN, Alberto	Evaluación Epidemiológica de Honduras	1986
58) H.V.SANT	Airgram - End of Tour Report	1962
59) HARRISON, Polly and HARTMAN, A. Fred	Vértical and Horizontal Integration: Decision-Making in Honduras Management (Management Sciences for Health)	1985
60) HARTMAN, A.Fred	A strategy for Strengthening Basic Health Services in Honduras Presented to the Ministry of Health and Social Assistance, Government of Honduras and the United States Agency for International Development (Management Services for Health)	1980
61) HEAVER, Richard and ISREAL, Arturo	Country Commitment to Development Projects (World Bank).	1986
62) HILL, Kenneth	Fertility and Mortality: Changes in Honduras 1950-1974 (National Academy of Science)	1980
63) HOLLEY, J.	Análisis Preliminar del Presupuesto para el Ministerio de Salud Pública. (Management Sciences for Health)	1986
64) HOLLEY, J. et al.	Feasibility Study: Expansion of PANI Laboratory (Management Sciences for Health)	no date
65) HOLLEY, J.	Projecting Future Operating Costs and Sources of Funds (Management Sciences for Health)	no date
66) HOOD, T.R. et al.	Honduras DEIDS Reconnaissance, Nov. 29- Dec. 6, 1972 (America Public Health Association)	1972
67) INSTITUTO DE NUTRICION DE CENTROAMERICA Y PANAMA (INCAP)	Estado Actual de los Proyectos Subregionales en el Area de Mejoramiento de la Situación Alimentaria y Nutricional. Reunión del Sector Salud y de Directores Generales de Salud y Jefes del Area Médica de los Institutos de Seguridad Social de Centro América y Panamá. San Salvacor.	1985

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
68) INSTITUTO DE NUTRICION DE CENTROAMERICA Y PANAMA (INCAP)	Evaluación Nutricional de la Población de Centro América y Panamá, Honduras	1969
69) INSTITUTO DE NUTRICION DE CENTROAMERICA Y PANAMA (INCAP)	Propuesta de Investigación	1976
70) INTER-AMERICAN DEVELOPMENT BANK	Annual Report.	1977
71) INTER-AMERICAN DEVELOPMENT BANK	Evaluación del Programa Anterior	1986
72) INTER-AMERICAN DEVELOPMENT BANK	Viabilidad Financiera e Institucional del Nuevo Programa	1986
73) INTERNATIONAL COOPERATION ADMINISTRATION	Airgram - Mutual Security Loan	1957
74) INTERNATIONAL COOPERATION ADMINISTRATION	Airgram - Status of Smather's Loan	1958
75) INTERNATIONAL COOPERATION ADMINISTRATION	Airgram - Utilization of Smather's Amendments Funds	1957
76) INTERNATIONAL COOPERATION ADMINISTRATION	Country Program Book, Honduras. Budget Proposal FY 1961	1961
77) INTERNATIONAL COOPERATION ADMINISTRATION	Health and Sanitation	1948
78) JAMES, Jr., B.E.	Technical Assistance to Manufacturers of AID Handpumps and Roboscreens in Honduras (WASH)	1983
79) JUNTA NACIONAL DE BIENESTAR SOCIAL	Manual de Procedimientos del Programa Piloto del Desarrollo Rural por Cooperación	1969
80) KIVETT, Hobart C.	Airgram - End of Tour Report (ICA)	
81) LEROY, A.	An Analysis of the Pharmaceutical System in Honduras (Management Sciences for Health)	1981
82) LIEBERSON, Joseph; MILLER, Devorah; ECKERSON, David KELLER, Howard	Health Sustainability in Africa: Evaluation of Factors of Sustainability in the Gambia Mass Media and Health Practices Project	1986

