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UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D. C. 20523

NICARAGUA

PROJECT PAPER

DECENTRALIZED HEALTH SERVICES

AID/LAC/P-816

PROJECT NUMBER: 524-0327

UNCLASSIFIED

Agency for International Development
PROJECT DATA SHEET

1. Transaction Code: [A] A = Add, C = Change, D = Delete — Amendment No. _____

Document Code: 3

2. Country/Entity: Nicaragua

3. Project Number: 524-0327

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5. Project Title (Maximum 40 characters): Decentralized Health Services

6. Project Assistance Completion Date (PACD): MM 0 | 3 | DD | 3 | 1 | YY | 9 | 8 |

7. Estimated Date of Obligation (Under "B" below, enter 1,2,3, or 4)
A. Initial FY | 9 | 3 | B. Quarter [2] C. Final FY | 9 | 6 |

8. Costs $000 or Equivalent $ 1 =

A. Funding Source	First FY 93			Life of Project		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. TOTAL
AID Appropriated Total	7,921		7,921	22,000		22,000
(Grant)	(7,921)		(7,921)	(22,000)		(22,000)
(Loan)						
Other U.S. 1.						
Other U.S. 2.						
Host Country		19	19		7,400	29,400
Other Donor(s)						
TOTALS	7,921	19	7,940	22,000	7,400	29,400

9. Schedule of AID Funding ($000)

A. Appropriation	B. Primary Purpose	C. Primary Tech. Code 1. Grant	C. 2. Loan	D. Obligations to Date 1. Grant	D. 2. Loan	E. Amount Approved This Action 1. Grant	E. 2. Loan	F. Life of Project 1. Grant	F. 2. Loan
(1) DAF						4,000		15,279	-
(2) HE						1,000		1,000	
(3) POP						1,200		4,000	
(4) CS						1,721		1,721	
TOTALS						7,921		22,000	-

10. Secondary Technical Codes (maximum 6 codes of 3 positions each)

11. Secondary Purpose Code

12. Special Concerns Codes (maximum 7 codes of 4 positions each)
A. Code
B. Amount

13. Project Purpose (maximum 480 characters)

To improve the management and increase the effectiveness of and access to Nicaragua's public health resources, and to explore and encourage alternate sources of financing to the sector.

14. Scheduled Evaluations
Interim | 0 | 6 | (MM YY) | 9 | 5 | Final | 1 | 1 | (MM YY) | 9 | 7 |

15. Source/Origin of Goods and Services
[X] 000 [ ] 941 [X] Local [X] Other (specify) CACM

16. Amendments/Nature of Change Proposed (This is page 1 of a ___ page PP Amendment)

Approved by — Signature: [signature]
Title: Acting Director USAID/Nicaragua
Date Signed: 3/12/93

DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

PROJECT AUTHORIZATION

Name of Country: Nicaragua

Name of Project: Decentralized Health Services

Number of Project: 524-0327

1. Pursuant to Section 104 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Decentralized Health Services Project for Nicaragua involving planned obligations not to exceed Twenty-two Million United States Dollars ($22,000,000) in grant funds over the period from the date of obligation through a Project Assistance Completion Date of March 31, 1998, subject to the availability of funds in accordance with the AID/OYB allotment process, to help in financing foreign exchange and local currency costs for the project.

2. The project consists of four major components: one, the Accelerated Start Component, which will provide urgently required commodities, training and technical assistance during the Project's first year; two, the Maternal Health and Child Survival Component, which will support preventive maternal health and child survival interventions in five focus SILAIS (health districts); three, the Management and Financial Decentralization Component, which will develop and implement a Financial Management System and improve access to and the use of information technology in all 19 of Nicaragua's SILAIS; and four, the Alternate Sources of Financing Component, which will help the Government of Nicaragua's Ministry of Health explore and test cost containment and cost recovery mechanisms. USAID will implement these activities pursuant to a Project Grant Agreement with the Government of Nicaragua and subsequent amendments thereto.

Mark I. Silverman
Acting Mission Director
USAID/Nicaragua

3/12/93

DECENTRALIZED HEALTH SERVICES PROJECT

PROJECT NUMBER 524-0327

THIS PROJECT PAPER COMPLIES WITH CURRENT AGENCY GUIDELINES ON THE METHODS OF FINANCING AND IMPLEMENTATION AND HAS PROVIDED FOR ADEQUATE AUDIT COVERAGE IN ACCORDANCE WITH THE PAYMENT VERIFICATION POLICY IMPLEMENTATION GUIDANCE.

RICHARD W. LAYTON
CONTROLLER

DATE: 3/4/93

DECENTRALIZED HEALTH SERVICES PROJECT PAPER

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LIST OF ACRONYMS AND ABBREVIATIONS

A.I.D.	U.S. Agency for International Development
ARI	Acute Respiratory Infections
ASDI	Swedish International Development Agency
ASF	Alternate Sources of Financing
ASC	Accelerated Start Component
CDC	Centers for Disease Control
CDSS	Country Development Strategy Statement
CHWs	Community Healthworkers
CNS	Comisión Nacional de SILAIS
COP	Chief of Party
CY	Calendar Year (January 1 - December 31)
DANIDA	Danish International Development Agency
DHS	Decentralized Health Services Project
EOPS	End-of-Project Status Indicators
EPI	Expanded Program of Immunizations
FISE	Fondo de Inversion Social de Emergencia (Emergency Social Investment Fund)
FHS	Family Health Survey
FMS	Financial Management System
FY	Fiscal Year (October 1 - September 30)
GEMS	General Management Skills
GON	Government of Nicaragua
HIT	Health Intervention Training
HPT	Health Promotion Training
IBRD	International Bank for Reconstruction and Development (the World Bank)
IDB	Inter-American Development Bank
IEC	Information, Education, and Communication
IFB	Invitation for Bids
IMR	Infant Mortality Rate
IPPF	International Planned Parenthood Federation
ISU	Information Systems Unit
LAC	A.I.D.'s Bureau for Latin America and the Caribbean
LOP	Life-of-Project

LIST OF ACRONYMS AND ABBREVIATIONS (CONT.)

M&F	Management and Finance Specialist
MFD	Management and Financial Decentralization
MH/CS	Maternal Health and Child Survival
MiFin	GON Ministry of Finance
MINSA	GON Ministry of Health
MIS	Management Information System
MOU	Memorandum of Understanding
NPD	New Project Description
OPG	Operational Program Grant
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
OVI	Objectively Verifiable Indicator
PAAD	Program Assistance Approval Document
PACD	Project Assistance Completion Date
PAHO	Pan American Health Organization
PASA	Participating Agency Service Agreement
PD&S	Program Development and Support Funds
PMs	Person-Months
Profamilia	Asociacion Pro-Bienestar de la Familia Nicaraguense
PSFMP	Public Sector Financial Management Project
PVO	Private Voluntary Organization
PY	Project Year
SAA	SILAIS Administrative Assistant
SILAIS	Sistemas Locales de Atencion Integral en Salud (Local Integrated Health Care Systems)
STD	Sexually Transmitted Disease
TA	Technical Assistance
TAACS	Technical Assistance in AIDS and Child Survival
T&O	Training and Outreach Specialist
UNDP	United Nations Development Program
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children's Fund
UPS	Uninterruptible Power Supply
USAID	Agency for International Development's Mission to Nicaragua
USG	United States Government
USPHS	United States Public Health Service
WHO	World Health Organization

SECTION I: SUMMARY AND RECOMMENDATION

A. The Problem

Fifteen years of economic deterioration and political turmoil have left Nicaragua's health care system unable to meet the needs of the population it serves, particularly those of poor women and children. Preventable or readily curable ailments such as acute diarrheal and respiratory illnesses are major causes of death and illness among infants and children under five years of age. Significant overall levels of malnutrition exacerbate pediatric morbidity and mortality while the prevalence and duration of breastfeeding is relatively low. Maternal health problems are a major cause of high rates of maternal, neonatal and perinatal morbidity and mortality, while periodic outbreaks of preventable diseases continue. The deficient management capabilities of the public health care system create major inefficiencies in both scope and quality of services, as well as excessive costs. The system cannot be sustained without continuous major inputs of donor resources into recurrent costs.

B. Brief Description of the Project

To address these problems, the Government of Nicaragua (GON), working through its Ministry of Health (MINSA), is establishing a health care system that puts the highest priority on preventive and primary health care and addresses the principal causes of infant, child, and maternal morbidity and mortality. MINSA wants to foster high levels of community participation, extend coverage, and decentralize the administration of health interventions through *Sistemas Locales de Atención Integral en Salud* (Local Integrated Health Care Systems, or "SILAIS") so that its educational activities, oral rehydration therapy programs, and immunization interventions can reach as many people as possible. As evidenced by its recent policy statements, MINSA is fully committed to the decentralization of services through the SILAIS structure; indeed, the decentralization process is already well underway. Yet the Ministry lacks the well trained and adequately supervised personnel, sufficient financial resources, and management skills needed to organize efficient and effective efforts in primary health care, to supervise personnel, and to rationalize use of human resources. MINSA plans to address these problems by decentralizing the management and delivery of health services to the SILAIS, offering substantial amounts of technical assistance, training and essential commodities to those SILAIS, and expanding outreach efforts within the broader community. MINSA's objective is to bring about a substantial reduction of morbidity and mortality among pregnant and lactating women and children under the age of five.

To support these efforts, USAID/Nicaragua and MINSA have designed the Decentralized Health Services (DHS) Project, a US $29.4 million ($22 million A.I.D., $7.4 million GON) five-year effort that will consist of four major components as set forth below. The **goal** of DHS will be to improve maternal and child health; its **purpose** will be to improve the management and increase the effectiveness of and access to Nicaragua's public health resources, and to explore and encourage alternative financing to the sector.

Through the DHS Project, USAID will help MINSA carry out the following interrelated components:

1. Accelerated Start Component (ASC)

The immediate health needs of Nicaragua's people require prompt action. DHS will address this challenge through its Accelerated Start Component (ASC). Through the ASC, USAID and MINSA will begin to provide assistance, particularly in the area of maternal health and child survival (MH/CS), in the shortest reasonable time.

The Accelerated Start Component is to be implemented through two mechanisms. First, USAID will, within three months of DHS's authorization, contract with a U.S. Gray Amendment (minority owned) firm to:

- Conduct a human resources assessment of personnel actually or potentially available at both the central level and in the five SILAIS on which MINSA will focus the maternal health and child survival (MH/CS) efforts supported by DHS.[1] This assessment will confirm the numbers of personnel available and the skills they possess, and will make recommendations for the content of training courses.

- Survey ongoing and proposed activities of other donors in the sector. This will provide baseline information to be used by the Comisión Nacional de SILAIS (CNS) and MINSA's Office of External Cooperation, which are charged with coordinating donor assistance to the health sector.[2]

- Review MINSA's plans for the introduction of cost containment and cost recovery measures and work with MINSA, other cognizant GON institutions, and USAID to devise specific, written policies to put these plans into action. This assistance will, among other benefits, help the GON fulfill the health sector policy objectives it has set as part of the FY 1993-95 P.L. 480 Title III Food for Development Program.

- Design a methodology for gathering, and then work with MINSA to collect, baseline data on the End-of-Project Status Indicators (EOPS) and Objectively Verifiable Indicators (OVIs) against which the success of the DHS Project will be evaluated.

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[1] As described below, these five SILAIS will be Matagalpa, Jinotega, and the three in the Managua Region.

[2] The Project Grant Agreement for DHS will require that, before any funds are disbursed under this project, MINSA add all the principal donors active in the health sector - USAID, the Inter-American Development Bank, the World Bank, the Pan American Health Organization, Italy, Spain, Sweden, Germany, and others - to the membership of this Commission. These other donors will agree to participate by signing a Memorandum of Understanding (MOU) with USAID.

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Second, USAID will execute a Participating Agency Service Agreement (PASA) with the U.S. Public Health Service (USPHS) to procure all project-funded offshore commodities (other than contraceptives) for MINSA. The USPHS will work throughout the life of the project. Under the Accelerated Start component, the USPHS will:

- Conduct site visits to verify the commodity requirements identified during project design for the five focus SILAIS and propose such modifications as may be necessary to the list included in this PP.[3]

- Order those commodities (other than contraceptives, which will be procured through AID/Washington) needed to launch MH/CS efforts in the five focus SILAIS.

- Arrange for or carry out with its own personnel any short-term technical assistance (TA) and training needed to instruct MINSA personnel in the proper use of the commodities and technologies provided.

These efforts will help the long-term TA team to begin implementation of the MH/CS component immediately upon its arrival, and provide MINSA with an important head start on mobilization of the other DHS components.

2. Maternal Health and Child Survival Component

The Maternal Health and Child Survival (MH/CS) component of DHS will be implemented in five of Nicaragua's 19 SILAIS. As its name indicates, this component will principally support MH/CS preventive and primary health care programs. These will include interventions in the following areas: control of diarrheal diseases (CDD), acute respiratory infections (ARI), maternal health (including birth spacing), nutrition education (including growth monitoring and promotion of breastfeeding), and immunizations.[4] To help MINSA implement this component, DHS will fund long-term technical assistance from a U.S. institutional contractor chosen through full and open competition; local, U.S., and third country training, and commodity procurement. The immunization subcomponent will be implemented through a project-funded buy-in to the ongoing multi-donor Expanded Program of Immunizations (EPI).[5]

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[3] During PP design, the commodity requirements for the five focus SILAIS were identified through extensive discussions with MINSA, review of secondary sources, and selected site visits. USPHS personnel will confirm these estimates by visiting all five focus SILAIS.

[4] The DHS Project will support MH/CS interventions only in these priority areas. At the same time, individual SILAIS will retain the flexibility to respond (within MINSA norms) to other major health problems in their areas using funds from other sources.

[5] USAID currently supports to this program through an annual buy-in to the LAC Regional EPI Project (No. 598-0786) implemented by PAHO. This buy-in is funded by USAID's bilateral EPI Project (542-0321). This subcomponent of DHS will replace the bilateral EPI Project, the PACD for which is September 30, 1993.

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The five SILAIS in which the MH/CS component will be implemented are the two in Region VI (Matagalpa and Jinotega) and the three in the Managua Region. This differs from the list included in the New Project Description (NPD) approved by AID/Washington for DHS, which listed the five SILAIS in Regions I (Estelí) and II (León) as being among those most in need of MH/CS interventions. During PP design, however, USAID found that Regions I and II are now being assisted by a Swedish-funded program with coverage similar to that to be provided by DHS. Moreover, MINSA has been pressing for inclusion of the three SILAIS in Managua in DHS, since the incidence of health problems in Managua is among the highest - and most politically sensitive - in the country. Thus, USAID and MINSA have elected to replace the SILAIS of Regions I and II with the three in Managua. By working in these five SILAIS, the MH/CS component of DHS will provide health coverage for between 57-62% of the country's population.[6]

3. Management/Financial Decentralization Component

There is a consensus among the experts who have studied Nicaragua's health system that the country is spending a great deal in both money and volunteer effort on health delivery, yet achieving results that are well below what could be expected. Although a portion of this cost-ineffectiveness is the result of conscious choices made by the prior government, a major part of the problem also lies in MINSA management and administration: lack of needed health and management information; inadequate inventory control; inadequate training of personnel; and an imbalance in the allocation of funds for salaries and essential operating expenses. Related deficiencies also exist in such areas as educational outreach.

To address these problems, the Management/Financial Decentralization (MFD) component will provide technical assistance and training in management, administrative, financial, and information skills. This component, which will be carried out with the long-term technical assistance of the same firm that will help MINSA implement the MH/CS component, will be implemented in all 19 of Nicaragua's SILAIS in close coordination with other donors. The primary focus will be on management improvement and training at the SILAIS level; assistance to the central level will be provided only insofar as is necessary to further the decentralization process. DHS-funded training will emphasize local programming, decentralized decision-making, the design and installation of management information systems (MIS), and logistics. These efforts will better equip the SILAIS to participate effectively in a decentralized health care system.

4. Alternate Sources of Financing Component

Although many of the DHS Project elements should reduce, rather than increase, MINSA's recurrent costs by introducing greater efficiencies of operation, the sustainability of MINSA's

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[6] USAID's FY 1993 Congressional Presentation lists Nicaragua's population as 3,770,000. However, the 1992 World Population Data Sheet published by the Population Reference Bureau, widely regarded as a definitive source, lists the population as 4.1 million.

health delivery system is very much in question. The above interventions notwithstanding, MINSA will continue to experience difficulty in providing high quality health services - especially primary care, which has been low on its list of priorities - because of its limited financial resources.

In 1992, MINSA consumed 16.3% (approximately US$ 78.8 million) of the GON's annual budget.[7] This percentage is not likely to grow in the near- to medium-term. Some 88% of these expenditures can be described as recurrent. Only 23.5% of them were devoted to primary care in 1992.[8] The system is able to maintain its present, inadequate level of service only through significant subsidies from external donors. While reliable figures on actual donor support to MINSA are difficult to obtain, the best estimates suggest that MINSA receives the equivalent of another $40 million annually (half again as much as its own annual budget) in external assistance, some 80% of which goes for recurrent costs.

The situation is simply not sustainable. Accordingly, the fourth component of DHS will help MINSA test, refine, and put into place "Alternate Sources of Finance" (ASF) to help it shoulder its huge recurrent cost burden and fulfill its pledge to devote more resources to primary care. The ASF component will work with MINSA and the SILAIS to:

- Develop less expensive ways of providing excessively costly services and interventions, and put these alternatives into practice;
- Help MINSA develop and put into place a new fee-for-service schedule;
- Conduct studies to identify new sources of income; and
- Carry out seminars to build consensus within MINSA in support of these policy measures.

The cost **containment** methods DHS will promote may include increased use of generic drugs, the introduction of improved storage systems, increasing the role of non-physicians in the primary health care system, providing employee benefits in cash rather than in-kind, and privatizing support services (e.g. laundry and food). The cost **recovery** methods the project will promote may include special, dedicated taxes on liquor and cigarettes, the implementation of a sliding fee scale based in part on ability to pay, and allowing MINSA or the SILAIS to retain and manage revenues collected locally. The choice of methods to be promoted will be informed by a series of studies that the long-term institutional contractor will help MINSA undertake.

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[7] República de Nicaragua, Ministerio de Finanzas. "Presupuesto General de la República, 1992", pp. 25 and 101.

[8] In the proposed 1993 budget submitted to the National Assembly as design of DHS was completed, that percentage had risen to over 39%, partly in response to the policy agenda developed by the GON and USAID as part of the FY 1993-95 P.L. 480 Title III Food for Development Program.

5. Relationship to Other Donor Programs

This Project Paper has been prepared in close consultation with MINSA and other donor agencies active in the health sector in Nicaragua; indeed, the shape of DHS (and particularly its geographic focus) stems in large part from these consultations. During PP design, USAID, MINSA, and the principal other donors reached informal agreement on a de facto division of labor that will allow MINSA to launch vigorous primary health care initiatives throughout Nicaragua:

- Sweden is funding a project (to be implemented by PAHO and UNICEF) that will support development of the six SILAIS in Regions I, II, and the Región Autónoma Atlántico Sur (Southern Atlantic Autonomous Region, or RAAS).

- The World Bank is supporting MH/CS efforts in Regions IV, V, and the Región Autónoma Atlántico Norte (Northern Atlantic Autonomous Region, or RAAN). This effort will encompass seven of Nicaragua's 19 SILAIS. Additionally, the Bank will assist MINSA's efforts in the areas of (1) procuring and managing pharmaceuticals; (2) reproductive risk and family planning; (3) human resources; and (4) overcoming policy constraints.[9]

- The Inter-American Development Bank (IDB) launched a three-year project with MINSA in December 1992. This project is to study the general legal framework that now restricts MINSA from developing alternate sources of funding; carry out more precisely focused studies of the feasibility of introducing patient fees and privatizing hospital services; and work with MINSA hospitals to improve their financial management and procurement procedures.

- The Spanish Development Agency is helping MINSA to develop a diagnostic of its existing health statistics information system.

- The Emergency Social Investment Fund (FISE) supported by USAID, the IDB, the United Nations Development Program (UNDP), and the IBRD will rehabilitate existing health and education facilities.

- The United Nations Fund for Population Activities (UNFPA) has been providing condoms, oral contraceptives, and inter-uterine devices (IUDs) to MINSA since 1981. In 1993, it will donate $375,000 of contraceptives, and plans to assist MINSA in introducing Norplant implants into its family planning program. The UNFPA also plans to work closely with MINSA to strengthen the management of its family planning program and to provide technical training for service providers. In collaboration with USAID/Nicaragua and the Centers for Disease Control (CDC), the

[9] "Ayuda Memoria: Mision Proyecto Sector Salud (Junio 15 - 26, 1992)."

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UNFPA will also assist MINSA in the implementation of a computerized contraceptive commodity management information system.

Coordination with the organizations listed above, and with new efforts that may emerge, will be an ongoing process. As noted above, one of the tasks of the Gray Amendment firm under the Accelerated Start Component will be to compile and submit a complete list of those efforts to USAID, MINSA, and the other members of the Comisión Nacional de SILAIS.

C. Recommended Action

The USAID Project Committee for DHS reviewed this PP on August 27, 1992. With certain minor changes summarized in the attached Action Memorandum to the Acting Mission Director, the Committee found the project design to be administratively, economically, financially, technically, and socially sound. The Committee therefore recommends that USAID authorize the grant assistance described in this Project Paper for a maximum of $22.0 million. An initial obligation of $7,220,638 composed of $4,000,000 in Development Assistance Funds earmarked for Child Survival; $1,720,638 in Child Survival funds, $1,000,000 in Health funds, and $500,000 from the Population account will be made in FY 1993. Additionally, USAID will transfer $700,000 in FY 1993 Population funds to AID/Washington for the purchase of contraceptives through the central Contraceptive Procurement Project. USAID expects that subsequent incremental obligations totalling $14,079,362 will be made from the appropriate Development Assistance accounts in FYs 1994-96. The GON will contribute the local currency equivalent of at least $7.4 million in cash and in-kind over the Life of Project (LOP) beginning in FY 1993. Thus, the total LOP cost from all sources is estimated at $29.4 million. The Project Assistance Completion Date (PACD) will be March 31, 1998.

SECTION II: PROJECT BACKGROUND

A. Scope of Nicaragua's Health Problem

Fifteen years of economic deterioration and political turmoil have left Nicaragua's health care system unable to meet the needs of the population it serves, particularly those of poor women and children. Preventable or readily curable ailments such as acute diarrheal and respiratory illnesses are major causes of death and illness among infants and children under five years of age. Significant overall levels of malnutrition exacerbate pediatric morbidity and mortality while the percentage of mothers who breastfeed their children is relatively low. Maternal health problems are a major cause of high rates of maternal, neonatal and perinatal morbidity and mortality, while periodic outbreaks of preventable diseases continue. The deficient management capabilities of the public health care system create major inefficiencies in both scope and quality of services, as well as excessive costs. The system cannot be sustained without continuous major inputs of donor resources into recurrent costs.

These systemic shortcomings have led to precarious health conditions for Nicaragua's most vulnerable groups: infants, children, and pregnant and lactating women. According to MINSA data, the Infant Mortality Rate (IMR) of 72/1000 live births (as of 1989) remains one of the highest in Central America, despite declining IMR trends in the preceding decades.[1] Though reliable data are scarce, 79 percent of infant mortality is attributed to three causes: acute diarrheal and respiratory diseases and perinatal infection. The highest infant mortality rates are in Region VI, the SILAIS of Matagalpa and Jinotega, where the principal cause of infant mortality is diarrheal disease. MINSA's Master Plan notes further that perinatal causes lead the list in Regions I, II and IV, while pneumonia is the leading cause of infant mortality in Region III and the three SILAIS of the Managua Region: Occidental (which reaches to the Pacific coast), Oriental (which covers substantial rural areas east of the city), and Central.

The child mortality rate[2] in Nicaragua, estimated at 40/1000, is also significantly higher than that of its neighbors. In this group, too, the major causes of mortality are diarrheal and other intestinal infections and acute respiratory infections. Malnutrition, however, is generally recognized to be the single most important underlying cause of infant and child mortality, since it exacerbates health problems that might otherwise be overcome by improved health status.

Malnutrition is pervasive in Nicaragua, resulting in stunting among school age children. About 21 percent of under six year old children are moderately malnourished and 18 percent

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[1] IMR was estimated to be 139 per 1000 live births in the 1960s. It dropped to 95 in the late 1970s, and to 78 in the early 1980s.

[2] Among children more than one but less than five years of age.

are seriously malnourished.[3] Sistema de Vigilancia Epidemiologica Nutricional (SVEN) data for the first and second quarters of 1991 on children weighed in growth monitoring programs in health facilities show at-risk levels of 34 percent and malnourished (under two standard deviations from the mean) at 13 percent. There is no current national survey data on preschool children, nor is the available facility data sufficiently disaggregated to reveal which age groups are most vulnerable.[4]

It is likely that many deaths attributed to other causes actually occur because of poor feeding practices during weaning and during illnesses (particularly diarrhea) when anorexia is also present. Exclusive breastfeeding is rare: infants are given liquids (which may be contaminated) during the first five months of their lives, a period when exclusive breastfeeding is recommended. The duration of breastfeeding also tends to be short, especially in urban areas: reports state that the average duration of breastfeeding in Nicaragua is six months.[5]

Inadequate detection of maternal health problems during the prenatal period also contributes to high rates of neonatal and perinatal mortality and to a 10 percent incidence of low birthweight (less than 2.5 kilograms). Moreover, mothers themselves are at serious risk: a recent study estimated the maternal mortality rate to be 159/100,000 live births, and concluded that "Nicaraguan women face high reproductive risk as a consequence of high fertility and low birth spacing."[6] High maternal mortality occurs principally among women at reproductive high risk, that is, among women who have many closely-spaced pregnancies (the average fertility rate is 5.9 for women in reproductive age) and among those who are young (under 19 years) or older (over 35 years) mothers. Regions I, V and VI, together with the Atlantic coastal zones, have the highest rates of maternal mortality in the country. While it is well known that short pregnancy intervals contribute to infant and maternal mortality, fertility rates in Nicaragua are among the highest in Latin America. A large percentage of women continue to give birth at home: the MINSA document Intervenciones a la Mujer notes that 65 percent of all births currently occur at home, 14 percent of them without the assistance of doctors, nurses, or even parteras (traditional midwives). Further, Nicaraguan women suffer from high levels of sexually transmitted diseases (STDs), which, in addition to their immediate deleterious effects, adversely influence pregnancy outcomes, and contribute to uterine cancer and infertility.

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[3] MINSA, "Salud: Metas, Estratégias y Prioridades de Recursos Externos", February 1992.

[4] This is likely to be weaning age. In the available data, the only categories used are "Less than 1 year of age" and "1-5 years of age".

[5] In El Salvador, the average duration of breastfeeding is twelve months; in Honduras, eleven months.

[6] The World Bank, "Nicaragua's Health, Nutrition and Education: Issues and Options", November 22, 1991, p. 2.

B. Limitations on MINSA's Ability to Respond

There is a consensus among those who have studied Nicaragua's health system that although the country is spending a great deal in both money and volunteer effort on health programs, it is achieving results well below what should be expected. The picture is by no means entirely negative; there are some major constructive aspects to MINSA's performance. Health facilities serve an estimated 70 percent of the population; another 15 percent are estimated to have access to community health workers (CHWs); and the remaining 15 percent have some sporadic coverage through immunization and cholera campaigns. Significant progress has been made in the area of recruiting, motivating, and utilizing volunteer community health workers for outreach purposes. Indeed, the majority of the CHWs who will help promote the maternal health and child survival (MH/CS) interventions described in Section III of this Project Paper are already working with MINSA, particularly in its immunization and anti-cholera campaigns.

Preventive services, however (as distinguished from **curative** services), while given high priority in MINSA's written policy statements, are neither sufficiently well-emphasized in practice nor well enough attended by the at-risk population: young children and pregnant and lactating women. Equipment and refresher training to maintain and improve the quality of the services offered are often lacking. Curative sessions tend to dominate the schedules of staff despite the various preventive programs that are also carried out. The system relies heavily on physicians, with a third of the peripheral health posts staffed with doctors instead of nurses. Better utilization of health facilities would result from placing nurses, working together with auxiliaries, in health posts. Studies have shown that auxiliary nurses often work best with the community health workers because they understand and share general community concerns more readily. During project design, doctors were observed working well with CHWs serving as nurse auxiliaries in two medical posts, but often doctors feel underutilized in outposts, do not have adequate contact with the community, and transfer to more medically challenging positions as soon as possible.