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
83) LIEBERSON, Joseph; MILLER, Devorah; KELLER, Howard	Health Sustainability in Africa: Evaluation of the Factors of Sustainability in the Lesotho Rural Health Development Project	1986
84) MANAGEMENT SCIENCES FOR HEALTH	Alternativas de Financiamiento, Servicios de Salud, Estudios de Casos de Honduras	1983
85) MANAGEMENT SCIENCES FOR HEALTH	Análisis Técnico de Informe de Análisis Administrativo, Proyecto Sector Salud I	1986
86) MANAGEMENT SCIENCES FOR HEALTH	Documento de observaciones que creemos importantes para las nuevas autoridades del Ministerio de Salud Pública	1986
87) MARTIN, P.A.	An Assessment of Factors which Affect Community Participation in the Honduran Rural Health System (APHA)	1981
88) MASON, J.	End of Tour Report (Malaria Advisor)	1963
89) MASSEY, John	Curriculum Design for the Auxiliary Nurse (Rural) Training in Honduras, Central América, Consultant's Report	1976
90) MEDINA, A.S.	An Assesment of the Honduran MCH/FP Program and Recommendations for a USAID Project Paper	1975
91) MENCHU, Maria Teresa and SIBRIAN, R.	Estudio sobre Programas de Alimentación Suplementaria y de Emergencia en Centro América y Panamá (INCAP)	1984
92) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Actitudes y Conductas de la Población Promovidas por el Programa de Ampliación de la Cobertura de los Servicios de Salud	1978
93) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Análisis de los Resultados de la Investigación sobre Suministros de Anticonceptivos	1986
94) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Características de Organismos de la Atención Médica en Honduras	1979
95) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Código Sanitario de la República de Honduras Boletín de Estadísticas e Información de Salud	1983

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
96) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Convenio Enmiendas. Desarrollo Institucional y Mejoramiento de Recursos Humanos	1980
97) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Convenio-Proyecto-Planificación AID	1981
98) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Desarrollo Institucional y Mejoramiento de Recursos Humanos	1980
99) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Diagnóstico del Sector Salud en Honduras 1975-1985	1980
100) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Encuesta Nacional de Prevalencia del Uso de Anticonceptivos	1981
101) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Encuesta Nacional de Salud Materno Infantil de Honduras	1984
102) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Honduras Family Planning Support	1982
103) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Informe 1977-1980	1980
104) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Investigación Suministros de Anticonceptivos y Capacitación del Personal-Planificación Familiar	1986
105) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	La Partera Tradicional	1986
106) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	La Salud y la Alianza para el Progreso	1961
107) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Lineamientos para la Reprogramación de Actividades de los Programas Básicos en los Niveles CESAR-CESAMO-Hospital y Pautas para la Distribución del Techo Financiero	1986

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
108) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Memoria de la Secretaria de Salud Pública y Asistencia Social	1965
109) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Memoria de la Secretaria de Salud Pública y Asistencia Social	1969-1970.
110) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Memoria 1975	1977
111) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Memoria 1976	1976
112) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Memoria 1977	1975
113) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Memoria 1978	1978
114) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Modelo Nacional de Supervisión para el Sistema de Prestación de Servicios	1985
115) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Normas Programas de Planificación Familiar y Lactancia Materna	1983
116) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Perfil Administrativo de los Centros de Salud Rural	no date
117) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Plan de Implementación 1986-1987. Proyecto de Comunicación en Salud (COMSALUD) para la Supervivencia Infantil	1986
118) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Plan Nacional de Desarrollo 1982-1986	1982
119) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Plan Nacional de Salud Pública	1959

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
120) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Plan Operativo Anual 1983	1983
121) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Política de Recursos Humanos para la Salud Honduras	1985
122) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Proceso de Programación Local	1985
123) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Programas de Adiestramiento de Recursos Humanos para la Salud	1977
124) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Reequipamiento de 200 CESARES	1981
125) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Resultados de la Investigación Operativa de Suministros de Anticonceptivos y del Proceso de Capacitación del Personal sobre el Programa de Planificación Familiar y Lactancia Maternal	1986
126) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Resumen del Desarrollo del Proceso de Programación de la Extensión de Cobertura de Servicios para la Salud en Honduras, Mayo 1983	1976
127) MINISTERIO DE SALUD PUBLICA/GOBIERNO DE HONDURAS	Situación Actual y Proyección, Programa de Saneamiento Básico	1986
128) MINISTERIO DE SALUD PUBLICA/MANAGEMENT SCIENCES FOR HEALTH	Estudio Operacional sobre la Partera Tradicional en el Area de Salud, Santa Barbara, Región de Salud No. 3, 1985	1986
129) MINISTERIO DE SALUD PUBLICA/ORGANIZACION PANAMERICANA DE SALUD	Informe Final de la Evaluación del Programa de Control de Enfermedades Diarreicas (CED)	1982
130) MINISTERIO DE SALUD PUBLICA/U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT	Convenio-Anexos Desarrollo Institucional y Mejoramiento de Recursos Humanos	1980