Moreover, even the preventive services that have been offered in the health facilities have been "vertical" for the most part, each with its own separate reporting and supervisory system. In particular, the "campaign" approach has been used to deal with immunizations, a crucial activity but one that is markedly more efficient when used to supplement routine vaccination programs. In particular, the failure to integrate maternal health and child survival components at all levels into broader health interventions has unnecessarily increased the human resource requirements of the health delivery system.

The root of the problem is institutional. A portion of it lies in choices that have been made about health care delivery: concentration on curative solutions, often at the secondary and tertiary levels, rather than on preventive programs; delivery of primary care by doctors, rather than less costly personnel; MINSA policies that guarantee jobs in the public health service for all medical school graduates (and the concomitant requirement that all such graduates go to work for MINSA); the indiscriminate use of both prescription and non-

prescription drugs; reliance on "campaigns" of short-lived impact rather than steady-state programs that would have more permanent results if given an equal amount of longer-term attention and support; and the "vertical" orientation of programs to attack specific health problems rather than looking at the entire health spectrum.

Another part of the institutional problem lies in management and administrative shortcomings within Central MINSA and the SILAIS: inadequate inventory control; a lack of supervision throughout the system; inadequate training of personnel; insufficient or unavailable health and management information; allocation of funds into salaries instead of essential operating expenses; and lack of a satisfactory outreach capability in the communities.

During the last decade, MINSA has made sporadic efforts to institute effective health planning and management. However, years of economic crisis and war have inhibited its efforts to develop adequate organizational capacity. There are four major managerial/financial factors that adversely affect the ability of MINSA to respond adequately to the solution of Nicaragua's health problems. These are:

- MINSA management skills are weak at all levels of the health system.
- Information systems do not provide sufficient or timely information on morbidity and mortality, cost, cost-effectiveness, and production of services.
- Directors and administrators of health facilities are not sufficiently trained to seek more efficient ways to utilize available resources.
- MINSA has limited capacity to plan and budget programs and monitor performance. This is caused by centralization of management responsibilities, scarcity of reliable systematic information, lack of specialized economic analysis personnel and inappropriate budgetary procedures.

MINSA also has extensive retraining needs. The development of its staff has been insufficient, mainly due to: a) an imbalance in the human resources structure, with an excess number of physicians; b) a disparity between existing training programs and the country's needs (i.e. for preventive more than curative services); and c) high staff turnover accompanied by a lack of staff with administrative, financial, and management skills. To make the situation worse, few resources are available to meet training needs and to procure the supplies and equipment needed to support primary health care services.

In addition to its organizational and training shortcomings, MINSA's current information technology fails to provide the necessary data for decision-makers. Although MINSA's Planning Unit is charged with coordinating all of its information technology initiatives, and a variety of microcomputers are scattered throughout the institution, their efforts are largely uncoordinated. Computer skills and expertise exist within some of MINSA's organizational units, but have not been adequately integrated into the rest of the Ministry. The SILAIS, on

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the other hand, have no apparent information technology tools, and very limited computer skills and expertise.

With the creation of the SILAIS structure, the central level of MINSA is shifting its role from the direct management of health facilities to that of establishing general policy, setting norms, and monitoring performance. However, MINSA still lacks appropriate tools for monitoring the management process and the impact of its various programs at the SILAIS level, and there is little evidence of the development of supervisory practices that adequately monitor and promote improvements in service delivery.

MINSA has sought to establish norms for the decentralization of its operations and for the technical aspects of service delivery. These have included norms for referral and counter-referral (directing people with health problems to the proper facilities for treatment and follow-up) between health posts/centers and hospitals in the SILAIS areas. Nevertheless. MINSA will be hard pressed to provide the technical assistance and training needed to help the SILAIS staffs develop management, information and integrated service delivery systems. Therefore, despite the existence of basic manuals (designed by the Pan American Health Organization, PAHO) for integrated service delivery and a high degree of theoretical understanding by MINSA medical and center staff of what needs to be done, it would be inaccurate to conclude that actual implementation of an integrated health delivery system has begun.

C. The GON's Response: the SILAIS

In consultation with USAID, the World Bank (IBRD), and PAHO, MINSA has concluded that an intermediary management unit that is functionally closer to the facility level will facilitate the administration and decentralization of health care delivery services. MINSA has therefore adopted the *Sistemas Locales de Atención Integral en Salud* (Local Integrated Health Care Systems, or SILAIS) model as its paradigm for the delivery of health services. The SILAIS structure will permit better analysis and planning of resource allocation for preventive programs and better coordination of patient referral and counter-referral. In addition, the SILAIS will help stimulate active participation by local communities and municipal governments in the search for new resources for health programs.

Analyses sponsored by USAID attest to MINSA's strong commitment to decentralize health service delivery to the SILAIS. A consultancy conducted in early 1992 found that:

> "*There is a strong political will to decentralize [emphasis in original].* The strong commitment at the central and SILAIS level...is truly impressive. ...Although the SILAIS system has officially existed for only a few months, it already is quite clear that important decisions are being made at the SILAIS level and that MINSA intends for the SILAIS directors to make decisions over the use of 15-20% of their budget. Indeed MINSA central level personnel

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have commented upon their surprise at the rapidity with which the SILAIS are developing and maturing."[7]

In June 1992, MINSA formally eliminated its Regional structure. All human and physical resources previously managed at the Regional level were transferred to the SILAIS. As a result of this decentralization process, each individual SILAIS is becoming increasingly able to respond to conditions and needs in its service areas, thus permitting the delivery of both curative and preventive services to be planned and implemented by SILAIS staff in conjunction with inputs from their health centers and posts. This will allow each SILAIS to address existing constraints on health service delivery by analyzing the health status of its service area, and to design annual implementation plans based on the prioritized needs and demands of the local population.

While national norms for technical interventions will continue to be formulated and revised to guide the delivery of services, the delivery of integrated services can be decentralized effectively without disruptive effects or reduced rigor in complying with the technical norms established at the central level. Health intervention priorities are the same in many of the SILAIS (particularly the prevention and treatment of diarrheal and respiratory diseases), but some have special problems which individual SILAIS may be better equipped than the central level to identify and address.[8] One very important advantage that will result (and to some extent has already resulted) from the establishment of the SILAIS structure will be the provision of strong, regular support to community health workers, to whom the SILAIS will be one step closer than were the former Regional offices.

It should be noted, however, that the evolution of relations between MINSA Central and the SILAIS and the transfer of power to the latter in order to effect this decentralization will be complex and frequently politicized, involving a number of potentially incompatible interests: GON and donor; MINSA and the Ministry of Finance (MiFin); local, regional and national. This transfer will also be gradual and non-linear, and will call for patience, tact, and professionalism on the part of all concerned.

The extensive physical health infrastructure now under SILAIS control is impressive. There are a total of 843 health facilities, 690 of which are peripheral units distributed throughout the country roughly according to population. Many of these facilities, however, need renovations and repairs.

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[7] Crane-Cobern, Catherine, et. al. "Analysis of Management and Primary Health Care Constraints within the Context of the SILAIS," February 9, 1992, pp. 2-3.

[8] As noted, however, DHS will support only certain well defined MH/CS interventions and managerial improvements. These interventions, which respond to health problems common to all four focus SILAIS, are described in Section III of this PP. To address special problems unique to their areas, individual SILAIS will rely on their own or other resources.

D. Relationship of Project to USAID Strategy

The DHS Project will directly support USAID's Strategic Objective of improving maternal and child health; indeed, this is the **goal** of the Project. DHS will carry out activities in three of the four areas for A.I.D. support cited in USAID/Nicaragua's recent Country Development Strategy Statement (CDSS): maternal and child health; health care financing; and increasing contraceptive prevalence. Specifically, DHS will support preventive maternal health and child survival interventions in five priority SILAIS, and will provide support to all 19 SILAIS in health care management and financing reform, including the study, development, and testing of cost containment and cost recovery options. In this manner, the project will implement the recommendations of the CDSS in this sector. Water and sanitation efforts will, as stated in the CDSS, depend upon activities undertaken by the Government of Nicaragua and other donors.

The DHS Project will also directly complement and expand the efforts of several ongoing and proposed A.I.D. activities in Nicaragua. For example, A.I.D.-funded grants under the PVO Co-Financing Project (524-0313) in the areas of child survival and (possibly) water supply and sanitation will emphasize preventive primary health care efforts very similar to those promoted by DHS, in most cases in geographic areas outside those in which DHS will operate. Similarly, DHS assistance to MINSA in the procurement and distribution of contraceptives will complement the efforts of USAID's ongoing Operational Program Grant with Profamilia (Project 524-0312), the local International Planned Parenthood Federation (IPPF) affiliate. An A.I.D.-funded grant to Profamilia supports procurement of contraceptives, birth-spacing, and maternal health efforts in Regions IV and VI. DHS will also complement the efforts of the planned Financial Management Reform Project (FMRP). The two projects will not overlap, since FMRP will deal with MINSA central accounting systems as they relate to the Ministry of Finance. They will, however, need to be coordinated, for a portion of MINSA's budgetary and financial information will be generated from the SILAIS.

Finally, the management reforms that DHS will support are consistent with, and will be reinforced by, the policy reform agenda that USAID and the GON are pursuing under the framework of the FY 1993-95 P.L. 480 Title III Food for Development Program. Under that Program, the GON has agreed to devise, present, and then carry out a plan for implementing cost containment and cost recovery measures in the health sector. The GON has also agreed to raise the proportion of the MINSA budget devoted to primary care to 40% by 1995.

E. Conformance with A.I.D. Policy Objectives

The basic objectives of A.I.D.'s health programs as articulated in its health policy paper are: to assist developing countries to become self-sufficient in providing broad access to cost-effective preventive and curative health services, with an emphasis on improving the

effectiveness of health programs through improved program design and management; and to further the implementation and promotion of self-financing health programs. These will be major objectives of the proposed project.[9]

The DHS Project is also consistent with and supportive of three of the ten principles of A.I.D.'s strategy in the 1990s for Central America as articulated in the economic assistance strategy for Central America, 1991-2000. These are:

- A.I.D. will assist the Central Americans to strengthen democratically-elected local and municipal governments through decentralization of real authority and resources.

- A.I.D. will help Central American governments and the private sector improve the effectiveness, efficiency, financing and local control of basic social services, thus increasing access to them and assuring their sustainability. Further improvements in the social service sectors will require increased national financing of public sector programs (in contrast to donor-funded service delivery) and the broadening of private sector financing of quality health and other social service delivery wherever feasible.

- A.I.D. will assist the Central Americans in improving their reproductive health options through the adoption of contraception which promotes safe motherhood through the proper spacing and management of planned pregnancies.

F. Relationship of Project to GON Strategy

The DHS Project will directly support the health and management priorities established by MINSA as articulated in two key planning documents that will guide the development of the Nicaraguan health sector over the next five years. These are the comprehensive five year Health Master Plan and the Local Integrated Health Systems Document. The Master Plan has identified policies, strategic guidelines, programmatic openings and specific project proposals within those guidelines. The Local Health Systems Document addresses the management of, and financing strategies for, the public health system, and creates the local organizations (SILAIS) with which DHS will primarily work.

The priorities identified in the Master Plan most relevant to AID's own strategies and to be supported under the proposed project are:

- Primary health care - with an emphasis on preventive interventions - will be the basis for the organization of the health sector.

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[9] The third area of activity mentioned in the policy paper, "increasing biomedical research and field testing in LDC settings", will not be a focus of this project nor is it an objective of USAID/Nicaragua's current CDSS.

- Services will be organized at the SILAIS level while maintaining an overall national function of guidance and policy making.

- As part of the development of local services, the process of decentralization of budgeting, administration, planning, implementation and evaluation will be strengthened and consolidated at the SILAIS level.

- Special emphasis will be given to priority health problems (diarrhea, acute respiratory illness, high-risk pregnancy), populations at highest risk (pregnant and lactating women, infants and children), and areas and municipalities with the greatest vulnerability.

- MINSA will seek to identify and implement alternative sources of income for decreasing its budget deficit.

- An institutional development program aimed at increasing management capacity at the SILAIS and central levels and improving the efficiency, effectiveness and equity of health services will be established.

These policies, strategies and guidelines are in full conformance with and give top priority to the interventions contained in the DHS Project.

G. Relationship of Project to Other Donor Efforts

This Project Paper has been prepared in close consultation with MINSA and other donor agencies active in the health sector in Nicaragua; indeed, the shape of DHS (and particularly its geographic focus on the SILAIS of Matagalpa, Jinotega, and Managua Occidental, Central, and Oriental) stems in large part from these consultations. During PP design, USAID, MINSA, and the principal other donors reached informal agreement on the following de facto division of labor. This allocation of responsibilities fully complements the efforts of DHS, and will allow MINSA to launch vigorous primary health care initiatives in each of Nicaragua's 19 SILAIS. Annex K to this Project Paper illustrates the thematic and geographic areas in which donors to the health sector plan to be active; the following section provides a narrative summary of their planned activities.

1. Sweden (through PAHO and UNICEF)

Beginning this year, the Swedish International Development Agency (ASDI), working through MINSA, PAHO and UNICEF as implementing agents, is supporting development of the six SILAIS in Regions I, II, and the Región Autónoma Atlántico Sur (Southern Atlantic Autonomous Region, or RAAS). Their $9.0 million, three-year SILAIS Development Project will provide training, technical assistance, and commodities to support activities very similar to those contemplated under DHS (principally primary health care efforts and

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improvements in administrative and managerial procedures). USAID, MINSA, and the donors involved in this project will work through the Comisión Nacional de SILAIS and MINSA's new Office of External Cooperation to assure that the administrative procedures and primary health care interventions it supports are consistent with those to be undertaken by DHS.

2. The World Bank

Beginning in 1993, the World Bank will support MH/CS efforts in Regions IV, V, and the Región Autónoma Atlántico Norte (Northern Atlantic Autonomous Region, or RAAN). This effort will encompass six of Nicaragua's 19 SILAIS.[10] Additionally, the Bank will assist MINSA's efforts to: (1), develop policies on, and design a system for procuring and managing, pharmaceuticals; (2), reduce reproductive risk through hospital-level interventions and family planning activities (e.g., voluntary surgical contraception and the provision of clinical equipment for surgical contraception); (3), develop policies on, and design a system for managing, its human resources; and (4), identify and develop means of overcoming policy constraints (e.g., in the areas of cost recovery, fees, and salaries).[11] The level of funding and planned duration of the Bank's efforts remain to be determined.

3. The Inter-American Development Bank (IDB)

The IDB launched a $4.0 million, three-year project with MINSA in December 1992. This project will have three components. First, it will study the general legal framework that now restricts MINSA from developing alternate sources of funding. Second, it will carry out more precisely focused studies on the feasibility of introducing patient fees and privatizing hospital services (either by establishing private wings or services within existing public hospitals or by selling some or all of those hospitals to private investors or community associations). Finally, the IDB project will work with MINSA hospitals to improve their financial management and procurement procedures, thereby improving their accountability for the resources available to them. This latter component will involve, among other things, the design and introduction of a hospital-based management information system.

Additionally, the IDB has tentative plans to carry out a nationwide study of the demand for health care services. This study would begin in early to mid-1993.

4. Spain

The Sistemas de Información en Salud Nicaragüense (SIS-NICA) Project sponsored by the Spanish Development Agency's Centro de Investigación y Estudios de Salud (CIES) Project

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[10] As explained below, the Bank will not work in the Grenada SILAIS or on Ometepe Island, although both are located in Region IV. Instead, Italy will assist these areas.

[11] "Ayuda Memoria: Mision Proyecto Sector Salud (Junio 15 - 26, 1992)."

is working with MINSA's Planning Unit to develop a diagnostic of the Ministry's existing Health Information System (HIS). Once this diagnostic is completed, the CIES Project will help MINSA design software for that system. This effort is expected to be very useful to the DHS Project, and will complement the information systems subcomponent of DHS, which will design and implement a Ministry-wide Management Information System (MIS).

5. Italy

Italy plans to continue its ongoing support to all MINSA activities in the Grenada SILAIS and on the island of Ometepe, both of which are located in Region IV.

6. Denmark

The Danish International Development Agency (DANIDA) plans to sign an agreement with the GON in January 1993 to provide $3.0 million in assistance to the SILAIS of Rio San Juan, the semi-autonomous region on Nicaragua's southern border with Costa Rica. The Danish project is expected to focus on primary health care and pharmaceutical management.

7. The Emergency Social Investment Fund (FISE)

One of the largest donor-funded activities in Nicaragua's social sector is the Emergency Social Investment Fund (FISE). FISE has been supported by USAID since September 1990 through the Emergency Employment Generation Project. The lead role of A.I.D. in FISE's operations is scheduled to be completed in FY 1993, and will be replaced by the joint efforts of the IDB, the United Nations Development Program (UNDP), and the IBRD.

With support from these donors, FISE will rehabilitate existing health and education facilities. Thus, there will be no substantial degree of overlap between the DHS Project and the FISE operations. However, note must be taken of FISE rehabilitation programs - whether planned or already underway - to help assure that commodities from the DHS Project are not placed in buildings where they cannot be properly protected and used. USAID maintains a schedule of rehabilitation activities undertaken or to be undertaken by FISE and will share this information with MINSA and the individual SILAIS throughout the project. Furthermore, the SILAIS will be encouraged to make known their needs for FISE-financed rehabilitation of facilities through the appropriate channels.

8. United Nations Fund for Population Activities (UNFPA)

Since 1991, the UNFPA has been providing condoms, oral contraceptives, and inter-uterine devices (IUDs) to MINSA. In 1993, it will donate $375,000 of contraceptives. UNFPA also plans to assist MINSA in introducing Norplant implants into the Ministry's family planning program by providing 1,000 starter kits. The UNFPA also plans to work closely with MINSA's Division of Maternal/Child Health and Family Planning in strengthening the management of the MINSA family planning program and to provide technical training for

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service providers. In collaboration with USAID/Nicaragua and the Division of Reproductive Health of the Atlanta-based Centers for Disease Control (CDC), the UNFPA will assist the Division of MCH/FP in the implementation of a computerized contraceptive commodity management information system. Once installed, this system will provide information on the supply status of the MINSA family planning program and for forecasting contraceptive requirements.

9. Germany

Representatives of the German government have contacted USAID about their preliminary plans to launch a three-year, $3.0 million project. This activity would support primary health and child survival activities with a particular focus on community-based preventive efforts. The geographic focus of the German effort has yet to be determined.

Coordination with the activities listed above, and with new efforts that may emerge as implementation of DHS proceeds, will be an ongoing process throughout the life of DHS. As described in more detail in Section III, one of the tasks of the firm that will provide technical assistance to MINSA under the Accelerated Start component of DHS will be to compile and submit a complete list of those efforts, in greater detail than the summary information already provided, to USAID, MINSA, and the other members of MINSA's Comisión Nacional de SILAIS (CNS). All the major donors active in the health sector will join the CNS, a body that already exists and is chaired by MINSA. The GON's Ministry of Finance will also sit on the Comisión. GON approval of donor and MiFin participation in the CNS will be a Condition Precedent to disbursement of DHS funds.

The CNS will meet on at least a monthly basis to review progress under the various donor-funded activities, identify any areas of concern or conflict, and serve as a forum for resolving those difficulties. The donors will also work through the CNS and MINSA's Office of External Cooperation to produce annual, coordinated workplans to guide all their activities. To facilitate the ongoing work of the CNS, the DHS Project will fund the full-time services of a secretary. S/he will be given an office in and receive logistic support from MINSA.

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SECTION III: PROJECT RATIONALE AND DESCRIPTION

A. Project Objectives

1. Project Goal and Purpose

The Decentralized Health Services Project (DHS) will be a $29.4 million, five-year effort. Its **goal** will be to improve the health of the most disadvantaged sectors of the Nicaraguan population: children, mothers, and the poor. Its **purpose** will be to improve the management and increase the effectiveness of Nicaragua's public health resources, and to explore and encourage alternative financing to the sector.

2. End Of Project Status (EOPS)

By March 1998, the combined effects of the project interventions will have brought about the following conditions:

- The incidence of childhood diarrheal and respiratory diseases in the five SILAIS in which the Maternal Health and Child Survival (MH/CS) component of the project will be active will have decreased by at least 25%.

- Couple Years of Protection (CYPs) provided by MINSA family planning efforts will have increased by at least 10% nationwide.

- Nationwide immunization coverage against immuno-preventable diseases (tuberculosis, diphtheria, tetanus, pertussis, polio, and measles) will have reached 80% among children under one year of age, while nationwide immunization coverage for neonatal tetanus will have reached 70% among women of fertile age.

- Financial Management and Management Information Systems will be in place and fully operational in each of MINSA's 19 SILAIS, and MINSA's administrative procedures will have been decentralized.

- MINSA will have reduced the size of its list of essential drugs for primary health care programs; increased its use of paramedics in the delivery of primary health care services; monetized certain employee benefits now provided in-kind; and adopted a fee-for-service schedule for curative care.

- The percentage of MINSA's annual operating budget devoted to primary care will have increased from under 24% to at least 40%.

All the EOPs listed here and in Annex A, "Logical Framework", represent the best estimates of USAID and MINSA as of completion of this Project Paper. These estimates will be

revised during the first project year upon completion of the ongoing Family Health Survey and the conduct of a baseline data study. These efforts are described in more detail below.

B. Project Description

The DHS Project will include the following four components.

1. Accelerated Start Component (ASC)

The inadequacies of Nicaragua's present health care system and the immediate health needs of its people require prompt action. DHS will address this challenge through its Accelerated Start Component (ASC). The ASC is designed to make visible improvements in the shortest reasonable time.

Activities under the ASC will be conducted through two mechanisms. First, USAID/Nicaragua will contract directly with a Gray Amendment (minority-owned) U.S. firm to expedite mobilization of DHS's planned MH/CS survival efforts and to gather baseline data. Second, USAID will execute a Participating Agency Service Agreement (PASA) with the U.S. Public Health Service (USPHS) to procure on MINSA's behalf all project-funded commodities.[1] These two mechanisms are explained in more detail below.

a. Mobilization Efforts: Gray Amendment Firm

1) Human Resources Assessment

The DHS Project will be implemented largely through the work of MINSA staff. To confirm that these staff have the skills needed to carry out this work, the Gray firm will conduct a human resources assessment of personnel actually or potentially available at both the central level and in the five focus SILAIS. This assessment will confirm both the numbers of personnel available and the skills those personnel possess, and will make recommendations for the content of training courses to improve such skills. DHS will support such training beginning in its second year.

This human resources assessment will require approximately one month to complete. To conduct out. the Gray firm will provide the services of one senior Human Resources Specialist.

[1] The USPHS will procure all DHS-funded offshore commodities other than contraceptives for all components of DHS throughout the project's life. Materials and supplies that by their nature must be purchased locally will be procured by the long-term technical assistance contractor. Contraceptives will be purchased through A.I.D.'s Contraceptive Procurement Project with funds from outside this contract.

2) Survey of Ongoing and Proposed Activities of Other Donors

As described in Section II of this Project Paper, close coordination with the other donors active or potentially active in the health and social sectors will be vital to the success of DHS. Section II lists several activities to be funded by ASDI, PAHO, UNICEF, the IBRD, the IDB, and others. This list is not definitive; USAID's contacts with MINSA and the donor community suggest that several other donors may be interested in funding health sector activities. Moreover, the activities already planned or underway will likely be redesigned or amended as circumstances in the sector change.

It is therefore very important that USAID keep up to date on the status of activities funded by other donor activities, and that DHS's efforts be coordinated with their work. To begin this process of coordination, the Gray firm will survey ongoing and proposed activities of other donors in the sector. This survey will obtain detailed information from each donor as to their planned activities, inputs, level of funding, implementation mechanisms, geographic focus, timing, and anticipated beneficiaries. This information will serve as baseline data for the Comisión Nacional de SILAIS (CNS) and for MINSA's Office of External Cooperation, which will coordinate and develop annual workplans for all donor activities in the sector. The survey will require one month to complete. To conduct the survey, the Gray firm will provide the full-time services of one senior Health Management Specialist.

3) Implementation of Cost Containment and Cost Recovery Policies

As described in more detail in Section III.B.4 below, the GON realizes that its current level of expenditures on health care is neither sustainable nor effective. MINSA's ability to provide services depends on heavy donor subsidies, and the Ministry does not devote enough resources to primary care. To correct this situation, the GON has committed itself to an ambitious reform program. The most significant initiative to date is to occur under the auspices of the U.S.-funded P.L. 480 Title III Food for Development Program. As part of this program, a three-year effort that, beginning in 1993, will link imports of wheat, soybean meal, and tallow to policy changes in the agricultural and health sectors, the GON has pledged that by 1995, MINSA will have identified and put into practice several methods of cost **containment** and cost **recovery**. As a first step in this process, the GON agreed to a FY 1993 Title III policy agenda that calls for Nicaragua to:

- Present to A.I.D. its time-phased plan for cost containment and cost recovery in the health sector. This plan will address, inter alia, decreasing the list of essential medicines, increasing the use of paramedics, the monetization of employee benefits, and the development of fee schedules for **curative** services.[2]

[2] Given the DHS Project's emphasis on expanding access to and use of **preventive** health care services, which in the long-term are expected to reduce health care costs, it would be inappropriate - and counter-productive - for MINSA to introduce fees for the provision of preventive services such as contraceptives.

- Devote not less than 30% of MINSA's total 1993 budget to primary health care activities.

As this Project Paper was completed, MINSA prepared and submitted to USAID its plan for cost containment and cost recovery. This plan included all of the elements necessary to fulfill the FY 1993 health sector policy agenda. In the coming year, however, MINSA will require substantial technical assistance if it is to translate this plan into reality. By December 1993, if the Title III program is to continue, MINSA will have to be able to demonstrate that:

- Its plan to reduce the size of the list of essential drugs for its primary health care programs has been adopted;
- Its plan for increasing the use of paramedics for the delivery of primary health care services has been adopted;
- It has monetized certain employee benefits;
- It has adopted a fee-for-service schedule for curative care; and
- Expenditures on primary health care are programmed be not less than 35% of MINSA's 1994 budget.

To help MINSA reach these objectives, the Gray firm providing short-term TA to the Accelerated Start component will provide the services of the following three specialists for two months each:

- A senior Health Policy Specialist to work with MINSA central level staff (specifically, its Office of External Cooperation) to review MINSA's plans and to help it devise specific, written policy measures that will enable several methods of cost containment and cost recovery to be put into practice. This specialist will also help MINSA to review its budget and identify items that might be reduced or eliminated as part of the process of shifting funds to primary health care, and to perform the analyses needed to define the relative advantages and disadvantages to MINSA of the various options under consideration. The Health Policy Specialist will be responsible for monitoring steps MINSA is taking (as outlined in MINSA's formal plan) to fulfill the Title III policy agenda, helping to resolve problems, maintaining communications among concerned parties, and assisting MINSA in drafting documents necessary to formalize such reforms (e.g., legislation, decrees, etc.).

- A Pharmaceuticals Management Specialist to review MINSA's progress in, and assist with, the process of defining treatment standards and the corresponding drug requirements; assist in formulating a revised basic drug list for Nicaragua; and assist in formulating training programs for the appropriate use of the new drug list. This specialist will also review the status of implementation of a corresponding procurement and inventory system at hospitals and health centers and make specific recommendations for appropriate logistical controls at each level.

- A Health Care Financing Specialist to document actual on-going experience with fee-for-service activities already underway in Nicaragua, summarize their respective advantages and disadvantages, and formulate a list of options for broader scale introduction of fees-for-services in curative care. The Specialist will help MINSA design and implement initiatives in cost recovery, participate in the analyses of their feasibility, and make specific recommendations for continued implementation.

4) Obtain Baseline Data on Project Objectives

Finally, the Gray firm will design a methodology for gathering, and then help MINSA collect, baseline data on the End-of-Project Status Indicators (EOPS) and Objectively Verifiable Indicators (OVIs) against which the success of DHS Project interventions will be evaluated. Results from the ongoing national Family Health Survey (FHS), expected to be available by September 1993, will provide a portion of the essential baseline data, especially for contraceptive prevalence, diarrheal and respiratory diseases, the percentage of mothers and caretakers using MH/CS, and childhood immunization coverage.[3] Other data will have to be gathered by examination of records at the individual SILAIS level. To carry out this baseline study, the Gray firm will provide the full-time services of one senior Statistical Analyst. S/he will supervise the work of five locally-hired data gatherers, each of whom will work at one of the focus SILAIS.