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
131) MINISTERIO DE TRABAJO/ GOBIERNO DE HONDURAS	Características de la Organización de la Atención Médica en los Departamentos de Medicina, Higiene y Seguridad Ocupacional y de Protección a la Infancia de la Dirección General de Asistencia Social del Ministerio de Trabajo	no date
132) MOLLOY, Danilo	Informe - Rockefeller Foundation	1982
133) MOLLOY, Danilo	Organización Sanitaria	1986
134) MONTEITH, R.S.	Foreign Trip Report (AID/RSSA): Honduras, November 14-19, 1982. Evaluation of the Asociación Hondureña de Planificación Familiar Community-Based Distribution (CBD) Program	1982
135) MONTEITH, R.S.	Foreign Trip Report (AID/RSSA): Honduras. January 18-30, 1981 - Planning for the Implementation of an Expanded Community Based Distribution of Contraceptives	1981
136) MORAZAN, Oscar	Honduras Evaluation: Epidemiology	1986
137) MORTON, F.A.	End of Tour Report. (Malaria Advisor)	1968
138) MOSQUERA and GRUESO	Informe de Consultoria de la Segunda Evaluación Externa del Proyecto Regional de ROCAP	1979
139) MOY, T.L.	Evaluation of Locally Available Handpumps in Honduras (WASH)	1984
140) MUNGUIA, E.	Evolución de la Malaria en Honduras y Algunas Consideraciones sobre el Problema en la Región Sur del País	1966
141) NEEDHAM, E.M.	Estudio de Organizaciones Voluntarias Privadas y Programas Bilaterales de Asistencia con Actividades de Salud y Nutrición en Honduras	1980
142) OBERLE, M.W. and SACHS, B.P.	Foreign Trip Report (AID/RSSA): Abortion Complications, Honduras, November 17-18, 1980	1981
143) ORGANIZACION PANAMERICANA DE SALUD	Desarrollo de la Representación OPS/OMS en Honduras	1985
144) ORGANIZACION PANAMERICANA DE SALUD	Informe Anual de la Cooperación de la OPS/OMS al Gobierno de Honduras Correspondiente al Año 1985	1985

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
145) ORGANIZACION PANAMERICANA DE SALUD	Proyecciones Cuadriennales	1971
146) PAVLICK	Airgram - End of Tour Report	1961
147) PEASE, Clifford	US Government Policy on Development of International Health	1986
148) PINEO, C.S. and VAN, H.	Diagnosis and Recommendations for Rural Water and Sanitation Systems in Honduras, Wash Field Report No. 69	1983
149) PINES, J.M. KING, J.M.	Caritas/CRS Title II Program in Honduras: A Challenge to USAID. An Evaluation Report. (John Snow Public Health Group, Boston)	1985
150) RESOURCES FOR THE AWARENESS OF POPULATION IMPACTS ON DEVELOPMENT (RAPID)	Los Efectos de la Población sobre el Desarrollo Social y Económico	1986
151) ROSENBERG, M.B.	"Can Democracy Survive the Democrats? From Transition to Consolidation in Honduras."	1986
152) ROSENBERG, Mark SHEPHERD, Phil	Honduras Confronts Its Future: Contending Perspectives on Critical Issues (Westview)	1986
153) RUSCH, W.H. VITALE, J.J.	INCAP/ROCAP Regional Nutrition Project: Mid-Project Evaluation	1978
154) SANDOVAL, M.A. TROWBRIDGE, FL	Project Honduras - AID, Summary of Recommendations	1979
155) SECRETARIA DE HACIENDA	Informe Consolidado (Enero-Marzo)	1986
156) SERVICIO COOPERATIVO INTER-AMERICANO EN SALUD PUBLICA	Breve Descripción de los Proyectos Construidos por el SCISP desde el año de 1943 a la fecha	1961
157) SERVICIO COOPERATIVO INTER-AMERICANO EN SALUD PUBLICA	Infantile Paralysis	1956
158) SERVICIO COOPERATIVO INTER-AMERICANO EN SALUD PUBLICA	Informe Anual 1955-1956	1955

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
159) SERVICIO COOPERATIVO INTER-AMERICANO EN SALUD PUBLICA	Informe Anual 1954-1955	1955
160) SERVICIO COOPERATIVO INTER-AMERICANO EN SALUD PUBLICA	Informe Anual 1955-1956	1956
161) SERVICIO COOPERATIVO INTER-AMERICANO EN SALUD PUBLICA	Lista de Proyectos Realizados por el "SCISP" desde su Iniciación	1961
162) SERVICIO COOPERATIVO INTER-AMERICANO EN SALUD PUBLICA	Sanidad y Salud Pública en Honduras. Primeros Seis Años del Servicio Cooperativo Inter-Americano de Salud Pública	1948
163) SPECKHARD, M.	Foreign Trip Report (AID/RSSA): Evaluation of the Sterilization Program of the ASHONPLAFA, Honduras, December 7-20, 1981	1982
164) STANFIELD, D., et al.	Analysis of Nutrition-Related Activities in Honduras (Community Systems Foundation)	1979
165) STIVERS, J. and ROBERTS, F.C.	Vector Control in Honduras: A Report on a Field Trial of Programmatic Environmental Assessment	1981
166) SUAZO, Margarita y APLICANO, Rodolfo	Población y Desarrollo Socio Económico en Honduras	1984
167) USAID	Approaches to the Policy Dialogue	1982
168) USAID	Blueprint for Development. The Strategic Plan of the Agency for International Development	no date
169) USAID/APPLIED COMMUNICATION TECHNOLOGY	The Mass Media and Health Practices Evaluation in Honduras: The Final Report of the Major Findings	1985
170) USAID/ASHONPLAFA	Convenio de Proyecto - Project Agreement	1982
171) USAID/ASHONPLAFA	Family Planning Service Delivery Support Project	1984
172) USAID/ASHONPLAFA	Memorandum - Evaluation of DE Program	1982

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
173) USAID/ASHONPLAFA	Memorandum - Evaluation of the Sterilization Program	1982
174) USAID/ASHONPLAFA	Project Evaluation Summary	1982
175) USAID/ASHONPLAFA	Project Evaluation Summary, Asociación Hondureña de Planificación Familiar	1981
176) USAID/ASHONPLAFA	Stronger Management - Financial Controls	1984
177) USAID/AUDITOR GENERAL	Audit Report, National Nutrition Planning Project No. 522-0124, USAID/Honduras	1981
178) USAID/AUDITOR GENERAL	Audit Report, Honduras Rural Water and Sanitation Systems 522-0166	1986
179) USAID/HONDURAS	An Assessment of the Honduran MCH/FP Program and Recommendations for a USAID Project Paper	1975
180) USAID HONDURAS	Assessment of the Public Health Sector in Honduras (1975-1985)	1980
181) USAID/HONDURAS	Audit Report, P.L. 480, Title II, Food Programs, USAID/Honduras	1980
182) USAID/HONDURAS	Audit Report. USAID/Honduras P.L. 480, Title II, Food Programs, CARE and Catholic Relief Services	1975
183) USAID/HONDURAS	Briefing Book on the U.S. AID Program to Honduras	1980
184) USAID/HONDURAS	Capital Assistance Paper. Honduras Malaria Eradication	1965
185) USAID/HONDURAS	Country Development Strategy Statement. FY 1986-90	1984
186) USAID/HONDURAS	Directory of Training Participants USAID/Honduras 1952-1969	1970
187) USAID/HONDURAS	Evaluación del Proyecto de Agua y Saneamiento Rural en Honduras	1986
188) USAID/HONDURAS	FY 1988 Action Plan for Honduras	1986

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
189) USAID/HONDURAS	Grant Agreement, Family Planning Service Delivery - Project No. 522-0225	1984
190) USAID/HONDURAS	Health Sector I PP Amendment	1984
191) USAID/HONDURAS	Honduras Integrated Rural Health/Family Planning Services, 522-0130	1976
192) USAID/HONDURAS	Honduras: Malaria Eradication Loan Completion Report	1971
193) USAID/HONDURAS	Honduras: Project Paper, Health Sector Planning	1979
194) USAID/HONDURAS	Honduras Project Paper, Rural Water and Sanitation	1980
195) USAID/HONDURAS	Honduras Project Paper, Rural Water and Sanitation Systems (Amendment)	1983
196) USAID/HONDURAS	Integrated Rural Health - Regular Evaluation	1981
197) USAID/HONDURAS	Integrated Rural Health Services (evaluation)	1980
198) USAID/HONDURAS	International Nursing Review	1986
199) USAID/HONDURAS	Loan Authorization. Honduras Malaria Eradication	1968
200) USAID/HONDURAS	Malaria Loan, 522-L-014	1969
201) USAID/HONDURAS	Maternal Child Health	1971
202) USAID/HONDURAS	Maternal Child Health - Funding of the Project	1974
203) USAID/HONDURAS	Maternal Child Health - GE Tempo Study	1974
204) USAID/HONDURAS	Maternal Child Health Program - Present and Future Staffing needs for the Program	1972
205) USAID/HONDURAS	Maternal Child Health Program - Project Appraisal Report - Contraceptives	1971
206) USAID/HONDURAS	Memorandum - Planning for Implementation of Expanded Community Based Distribution of Contraceptives	1981