USAID and MINSA estimate that this effort will require some three months to complete. Upon its completion, USAID expects that the EOPS and OVIs set forth in Annex A, "Logical Framework", to this Project Paper will be modified during the project's first year in light of this improved information base.

B. Commodity Procurement and Related Short-Term TA: The USPHS

To procure all project-funded offshore commodities (other than contraceptives) for MINSA, USAID will execute a PASA with the U.S. Public Health Service (USPHS). USAID and MINSA worked with the USPHS in the latter's capacity as the implementing agent for the 1990-92 Pharmaceutical Medical Supplies Project, an emergency procurement effort launched shortly after the election of the Chamorro government. Both USAID and MINSA were extremely satisfied with USPHS's work on that project: the USPHS assured that commodities were delivered on a timely basis, and made shipping arrangements at such substantial cost savings that MINSA and USAID were able to expand significantly the list of pharmaceuticals to be purchased within the original budget.

Under the Accelerated Start component, the USPHS will carry out the following tasks:

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[3] The FHS is funded by A.I.D. with monies from outside the DHS Project, and is being implemented by Profamilia in collaboration with the Centers for Disease Control (CDC).

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1) Survey of Immediate Commodity and Technical Assistance Requirements

The first task of USPHS will be to verify the commodity requirements identified in this PP for the five focus SILAIS.[4] These include oral rehydration salts, growth monitoring equipment, obstetrical/gynecological equipment, vitamins, antibiotics, contraceptives, and vehicles. USPHS will confirm these requirements and quantity estimates through site visits, and propose such modifications as may be necessary to the list included in this PP. It will also identify any training or technical assistance that might be needed to help MINSA use those commodities effectively.

This survey will require approximately one month to complete. To carry it out, the USPHS will provide the services of one senior Health Service Delivery Specialist and five locally-hired Nicaraguan Public Health Specialists. As part of this survey, these experts will recommend the introduction of such controls (e.g. inventory controls at the central and/or SILAIS levels) as may be necessary to assure the proper use of any commodities procured on MINSA's behalf.

2) Procurement of Commodities

The USPHS will use the results of the above survey to prepare inventories of all essential commodities and associated training needed by MINSA for DHS activities and not being provided by other donors. After review and approval by USAID and MINSA of these inventories, the USPHS will:

- Order on MINSA's behalf those commodities (other than contraceptives) needed to launch MH/CS efforts in the five focus SILAIS;

- Arrange for or carry out with its own personnel any short-term technical assistance (TA) and training MINSA and USAID determine is necessary to instruct MINSA personnel in the five recipient SILAIS in the proper use of the commodities and technologies that will be provided. The budget in the USPHS PASA will include two months of such short-term TA to coincide with the arrival of those commodities procured during the first project year.

These efforts will help the long-term TA team to begin implementation of the MH/CS component immediately upon its arrival, and will give that team an important head start on mobilization of the other DHS components.

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[4] During PP design, the commodity requirements for the five focus SILAIS (Matagalpa, Jinotega, and the three SILAIS of the Managua Region) were identified through extensive discussions with MINSA, review of secondary sources, and selected site visits. USPHS personnel will confirm these estimates by visiting all five focus SILAIS.

To prepare the required commodity specifications and bid documents, the USPHS will provide the short-term on-site services of one Commodity Management Specialist. This Specialist will serve for up to two months; commodity orders should be placed by the completion of his/her assignment.

For all the above efforts, MINSA will provide both the Gray firm and the USPHS with office space, access to computers, and secretarial support. A.I.D.'s contract with the firm will include funds for salaries, overhead, local transportation, vehicle rental, communications, and other logistic support.

2. Maternal Health and Child Survival (MH/CS) Component

This component of DHS will work in five of Nicaragua's 19 SILAIS: Matagalpa, Jinotega, and the three SILAIS of the Managua Region: Oriental, Central, and Occidental. The MH/CS component will seek to improve the accessibility and quality of health care for mothers and children, thereby increasing maternal and child survival in those areas. It will also provide increased access to family planning services and improve the effectiveness and efficiency of MH/CS services. Project interventions will seek to foster high levels of community participation, extended coverage, and administrative decentralization by working through the SILAIS structure.

The major focus of this component will be to support basic preventive maternal health and child survival interventions: control of diarrheal diseases (CDD) and of acute respiratory infections (ARI), maternal health (including birth spacing), nutrition education (including growth monitoring and promotion of breastfeeding), and immunizations.[5] At the same time, individual SILAIS will retain the flexibility to use their own resources, or resources provided by other donors, to respond (within MINSA norms) to other major health problems in their respective areas.[6]

The five SILAIS identified in this PP as the focus of the MH/CS component differ from the list included in the New Project Description (NPD) approved by AID/Washington for DHS. That NPD listed the five SILAIS in Regions I (Estelí) and II (León) as being among the most in need of health care interventions. During PP design, however, USAID found that the SILAIS in Regions I and II are now being assisted by a Swedish-funded program (implemented by PAHO and UNICEF) with coverage similar to that to be provided by DHS. Moreover, MINSA pressed for inclusion of the three SILAIS in Managua in DHS, since the incidence of health problems in Managua is among the highest - and most politically sensitive - in the country. Thus, USAID and MINSA have elected to replace the SILAIS of Regions I and II with those in Managua. By working in these SILAIS, the MH/CS component of DHS will provide health coverage for some 2.3 million people, or between 57% and 62% of the country's estimated population.[7]

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[5] As described below, immunization efforts will take place on a nationwide basis through USAID's ongoing support the PAHO/MINSA Expanded Program of Immunizations (EPI). Unlike the other MH/CS interventions, these efforts will not be limited to the five focus SILAIS.

[6] As described in Section II of this Project Paper, other donors plan to work with MINSA to help it upgrade services beyond those included in the term "primary health care" (e.g. its health information system, its physical infrastructure, and its system for managing pharmaceuticals).

[7] USAID's FY 1993 Congressional Presentation lists Nicaragua's population at 3,770,000. However, the 1992 World Population Data Sheet published by the Population Reference Bureau, widely regarded as a definitive source, lists the population at 4.1 million.

The specific MH/CS interventions that DHS will support, and the inputs that USAID will fund, are described in more detail below. In considering these interventions, it is important to keep in mind two factors. First, although the interventions are described individually, MINSA will - indeed, must - deliver them in an integrated, complementary manner, for it is the combination of services, not merely one or another, that is needed. Second, over the life of DHS, project-funded technical assistance, both expatriate and local, will work with MINSA to help design such an integrated program; will help train MINSA personnel in how to carry out this program; and will follow-up with MINSA professional and volunteer staff to make sure the interventions described below are being provided in the manner envisioned by USAID and MINSA. Coordination, training, oversight, and follow-up will be key to the success of this component; the accompanying long-term technical assistance effort is designed to help MINSA provide these functions.

a. Preventive MH/CS Interventions to be Supported by DHS

1) Control of Diarrheal Disease

In Region VI, where the Infant Mortality Rate (IMR) is the highest in Nicaragua (88 per 1000 live births compared with the national level of 72 per 1000), the main cause of infant death is diarrheal disease. Diarrheal disease also accounts for 34% of child mortality. To address this situation, DHS will seek to reduce infant and child mortality caused by diarrheal disease by 25% in the focus SILAIS by supporting two basic types of interventions.[8]

<u>Oral Rehydration Therapy:</u> First, the project will work with MINSA facilities in the five focus SILAIS to assure the availability and use of oral rehydration salts (ORS) for children under five years of age who can be expected to have diarrheal episodes requiring rehydration. During the Accelerated Start Component, the USPHS will estimate, procure, and deliver a one year supply of ORS, plus adequate reserve stocks. Subsequently, beginning in the second project year, the long-term TA team will work with MINSA and the USPHS to inventory supplies of ORS in the five SILAIS, estimate the need in those areas, and pass this information to USAID and MINSA. The USPHS will then, upon approval of USAID and MINSA, procure ORS in quantities adequate to meet those needs.

The estimate of the demand for ORS will be based on two sets of factors. First, it will consider consumption during the first year of the project. Second, the team will review with MINSA and USAID the results of the Family Health Survey (FHS) being undertaken in collaboration with Profamilia and the Centers for Disease Control (CDC). This survey, the results of which are to be available by September 1993, should provide information as to what mothers do to manage diarrheal disease among their children. Using these findings as a guide, the institutional contractor will provide short-term technical assistance to carry out

[8] The present national infant mortality rate attributed to diarrheal disease is 28.7/1000 (or 40% of all infant mortality). As described above, the ASC component of DHS will gather baseline data on this variable in the focus SILAIS.

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research on why mothers or caretakers do or do not administer ORS or other interventions. This research may lead to the design of new interventions and/or to modification of the ORS and breastfeeding approaches espoused by MINSA.

Promotion of Breastfeeding: Second, DHS-funded technical assistance will work with MINSA staff to encourage mothers to adopt and extend the duration of exclusive breastfeeding. Exclusive breastfeeding, rather than feeding with liquids that may be contaminated, reduces the potential exposure of the infant to diarrheal disease. This approach may be particularly effective in the SILAIS of Matagalpa and Jinotega, where mothers are more likely to be in a position to act on such advice. In the Managua Region, which has more working mothers, this approach may not be feasible. In this area, the project will recommend the use of safe, hygienic, and nutritious alternatives.

The MH/CS component will promote these two interventions largely through the efforts of community health workers (CHWs). DHS-funded technical assistance will help MINSA train these workers to recognize danger signs of dehydration; provide ORS and instruct mothers and caretakers in its administration; promote the use of home-made solutions (*"sueros caseros"*) of water, sugar, and salt when ORS are unavailable; train mothers and caretakers in proper feeding practices; and persuade mothers who can breastfeed to do so exclusively during the first four to six months of their babies' lives. Health workers will also learn to encourage families to take dehydrated children to health facilities, to stress the importance of washing hands after defecation and before food handling, and to instruct families to treat water with chlorine. The long-term technical assistance team (including five SILAIS-level Administrative Assistants, or SAAs) will help MINSA supervise these efforts to assure that the CHWs are disseminating the proper messages. Most of the CHWs expected to participate in DHS have already learned how to promote these simple methods through their participation in MINSA's ongoing anti-cholera campaigns.

2) Acute Respiratory Infections

The MH/CS component will also address the second-leading cause of infant and child mortality, acute respiratory infections (ARI). In each of the five focus SILAIS, the long-term TA team will work with MINSA to train professional staff and volunteer CHWs to teach residents how to recognize the danger signs of severe ARI (e.g., fast breathing and chest-in-drawing) and when it is necessary to take children to a health center for treatment. They will also teach the CHWs how to promote proper prevention techniques (e.g. avoiding exposure to cold, smoke, and dust), especially for infants under three months of age. One of the fundamental aims of this effort will be to teach the community to recognize when a child may have pneumonia, and to stress the importance of taking that child to the nearest health facility for antibiotic treatment. The community program will also reinforce the importance

of completing antibiotic treatment at home, even though initial symptoms may have ceased, once such treatment has been initiated.[9]

To complement these efforts, the MH/CS component will supply health facilities in the five SILAIS with oral antibiotics to meet the increased demand for treatment expected to come from a better educated public. Given the tendency to over-medicate in Nicaragua, in-service training will stress the importance of strict compliance with norms established by MINSA to prevent indiscriminate prescription of antibiotics.

3) Maternal Health

As noted in Section II of this Project Paper, the Nicaraguan maternal mortality rate (159/100,000 live births) is very high. The principal proximate causes are hemorrhages, toxemia, and sepsis resulting from childbirth or induced abortions.[10] Yet high fertility (5.94 children per women of childbearing age) and low contraceptive use are the major underlying causes.

To deal with these problems in the five focus SILAIS, the MH/CS component of DHS will help MINSA, in accordance with its established norms, provide integrated maternal and child health services. Through the promotional efforts of SILAIS personnel and community health workers, the project will seek to increase the timely use of both prenatal and postnatal care, to encourage women experiencing high-risk pregnancies to give birth in hospitals, and to promote family planning and birth spacing.

Project-funded training will enable these personnel to conduct this outreach effort. This training will emphasize the essentials of assuring safe motherhood, the need for compliance with prenatal and postpartum norms, and the control of reproductive diseases that may influence pregnancy outcomes. MINSA medical and paramedical personnel, for example, will learn to diagnose and treat sexually transmitted diseases (STDs) and how to recognize and refer patients who might be suffering from uterine cancer. The Project will also train midwives to identify high-risk pregnancies (and in particular to identify those pregnancies that should be referred to a health center), and will upgrade hygienic practices in home delivery.

Commodities funded by DHS will reinforce these efforts by equipping the health facilities to provide effective diagnosis and treatment of the maternal health problems. These commodities will include the furnishings and equipment for proper examinations (tables, chairs, lamps, stirrups, speculums, stethoscopes, blood pressure cuffs) and vitamins to reinforce maternal health.

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[9] The CHWs themselves, however, will not distribute antibiotics.

[10] The World Bank, "Nicaragua's Health, Nutrition, and Education: Issues and Options," November 22, 1991, p. 2.

To complement these efforts, A.I.D. will also use funds from the DHS Project to procure contraceptives as a means of improving maternal health and promoting birth spacing. Contraceptive prevalence is believed to be low in Nicaragua, due in part to the unavailability of contraceptives. To correct this situation, A.I.D. will become a principal provider of contraceptives for MINSA, and will ensure that health facilities are well supplied. A supply of $700,000 worth of contraceptives[11] will be ordered in FY 1993 to complement the Accelerated Start Component. Subsequent orders will be drawn up by the long-term technical assistance team and placed through A.I.D.'s standard contraceptive procurement mechanisms. By the completion of the project, A.I.D. will have procured a total of $2,600,000 worth of contraceptives for MINSA.

To assure that these contraceptives are properly used, Project-funded technical assistance will train MINSA personnel in family planning counselling, method selection, and contraindications. These efforts will be aimed at reducing problems and risks resulting from contraceptive use. Additionally, MINSA personnel will be trained in contraceptive logistics and management to assure a regular supply of contraceptives. Auxiliary MINSA personnel and community health workers will be trained to promote family planning in the context of improved maternal and child health. Once trained, CHWs will receive and distribute condoms, and will also resupply oral contraceptives to clients who have already received a prescription for them from a physician or nurse practitioner. Finally, MINSA physicians at the health center level will be trained in voluntary surgical contraception (VSC). This training will be provided by short-term personnel funded under the planned long-term technical assistance contract.[12]

4) Nutrition Education

The MH/CS component of DHS will support two principal nutritional education efforts: growth monitoring (including the provision of Vitamin A supplements) and the promotion of breastfeeding.

a) Growth Monitoring and Vitamin A Supplements

The most important aspect of this intervention will be to increase the number of mothers caretakers who bring at-risk children to health facilities. The percentage of infants visiting health facilities is currently estimated at 22%. Many observers, however, suspect that this figure includes more well babies than at-risk babies urgently in need of care. To bring at-

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[11] Contraceptive procurement in the first year of the project will be divided between orals (80% of the value) and condoms (20%). These proportions may change over the life of the project as the USPHS and the long-term technical assistance team work with MINSA to assess the needs of the individual SILAIS. Other contraceptives besides orals and condoms (e.g., IUDs, Norplant) may be provided to MINSA later in the life of DHS.

[12] The World Bank plans to provide VSC training at the hospital level. See Section III.B.2.c below for further details of all training efforts the MH/CS component of DHS will support.

risk and malnourished babies into the health care system, MINSA will rely heavily on volunteer community health workers and trained midwives (*"parteras"*). Malnourished babies will be referred to supplemental feeding programs where these are available; e.g., the effort being implemented by the World Food Program.

To assist these CHWs and midwives, the project will provide measuring sticks, measuring tapes, and/or scales for village screening of babies by the community health workers, and will train those workers in how to use them and when referral to a health facility is indicated. Project-funded training will also teach alternative techniques (e.g. measurement of arm circumference) for situations in which measurement or weighing would be inappropriate or impossible.[13] Hanging scales for infants will be provided by the project for all health posts and centers in the five focus SILAIS that need them. Techniques of weighing, reading and recording results, and providing guidance to mothers and other caretakers will be part of the in-service training provided by the Project to MINSA personnel at those centers and to CHWs. Additionally, the project will procure one million doses of Vitamin A capsules for the estimated 100,000 children in the five focus SILAIS that will need such treatment over the life of DHS.[14]

b) Breastfeeding

The second aspect of nutrition education, the promotion of breastfeeding, is also critically needed. According to recent estimates, the number of mothers who breastfeed their children through the sixth month is relatively low. Exclusive breastfeeding is rare among Nicaraguan mothers because of traditions of giving babies liquids (usually sweetened) shortly after birth. To begin to change this situation and help prevent malnutrition, all health personnel (both MINSA staff and community volunteers) in the five focus SILAIS will provide frequent and unequivocal advice on the advantages of breastfeeding, when to introduce solid and liquid food supplements, and proper weaning practices. These personnel will be trained by project-funded TA in, and will in turn stress to their communities, the need for continued breastfeeding during diarrheal episodes and other bouts of disease (e.g., ARI). They will also receive training in, and then advise their communities on, proper feeding practices for children not being breastfed. Advice for urban mothers who must work will point out the advantages of continuing after-work breastfeeding along with mixed feeding as long as possible.

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[13] The appropriate measuring/weighing techniques will vary from site to site depending on a number of factors, including the literacy and numeric skills of the CHWs and the client population. The commodity needs assessment to be carried out as part of the Accelerated Start component will provide an initial view of the appropriate mixture of techniques for the project area. This view will be refined by MINSA and the TA team as implementation proceeds.

[14] Vitamin A has been shown to be effective in promoting linear (i.e., vertical) growth. It also reduces mortality associated with common childhood diseases in populations with significant Vitamin A deficiency, and may be an effective means of reducing vulnerability to diarrheal diseases, respiratory infections, and measles. Since there are no contraindications, the project will encourage liberal use of Vitamin A capsules.

To support both types of efforts, DHS-funded TA will train facility personnel to provide appropriate nutritional counselling. They will learn when children must be hospitalized or given special feeding regimens that can be supervised by auxiliaries. These auxiliaries will be given refresher training on feeding malnourished children.

5) Immunizations

This subcomponent of DHS will continue USAID's participation in MINSA's Expanded Program of Immunizations (EPI). Support for that program has heretofore been provided by annual buy-ins to the LAC Regional EPI Project (No. 598-0786) implemented by PAHO. These buy-ins have been funded by USAID's bilateral EPI Project (No. 524-0321). Through this subcomponent, DHS will continue annual buy-ins to the Regional Project, replacing the stand-alone EPI Project.[15]

Like the stand-alone EPI Project, the DHS-funded buy-in will seek to decrease the morbidity and mortality of Nicaraguan children from immuno-preventable diseases by increasing vaccination coverage of children less than one year of age in all municipalities of Nicaragua and by strengthening the national epidemiological research and surveillance system. Success rates so far have been encouraging: the immunization program is attaining good coverage in children under one year of age (for 1989, BCG 94%, DPT 70%, Polio 91%, TT 50%, and Measles 63%).[16] With assistance from DHS, MINSA will seek to achieve 80% coverage of children under one year of age by 1998. Unlike the other activities of the MH/CS component, the immunization subcomponent will be implemented throughout Nicaragua.

To accomplish this objective, DHS will execute annual buy-ins to the Regional LAC EPI Project (and to its expected successors) to fund the same types of inputs as did the predecessor EPI Project: commodities (vaccines and cold chain equipment), technical assistance (to carry out research and conduct outreach campaigns), operational expenses (transportation, surveillance, administration, supervision, and overhead), and training. The latter effort will focus on facility staff, auxiliaries, and health workers, who will be trained by PAHO personnel in the preventive benefits of vaccinations, the importance of receiving all of the serial antigens and having infants vaccinated in a timely fashion. The training will stress to the CHWs the importance of encouraging families to bring their children to the health facilities for vaccination. Through these effort, DHS will attempt to increase the percent of vaccinations provided in fixed sites from the currently estimated 65% (and 15% through special campaigns heavily dependent on community health workers for mobilization) to 90% in fixed facilities by the end of the Project.

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[15] The PACD of the separate EPI Project (524-0321) was extended from December 31, 1992 to September 30, 1993 to allow PAHO to expend some $455,000 in remaining funds. Assistance from DHS to the joint MINSA/PAHO immunization program in Nicaragua will begin as soon as these funds are spent. This will avert any gap in A.I.D. support to the program.

[16] Barry Smith citing Valdez, 1990.

The total value of these five annual buy-ins will be $3.5 million. As shown in Section V of this Project Paper, the funds provided by DHS to this buy-in will gradually decrease each year from an initial $1.0 million in Project Year (PY) One to $600,000 in PY Five. This slowly diminishing A.I.D. role will afford room for other donors to participate in the program and for MINSA to absorb more of its costs. All EPI efforts will be coordinated with the activities of other donors, and with the other components of DHS, through the CNS. PAHO will continue to prepare and seek donor approval of annual action plans to guide its activities.

6) Information, Education, and Communication Campaign

To complement all five of the preventive health interventions described above, DHS will also support design and implementation of an information, education, and communication (IEC) campaign. This campaign will include manuals, posters, pamphlets, radio spots, and other appropriate media. The CHWs and midwives will distribute the written materials to clients, and the integrated messages presented in these materials will be reinforced by radio programs at optimal listening times.[17] All messages will take into consideration the relatively low level of literacy both among the CHWs themselves and in the population they are intended to serve.

Design and execution of the IEC campaign will be supervised by a Nicaraguan advertising firm. The services of this firm will be acquired through a sub-contract with the long-term institutional contractor. The Scope of Work for this subcontract will be prepared by USAID and included in the PIO/T that USAID will issue for the planned long-term technical assistance contract. All materials produced by this local advertising firm will be approved by both USAID and MINSA before their distribution; all visual materials (as distinct from radio spots) will be clearly marked as having been sponsored by both A.I.D. and MINSA.

b. Technical Assistance in Support of MH/CS Efforts

To assist MINSA in carrying out the interventions described above, and in providing the training detailed below, the DHS Project will fund a long-term technical assistance contract with a U.S. firm or institution chosen through full and open competition.[18] For the MH/CS component, this contractor will provide the services of two long-term technical assistance personnel. The first, a senior Maternal Health and Child Survival Specialist, will coordinate and assure proper integration of the first four types of MH/CS primary care efforts (control

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[17] The Family Health Survey now being carried out by Profamilia and CDC includes a question on when mothers/caretakers normally listen to the radio, what programs they listen to and on which radio stations. DHS-funded TA will take this information into account in designing the radio campaign. These radio messages will form an essential complement to the volunteer CHW effort, as personal contacts made by CHWs must be reinforced by media messages if either type of outreach mechanism is to be successful.

[18] The same firm will also assist, as described below, the Management and Financial Decentralization and Alternate Sources of Financing components of DHS.

of diarrheal disease, treatment of acute respiratory infections, promotion of maternal health, and nutrition education) to be supported by DHS in the five focus SILAIS. S/he will assure that these efforts are conducted in harmony with the PAHO-managed EPI program, with the work of the other components of DHS, and with the efforts of other donors. The MH/CS Specialist will arrive in Nicaragua late in the first Project Year and serve through the March 1998 PACD. S/he will reside in Managua.

The second expert, a senior Training and Outreach (T&O) Specialist, will supervise development of the curricula for, oversee implementation of, and assure coordination between, all MH/CS training and information, education, and communication (IEC) activities. The T&O Specialist will arrive in Nicaragua late in the first Project Year and serve for 30 months; s/he will live in Managua. In mid-1996, this Specialist will be replaced by a locally-hired Nicaraguan Health Trainer, who will serve for the remainder of the project.

These long-term TA personnel will be assisted by, and will supervise the work of, five locally-hired Nicaraguan SILAIS Administrative Assistants (SAAs). Each of these SAAs will be hired by the institutional contractor as soon as possible following arrival of the long-term TA team, and will work through the PACD in one of the five focus SILAIS.[19]

The long-term TA contract will also include funds for 36 person-months (PMs) of short-term technical assistance. Tentatively, 12 of these PMs will be allocated to the MH/CS component. Bidders for the long-term contract will be invited to include in their proposals a description of how they would program these short-term resources.

c. Training in Support of MH/CS Efforts

Training provided by the MH/CS component of DHS will improve the capability of MINSA's human resources to deliver the integrated maternal health and child survival interventions described above at all levels of the delivery system: a) the focus SILAIS; b) the medical and nursing staff of hospitals and health centers; c) health post doctors, nurses, auxiliary nurses and technical auxiliaries; and d) the community health workers and traditional midwives. Under this component, DHS will support the following training activities.

1) Orientation Workshops/Development of SILAIS-Specific Training Plans

As soon as possible following arrival of the long-term technical assistance team, the Training and Outreach Specialist, the MH/CS Specialist, and the five Nicaraguan SAAs will begin implementation of this component of the Project by conducting short (two-day) workshops

[19] These five SAAs will provide support to, and be responsible for coordinating the inputs of, all components of DHS at the SILAIS level.

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for the Directors and Sub-Directors of the five SILAIS in which the MH/CS component will be implemented. These workshops will orient participants to the objectives and planned activities of DHS, with specific attention to the project's plans for integrated MH/CS service delivery and support for close collaboration between the hospitals and the SILAIS. These workshops will also obtain the input of participants into the design of a workplan (including a SILAIS-specific training plan) for the project's first year.

Using the feedback generated from these orientation workshops as a starting point, the T&O Specialist, the MH/CS Specialist, and the five SAAs will then work with senior MINSA personnel in each focus SILAIS to develop a training plan for that SILAIS. This will involve establishment of detailed curricula for the different types of training; development of integrated training manuals with simplified norms for the different interventions; design of educational/promotional brochures on home and community prevention efforts; and development of integrated MH/CS supervisory guides. These training plans will detail the curriculum for both the Health Intervention Training (HIT) and Health Prevention Training (HPT) described below. The plans will be developed in close collaboration with UNICEF, which is funding similar training in Regions I and II, and will be submitted to USAID and MINSA for review and approval before training begins.

As an important step in designing this training, the T&O Specialist will help MINSA establish norms stating the nature and range of health prevention activities and services to be provided by CHWs and midwives. These norms will focus on providing the CHWs with appropriate and understandable messages that will increase knowledge and stimulate appropriate behaviors about both how to prevent disease and how to react when illness strikes. They will include a section on traditional medical beliefs and treatments in Nicaragua. These beliefs and practices are widespread, and often determine whether or not a mother will seek modern medical attention, will administer her own folk remedy, or seek out the services of a traditional healer.

2) Training of Trainers (TOT)

Upon approval of the training plans, the T&O Specialist and the SAAs will conduct a twelve-day Training Of Trainers session (TOT) for 50 members of the health center nursing and medical staff in the five focus SILAIS. These 50 professionals will be the core Project trainers for subsequent levels. The TOT sessions will be divided into four modules of three days each (one module for each of the MH/CS interventions other than immunization).[20] They will provide self-instructional manuals on these interventions, training in how to use more simplified manuals for auxiliary nurses and technical auxiliaries, and pictorial brochures for community health workers. The TOT program will ask participants to suggest changes in or additions to the curriculum that will be presented in the training modules at the next level (see below).

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[20] Training in immunization will be provided through the immunization subcomponent implemented by PAHO and MINSA.

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3) Health Intervention Training (HIT)

Under the supervision of the senior Training and Outreach Specialist, 20 of the 50 health professionals who participated in the TOT training will then launch a series of Health Intervention Training (HIT) sessions at each SILAIS.[21] Like the TOT, the HIT sessions will each last 12 days, and be divided into four three-day modules, each of which will focus on one of the four DHS-supported MH/CS interventions. Though these modules will be presented separately, they will all stress that the MH/CS preventive interventions should be provided in combination.

The target audience for the HIT sessions will be the estimated 4,700 MINSA physicians, technical staff, nurses, and health auxiliaries in the focus SILAIS. Approximately 1,500 of these potential trainees are physicians, while some 2,300 are nurses or health auxiliaries, and almost 900 are technical personnel. The DHS Project, of course, will emphasize the importance of reducing MINSA's reliance on physicians as providers of primary health care. Nonetheless, the participation of physicians in these training programs is essential to assure their support for (and thus the success of) MINSA's new emphasis on primary care.