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
207) USAID/HONDURAS	Non Capital Project Paper, Maternal Child Health	1968
208) USAID/HONDURAS	Non Capital Project Paper, Maternal Child Health	1969
209) USAID/HONDURAS	Non Capital Project Paper, Maternal Child Health	1970
210) USAID/HONDURAS	Non Capital Project Paper, Maternal Child Health	1971
211) USAID/HONDURAS	Participants Directory Supplement, USAID Honduras 1970-74.	1975
212) USAID/HONDURAS	Participants Directory Supplement. USAID Honduras 1974-77	1978
213) USAID/HONDURAS	Policy Paper - Health Assistance	1982
214) USAID HONDURAS	Project Appraisal Report, Maternal Child Health	1972
215) USAID/HONDURAS	Project Appraisal Report, Maternal Child Health	1973
216) USAID/HONDURAS	Project Appraisal Report, Maternal Child Health	1975
217) USAID/HONDURAS	Project Evaluation Summary, Health Sector Planning	1981
218) USAID/HONDURAS	Project Evaluation Summary, Improvement of Maternal and Infant Diet (PROALMA)	1984
219) USAID/HONDURAS	Project Evaluation Summary, Integrated Rural Health Services	1981
220) USAID/HONDURAS	Project Evaluation Summary, Integrated Rural Health Services (0130)	1979
221) USAID/HONDURAS	Project Evaluation Summary, Integrated Rural Health Services	1978
222) USAID/HONDURAS	Project Evaluation Summary (PES), Part I - Rural Water and Sanitation	1983

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
223) USAID/HONDURAS	Project Evaluation Summary, P.L. 480 Title II, Food for Peace	1981
224) USAID/HONDURAS	Project Evaluation Summary, P.L. 480 Title II, Food for Peace	1984
225) USAID/HONDURAS	Project Evaluation Summary, P.L. 480 Title II Food Program	1985
226) USAID/HONDURAS	Project Paper, Changing Maternal/Weaning Practices	1981
227) USAID/HONDURAS	Project Paper, Health Sector I	1980
228) USAID/HONDURAS	Project Paper, Honduras-Nutrition	1976
229) USAID/HONDURAS	Quarterly Report, Rural Water and Sanitation	1983
230) USAID/HONDURAS	The Honduran Family Planning Association Needs Stronger Management and Financial controls, Audit Report No. 1-522-84-7.	1984
231) USAID/INTERNATIONAL NUTRITION COMMUNICATION SERVICE	Evaluation Report of the Breastfeeding Support Project PROALMA (Proyecto de Apoyo a la Lactancia Materna)	1985
232) USAID/REGIONAL OFFICE FOR CENTRAL AMERICA & PANAMA	Project Paper. ORT, Growth Monitoring and Education	1984
233) USAID/REGIONAL OFFICE FOR CENTRAL AMERICA & PANAMA	Project Paper. Regional Nutrition Technical Outreach	1981
234) USAID/REGIONAL OFFICE FOR CENTRAL AMERICA AND PANAMA	Project Paper. Technical Support for Food Assistance Programs	1984
235) USAID/WESTINGHOUSE ELECTRIC CORPORATION HEALTH SYSTEMS	First External Assessment Health Sector I - Honduras	1984
236) U.S. DEPARTMENT OF HEALTH EDUCATION & WELFARE/ PUBLIC HEALTH SERVICE	Malaria Eradication Program Information	1971

<u>AUTHOR</u>	<u>TITLE</u>	<u>YEAR</u>
237) U.S. DEPARTMENT OF HEALTH EDUCATION & WELFARE/ PUBLIC HEALTH SERVICE	10 Years of Cooperative Health Programs in Latin America	1952
238) UNICEF	Reports to the Executive Board, 1946-1978	various dates
239) UNICEF/ MINISTERIO DE SALUD PUBLICA	Final Report. Evaluation of the Supply System of Oral Rehydration Salts in Honduras	1984
240) WOOLLEY, P. et al.	Syncrisis, The Dynamics of Health: Volume II - Honduras (U.S. Department of Health, Education and Welfare)	1972
241) ZELAYA, J.E.	La Terapia de Rehidratación Oral. Evaluación de la Experiencia en Honduras	1985