These employees will be divided into approximately 200 classes of between 20-25 participants each. The 20 trainers will be split into five teams of four trainers each. Thus, each team will offer 40 12-day classes over the life of the project. USAID and MINSA expect that HIT sessions will begin in the Matagalpa and Jinotega SILAIS in the second Project Year, and will continue in the three SILAIS of Managua during the third and fourth Project Years; the actual training schedule, of course, will be developed by MINSA and the long-term TA team in collaboration with USAID. All training of MINSA SILAIS personnel in MH/CS preventive interventions should be completed by the end of the fourth Project Year. The final year is to be devoted to refresher courses for personnel already trained and to new courses for replacement personnel.

4) Health Promotion Training (HPT)

Once the HIT sessions described above are underway, the senior Training and Outreach Specialist will then work with MINSA to develop curricula for and launch a series of Health Promotion Training (HPT) sessions. These HPT sessions will have two target groups: one, approximately 9,000 community health workers and midwives whose promotional efforts within their communities will be critical to the success of the MH/CS preventive health DHS will support; and two, up to 2,400 nurses and nurse auxiliaries who will provide counselling in maternal health and child survival at the health facilities. These two types of training are described below.

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[21] These 20 trainers will be selected jointly by MINSA and the long-term TA team based on their interest and performance during the TOT sessions.

a) For CHWs and Midwives

Using the training norms approved by MINSA and USAID, the TA team and the remaining 30 MINSA health professionals trained under the TOT program will train approximately 9000 CHWs and traditional midwives to promote behaviors shown to be effective in preventing morbidity and mortality. Each of these volunteers will participate in intensive three-day sessions led by a three-person team. These sessions will train the volunteers to visit homes on a regular basis and address existing neighborhood and community organizations. In these contacts, the CHWs will explain to their communities the importance of taking, and teach them how to take, the various preventive measures described above: use of ORS, exclusive breastfeeding, handwashing, contraceptive use and birth spacing, etc. They will be trained to recognize, and will in turn teach their communities to recognize, danger signals such as dehydration, fast breathing, and chest-in-drawing, and will emphasize the importance of bringing children suffering from these symptoms to a health facility. They will also learn how to recognize and refer possible cases of sexually transmitted diseases and uterine cancer, and how to assemble specific groups of residents for certain kinds of health education (e.g., immunization reactions and what to do when they occur). In this context, the Health Promotion Training sessions will devote considerable attention to the development of culturally appropriate presentational skills that will enable the volunteer CHWs to reach their communities more effectively.

Recruitment and training for the HPT program will begin in the Matagalpa and Jinotega SILAIS early in the second Project Year and move into the Managua SILAIS some six months later. The 9000 CHWs will be divided into approximately 600 classes of 15 persons each, while the 30 trainers will be divided into 10 three-person teams. Thus, each team will offer approximately 60 three-day classes.

b) Counselling Training for Nurses and Nurse Auxiliaries

The second aspect of the HPT effort, counselling training, will take place simultaneously with the CHW training. These sessions will provide one week of training in counselling skills to each of the estimated 2,400 MINSA nurses and nurse auxiliaries in the focus SILAIS. The skills they learn in this training will help enable them to effectively reinforce the preventive health messages provided to the communities by the CHWs and traditional midwives and by the radio advertisements supported by the IEC campaign.

Counselling training sessions will be implemented in tandem with those for CHWs, and will be conducted by the same 30 trainers on a rotating basis. Counselling training will be carried out in classes of approximately 20 participants each for a total of 120 classes. Thus, each of the 10 training teams will conduct approximately 12 such classes.[22]

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[22] USAID and MINSA envision that these trainers will devote three weeks of every month to CHW training and one week to counselling training. Because there will be significantly more participants in the CHW sessions than in the counselling sessions in each SILAIS, it is likely that the counselling sessions will be completed more quickly.

Approximately 72 weeks of effort will be required to complete the two types of Health Prevention Training (60 for CHW/midwife training and 12 for counselling training). HPT sessions will begin in the second Project Year, and are to be completed early in Project Year Four. The remaining life of the DHS Project will be devoted to refresher courses for personnel already trained and to new courses for replacement personnel.

5) Participant Training in the U.S. and Latin America

To supplement these in-country training efforts, DHS will provide short-term training in the U.S. or elsewhere in Latin America in such areas as clinical, technical, administrative, and counselling skills. USAID and MINSA expect that up to 30 MINSA professionals will participate in these courses. Some of the U.S. institutions to which trainees might be sent, and the areas in which those institutions offer short-term courses, are listed in Table III-1 below:

Table III-1: Possible Locations for Short-Term U.S. Training

Institution:	Subject Areas:
University of California at Santa Cruz	Information, Education, and Communication*; Family Planning*
University of New Mexico	Public Administration*
Boston University	International Health Planning
Management Sciences for Health (Boston)	Child Survival*; Pharmaceutical Management; Project Management
Centers for Disease Control (Atlanta)	Epidemiology
CEDPA (Washington, D.C.)	Women in Development; Women Managers
International Planned Parenthood Federation (New York)	Family Planning

* = Course offered in Spanish

MINSA and the long-term TA team will work together to select these participants, who will be approved by USAID before their departure. The key criteria for their selection will be one, the importance of their role in implementing the MH/CS component of DHS in the five focus SILAIS; and two, their need for this type of training.

The average duration of this short-term offshore training will be approximately three weeks. Funds for this training will be included in the long-term institutional contract. Training will begin during the second Project Year and continue throughout the project.

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d. Commodities in Support of MH/CS Efforts

The MH/CS interventions described above will be carried out in the five focus SILAIS through 8 departmental hospitals, 4 primary hospitals, 44 health centers, 84 medical posts and 101 health posts. As described in Section III.B.1, the U.S. Public Health Service will confirm what commodities are urgently required to allow SILAIS facilities to begin implementation of MH/CS efforts during the project's first year. Upon approval from USAID and MINSA, the USPHS will place orders for approximately a year's supply of those commodities, thus allowing them to arrive in Nicaragua at about the same time as the long-term TA team (i.e., late in Calendar Year 1993). The USPHS will also provide short-term training in the use of these commodities. Subsequently, the USPHS will be responsible for procuring replacement stocks of these commodities throughout the life of DHS. Beginning in the second Project Year, the institutional contractor will be responsible for working with MINSA to identify these commodity requirements and for passing them on to USPHS. Prior approval by USAID will be required before the USPHS orders any commodities. As a Condition Precedent to placing any such orders, MINSA will provide, in form and substance satisfactory to USAID, a list of the locations to which these commodities will be distributed, the general purposes for which these commodities will be used, the officials who will be responsible for control of their use, and a description of the steps MINSA will take to provide for the physical security and proper management of those commodities.

Subject to confirmation by the USPHS during the Accelerated Start Component, USAID and MINSA expect that the basic equipment and supplies needed to carry out essential MH/CS interventions in the focus SILAIS will include the following:

1) Four-wheel Drive Vehicles (Five)

DHS will procure five U.S.-made four-wheel drive vehicles for use at the SILAIS level by the long-term technical assistance team (including the SAAs) and their SILAIS counterparts. On those occasions when additional vehicles are needed to support the work of the technical assistance team and their counterparts, MINSA will provide these vehicles from its own fleet (e.g. those purchased for MINSA by A.I.D. under the recently-completed Public Sector Commodity Support Project).

Obviously, all these vehicles will support all components of DHS; it is therefore difficult to say with precision which or how many vehicles will be devoted principally or exclusively to the MH/CS component. For presentational purposes, this PP assumes that all five vehicles will be primarily used in support of the MH/CS component.

2) Oral Rehydration Salts

MINSA data indicate that there will be about 175,000 episodes of acute diarrhea per year in the five project SILAIS, and that four ORS packets are needed per episode. DHS will therefore need 700,000 packets per year, or 3.5 million packets over the life of the project.

Since ORS is supplied in containers of 370,000 packets, 10 containers should be procured (at an estimated cost of $50,000 per container).

3) Growth Monitoring and Screening Equipment

Adult weighing scales for 20 health centers will be provided to replace their presently non-functioning scales; 200 swing scales will be provided to equip all medical and health posts. The project will also procure measurement sticks (tallsticks) and measuring tapes for the 9000 CHWs in the focus SILAIS. The CHWs will use these to measure infants and children and check their growth against the norm for their age. DHS will train the CHWs in how to use these tools and in when referral to a health facility is indicated.

4) Obstetrical/Gynecological Equipment and Furnishings

DHS will procure two obstetrical/gynecological kits for each health center, medical post, and hospital in the five SILAIS, for a total of approximately 500 such kits at 250 sites. In addition, examination room furniture and equipment will be provided for the same 250 sites. This will include examination tables, lamps, chairs, stethoscopes, and blood pressure cuffs. Disposable supplies including gloves, gauze, alcohol and cotton will be provided for all health facilities in the focus SILAIS over the life of the Project.

5) Clinical Laboratory Support

Miscellaneous laboratory equipment (slides, slide covers, reagents, test tubes, burners, etc.) necessary for diagnostic care of pregnant women and preschool children will be provided for 100 local health posts.

6) Prenatal Vitamins for Pregnant Women

An estimated 80,000 women will give birth per year in the five SILAIS. Each mother will need a little more than 2 bottles of prenatal vitamins (multivitamins with iron) per pregnancy. Assuming 400,000 pregnancies over LOP, about 865,000 bottles of vitamins, or 173,000 bottles per year, will be needed.

7) Vitamin A Capsules

It is estimated that there will be 500,000 children under the age of five in the selected SILAIS during the life of DHS. Approximately 20%, or 100,000 of them, will need a vitamin A capsule every six months, for ten doses each over the life of the project. This will result in a total of one million doses.

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8) Antibiotics to Treat Acute Respiratory Infections

As no other donors plan to furnish antibiotics for treatment of acute respiratory infections, USAID has agreed to do so not only for the five project SILAIS, but for all 19 SILAIS nationwide. In Nicaragua there are an estimated 75,000 cases/year of respiratory infections, and 10% are considered severe. These severe cases need antibiotic therapy. MINSA norms call for two 500mg capsules of ampicillin per day for five days. Assuming 7,500 severe cases per year, or 37,500 such cases over the life of DHS, 375,000 capsules of ampicillin will be required.

9) Immunization support: SILAIS-level cold chain, vaccines, syringes

In coordination with other donors, USAID's buy-ins to support the PAHO/MINSA-managed EPI Program will fund the procurement of vaccines, supplies, and cold chain equipment for all 19 SILAIS. PAHO will procure these commodities under the terms and conditions of its present agreement with A.I.D for the Regional EPI Project.

The cold chain equipment will include 100 gas-electric refrigerators for use at health facilities in the five focus SILAIS which do not now have refrigeration equipment. This will allow the vaccination program to operate in remote fixed sites accessible to the people.

10) Contraceptives

As noted, DHS funds will finance the procurement of up to $2.6 million worth of contraceptives, including condoms and orals (and possibly injectables and Norplant) over the life of DHS for MINSA as a means of decreasing fertility rates and promoting birth spacing. A.I.D. will thereby become a principal provider of contraceptives for MINSA. All contraceptives will be purchased by AID/Washington through its standard contraceptive procurement procedures.

3. Management and Financial Decentralization Component

Serious weaknesses in institutional management and administrative support impair the effectiveness of MINSA's health programs, especially its maternal health and child survival (MH/CS) programs. Given these weaknesses, the technical interventions described above will, by themselves, not be sufficient to make the MH/CS programs effective. If these efforts are to be successful, MINSA, the primary health service provider in the country, must also strengthen the management of the SILAIS and their health facilities. This strengthening must focus on enhancing the effectiveness of the management functions that support primary health care in operational units. These functions are essential to sustained and efficient delivery of MH/CS and other vital health interventions. To carry out these functions, MINSA staff, particularly at the SILAIS and operational levels, must obtain management, financial and technical skills beyond those they now possess.

The Management/Financial Decentralization (MFD) component of DHS will provide technical assistance, training, and office equipment and supplies to help MINSA acquire these skills. Its main focus will be on management improvements at the SILAIS level. This component will thereby support the decentralization process initiated with the creation of the 19 SILAIS, and enable them to fulfil their role in a decentralized system of health service delivery. The MFD component will also operate at the central level, but only insofar as necessary to support the decentralization process.

The MFD component will help to strengthen the SILAIS and decentralize managerial and financial activities by:

- Helping MINSA to define and establish an optimum SILAIS organizational and managerial structure.

- Developing a Financial Management System (FMS) for the SILAIS and implementing that system on a pilot basis at the MINSA Central level and at one of the five SILAIS participating in the MH/CS component.

- Helping MINSA extend the FMS, based on the results of the pilot program, to as many as 18 additional SILAIS.

- Improving MINSA's access to and use of information technology, and establishing a Management Information System (MIS) within MINSA.

- Designing and conducting training programs on the FMS and the MIS, and on personnel, supervisory, and logistic skills related to the provision of the MH/CS services described above.

The MFD component will be carried out during the second through fifth years of the project through a long-term contract with the same institution that helps MINSA implement the

MH/CS component. This institution will furnish the necessary technical assistance and training in management skills in all 19 SILAIS. In concert with these efforts, the U.S. Public Health Service will procure on MINSA's behalf all commodities needed to support the MFD component. All activities of this component will be coordinated through the Comisión Nacional de SILAIS and MINSA's Office of External Cooperation with related efforts funded by other donors.

The activities to be supported by the Management/Financial Decentralization Component are described below.

a. Management/Financial Decentralization Activities

1) Refine and Help Establish an Optimum SILAIS Structure

During the second project year (the first full year of the long term technical assistance team's presence), a Management and Financial (M&F) Specialist on the long-term TA team will assist MINSA in defining and implementing an optimum SILAIS organizational structure with clear functions assigned to major positions.

Annex D, "Administrative Analysis", to this Project Paper describes the notional SILAIS administrative structure already in place. It is important to emphasize, though, that as the design of DHS was being completed, this structure was only just emerging in practice. Its utility had yet to be tested by experience.

Accordingly, the first task of the M&F Specialist and his/her MINSA colleagues under this component will be to conduct a Management Analysis and Inventory-Diagnostic of the SILAIS structure(s) as it/they exist as of the TA team's arrival. This effort will focus on determining the financial and managerial resources and needs of the SILAIS. Available analyses and data developed by other donors will be utilized and enlarged upon as appears desirable. This activity will require two person-months (PMs) of the M&F Specialist's time, plus two PMs of short-term international consultants. It may also be necessary to hire short term Nicaraguan consultants. The inventory will be carried out at the 19 SILAIS by MINSA personnel and the short-term consultants, and will be coordinated by the M&F Specialist.

This inventory will permit further elaboration of strategies to be applied at the SILAIS and Central levels, and will provide updated information on the number, type and characteristics of management and human resources that will be required under the new system. The results of this inventory may suggest design adjustments to be made in the SILAIS management and administrative systems.

Once the results of this inventory are in hand, the M&F Specialist and his/her MINSA colleagues will report to MINSA and USAID on their findings, assess the strengths and weaknesses of the extant systems, and propose modifications (if and as appropriate) to the

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decree that formally established the SILAIS in mid-1992. The amended decree (if necessary) will be issued as soon as possible following review and approval of this report.

2) Develop a SILAIS Financial Management System

Using the results of this inventory of existing SILAIS administrative and management structures, the Management and Financial Specialist, along with short-term Financial/Accounting specialists, will work with MINSA to develop a Financial Management System (FMS) and procedures for the SILAIS level. This activity will begin early in the second Project Year (PY). Design of the FMS will, during its initial phase, identify specific cost indicators to be included in planning and programming the use of local resources. The financial methodology so developed will be closely coordinated through the Comisión Nacional de SILAIS with related efforts being undertaken by PAHO, and with the GON Technical Secretariat that is to be established under the planned USAID-assisted Financial Management Reform Project (FMRP, 524-0330).

Design of the FMS should be completed by the middle of PY Two. Following several months of training in its use, the system should be fully operational on a test basis in one selected SILAIS by the end of the second Project Year.

3) Extend the FMS to Additional SILAIS

After one year of testing and refining its operations, it will be possible to begin extending the FMS to the rest of Nicaragua's 19 SILAIS. The decision as to the speed at which to expand the FMS will be based in large part on the results of a mid-term evaluation of DHS scheduled to take place at the beginning of Project Year Three.[23] As the FMS expands, MINSA and the SILAIS (with the assistance of the long-term TA team) will use this systems to determine - and ultimately control - their costs of operation.

4) Improve MINSA's Information Technology

The lack of information technology resources and modern management tools makes it difficult for MINSA to manage its various health programs efficiently, and hampers the Ministry's efforts to allocate its medical supplies and personnel appropriately and to control and monitor expenditures accurately. Available information systems (whether manual or automated) are not responding to the critical needs of MINSA and the SILAIS.

These critical needs are apparent in two areas. The first is a need for computers and application software that will help MINSA and the SILAIS to manage resources and health services efficiently. The second is to identify and train human resources to manage and use the equipment and software effectively.

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[23] This evaluation is described in further detail in Section VI, "Monitoring, Evaluation, and Audit Plan".

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This subcomponent of DHS will attempt to satisfy these needs. It will do so by providing the technical assistance, commodities and training needed to:

- Create an Information Support Unit (ISU) within MINSA;
- Help MINSA establish an Information Technology Strategic Plan; and
- Establish a Management Information System (MIS) that will help enable MINSA manage the decentralization process efficiently, monitor and control improvements in health service delivery, and manage its financial and human resources effectively.

These interventions will institutionalize the use of information technology as an integral part of MINSA operations, and will help MINSA satisfy (in coordination with the USAID-assisted Public Sector Financial Management Project) Ministry of Finance (MiFin) reporting requirements.

Given the importance of this subcomponent to the overall success of DHS, two members of the long-term technical assistance team, a Senior Systems Analyst/Manager and a Systems Analyst/Programmer, will be assigned to assist MINSA in its implementation. Their responsibilities are explained in more detail below.

The activities of the Information Technology subcomponent will be as follows.

a) Establishment of an Information Systems Unit (ISU)

First, the long-term TA personnel cited above will help MINSA establish a central Information Systems Unit (ISU). The primary tasks of the ISU will be to establish information technology policies, standards, and priorities; to coordinate all information technology initiatives (including those funded by external donors) within MINSA and the SILAIS; and to advise MINSA on the allocation of resources.[24] At the same time, the ISU will provide services, technical support, and information management products to the other MINSA units and to the SILAIS. This Information Systems Unit should be operational within six months of the TA team's arrival.

b) Establishment of an Information Technology Strategic Plan

Once the ISU is in place, it will help MINSA develop an Information Technology Strategic Plan. To establish this Plan, the ISU will conduct (with the assistance of the long-term TA team) a detailed analysis of the computer and software requirements at MINSA Central and at each SILAIS. The resulting report will detail current information management procedures (and assess the efficiency and effectiveness of those procedures), physical infrastructure,

[24] In this context, the ISU will work closely with the Comisión Nacional de SILAIS and MINSA's Office of External Cooperation.

hardware and software resources, staff computer capabilities, and information flows and formats, and will specify the variables (e.g. number of employees included in, and cost of, each employment category; resources consumed by each health facility, etc.) that any MINSA Management Information System should monitor.

Based on this analysis, the ISU will prepare and submit for approval by MINSA and USAID a Strategic Plan that one, summarizes MINSA and SILAIS information management objectives; two, defines what resources are needed to achieve those objectives; three, identifies the gap between available information technology resources and the resources required; and four, suggests priorities for satisfying the critical requirements. The Plan will then suggest and advocate adoption of policies to allow the MINSA and the SILAIS to use information technology resources effectively. It is expected that this plan will be completed and approved within six months of the establishment of the ISU.

c) Design and Operation of a Management Information System (MIS)

Upon completion and approval of the Strategic Plan, the technical assistance team will work with the ISU to design and put into place a Management Information System. The MIS will provide information on MINSA's administrative and financial management requirements in areas including accounting, budgeting, human resources, payroll, inventory management, office automation, and facilities management.

Using the recommendations of the Strategic Plan as a guide, the long-term TA team will work with MINSA to prepare a conceptual design of the MIS. This design will highlight vertical (SILAIS/MINSA) and horizontal (SILAIS/SILAIS) integration as well as the required integration with other ministries (such as MiFin), data standards, operating procedures, and information flows. A critical objective of the design will be to standardize systems, policies, and information management procedures throughout MINSA and the SILAIS. This will require coordination with the efforts of all donors through the Comisión Nacional de SILAIS.

To help design the MIS, the long-term TA team will use the recommendations of the Strategic Plan as a guide to assist MINSA in drawing up a detailed list of and specifications for hardware, commercial software (e.g. Lotus 123, Word Perfect, etc.), application software (packages for specific functions such as accounting, human resources management, etc.) and peripheral requirements needed for the MIS. These specifications will then be provided to the USPHS, which will procure these commodities on MINSA's behalf. USAID and MINSA expect that all requirements will be met with commercially available micro-computers and microcomputer-based software. Efforts will be made to identify off-the-shelf solutions, and/or to identify applications previously developed and implemented in similar institutions in the region, as well as applications available from international and other health organizations (e.g., PAHO and CDC). Given the availability of these resources, it may not be necessary for project implementors to develop their own software.

The conceptual systems design and the proposed commodity list will be submitted to and approved by both MINSA and USAID by the end of the second Project Year. Once this approval has been granted, the TA team will help MINSA to develop a detailed implementation plan for establishment and operation of the MIS. This plan will include implementation schedules, project milestones, training plans and staffing requirements, management plans, expected equipment delivery schedules, projected coordination efforts among MINSA, the SILAIS, MiFin, and other donors through the CNS. The detailed implementation plan will be reviewed and approved by both MINSA and USAID before it is put into effect.

Upon approval of the implementation plan, MINSA (with the assistance of the long-term TA team) will proceed to install this MIS in the selected pilot SILAIS (the same one used for the Financial Management System) and to train the personnel in that SILAIS in its use. The system is to be fully operational in the pilot SILAIS by the middle of the third Project Year. After a year of fine-tuning its operations, MINSA will extend this MIS to the other 18 SILAIS. USAID and MINSA expect that this process will be completed by the middle of the fifth (and last) Project Year.

Annex M, "Information Technology", describes in illustrative terms the shape that USAID and MINSA expect the MIS to take. The details of the system, of course, will change in response to the findings of the analyses described above; its general parameters, however, will likely not be adjusted significantly.

In brief, the SILAIS are expected to be the level at which most of the information and data is collected, aggregated, processed, and analyzed. This data will be forwarded to the central MINSA ISU for consolidation and dissemination. The systems to be installed at each SILAIS will vary according to local requirements; however, the basic microcomputer hardware and software at each SILAIS will include a file server and five workstations linked via the Novell Netware local-area-network (LAN) operating system.[25] Each workstation will be equipped with word processing and spreadsheet software. In addition, the SILAIS system will have software capabilities for telecommunications (modem and communication software), graphics, desktop publishing, statistics, and utilities.[26] All workstations will have access to a laser printer and a dot matrix printer connected via the LAN; the entire system will be protected by a UPS. The system at the central MINSA information systems unit will consist of a similar configuration, but with ten workstations.

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[25] Novell Netware will be the LAN operating system to facilitate compatibility with the Health Information System (HIS) that is to be installed in MINSA with support from the Spanish government. To the extent possible, the design of the MIS system will integrate existing MINSA computers.

[26] Initially, data interchange and transfer between the SILAIS, MINSA, and MiFin is expected to be carried out by diskette rather than by telecommunication. This should change, however, as MINSA personnel become familiar with the system and as Nicaragua's telecommunications capacity improves.

Delivery of information technology resources to MINSA and the SILAIS will be conditioned on their providing appropriate sites for system installation. The long-term TA team will certify that all sites scheduled to receive equipment have electrical outlets of sufficient capacity, and provide adequate security. The team will advise MINSA and SILAIS managers on how to determine and meet the minimum physical requirements.

b. Technical Assistance in Support of MFD Activities

As noted, the MFD component will be carried out during the second through fifth years of the project through a long-term contract with the same U.S. institution that helps MINSA implement the MH/CS component. Three members of the long-term TA team will be dedicated to this component on a full-time basis:

- A Management and Finance (M&F) Specialist, who will assist MINSA in defining and implementing an optimum SILAIS organizational structure; developing, testing, and extending a Financial Management System; and designing and overseeing training for MINSA staff in the operation of that system.

- A Senior Systems Analyst/Manager, who will manage all project information technology initiatives, including the establishment of the ISU, the development of an Information Technology Strategic Plan, the design and installation of the MIS, and the provision of on-the-job training for the potential systems managers, administrators, and programmers who will assume responsibility for the MIS upon completion of the DHS Project.

- A Systems Analyst/Programmer, who will provide the technical expertise and knowledge needed to coordinate and conduct personnel training (including on-the-job training of the potential systems managers, administrators, and programmers who will eventually assume responsibility for the MIS), coordinate and participate in the installation and implementation of hardware and software, conduct research and analysis of off-the-shelf application software, and resolve other technical issues.

These experts will all assume their duties at the onset of the long-term TA contract, and will serve through the PACD. They will reside in Managua.

In addition, the long-term TA team will include a Training and Outreach Specialist who, as noted, will divide his/her time between design and oversight of training required for the MH/CS component and training required for the MFD component.

The long-term TA contract will also include funds for 36 person-months (PMs) of short-term technical assistance. Tentatively, 12 PMs will be allocated to the MFD component. Bidders for the long-term contract will be invited to describe in their proposals how they would program these short-term resources.

Finally, the MFD component will also benefit from the services of the five SILAIS Administrative Assistants (SAAs) whom the institutional contractor will hire locally. These SAAs will be responsible for helping MINSA coordinate all DHS inputs, including those of the MFD component, at the SILAIS level.

c. Training in Support of MFD Activities

To enable MINSA personnel to acquire the skills they need to use DHS resources, and thus to support preventive health care efforts effectively, the MFD component of DHS will offer five types of training: in general management skills, in general computer skills, in use of the new Financial Management System, and in use of the new Management Information System, and in Transportation and Logistics. As with the MH/CS component, the training itself will be preceded by orientation workshops, curriculum design, and training-of-trainers workshops.

1) Orientation Workshops on Entire MFD Component

Following the workshops that will be held to orient senior SILAIS and MINSA Central executive personnel to the MH/CS component, the Management and Finance Specialist and the Training and Outreach Specialist will prepare and conduct a second series of two-day orientation workshops focused on the MFD component early in the second Project Year. The purpose of these workshops will be to orient the Directors and Sub-Directors of all 19 SILAIS and their counterparts in MINSA headquarters (a total of some 200 participants) to the objectives of the MFD component, and to explain to them in general terms the revised financial and MIS systems that will be developed under the DHS Project. A more detailed description of these systems will, of course, not be possible, for they will not have been designed at the time the workshops are held. Nonetheless, USAID and MINSA believe it wise to conduct these workshops early in the project as a means of establishing credibility with, clarifying any confusion on the part of, and obtaining feedback from, senior SILAIS staff. Their early participation will make it easier to design and implement the Financial and Management Information Systems later.

2) Development of Training Plan for General Management Skills (GEMS)

Once the project-sponsored Financial Management System described above has been approved, the Training and Outreach Specialist and the Management and Finance Specialist will use the feedback generated from these orientation workshops, from the SILAIS assessment, and from the MINSA Human Resources Assessment to be carried out under the Accelerated Start Component to work with MINSA to develop a plan for training SILAIS personnel in general management skills (GEMS). This will involve first, assessing the existing managerial skills of MINSA employees; and second, establishing detailed curricula, manuals, and supervisory guides appropriate to the existing skill levels. To the extent possible, the plan will seek to provide MINSA personnel with the management skills they

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need to carry out and oversee the integrated maternal health and child survival interventions skills described in Section III.B.2 above.

USAID and MINSA expect that the long-term TA contractor may wish to subcontract with a local source of managerial expertise to help design this training plan and then to carry it out. This training plan is to be submitted to USAID and MINSA for review and approval by the middle of Project Year Two.

3) Training of Trainers (TOT) for GEMS Training

Upon approval of the MFD training plan, the T&O Specialist and the M&F Specialist (with assistance from short-term consultants as required) will provide a twelve-day Training Of Trainers session (TOT) for 12 professionals selected from the ranks of the "Ejecutivos Administrativos" at SILAIS and from MINSA Central.[27] These 12 professionals will be the core MINSA trainers for subsequent training in general management skills to be provided to a wider audience of administrative and managerial personnel. The TOT sessions will be divided into three modules of three days each (one module for each for general management skills, personnel management skills, and supervisory skills). The TOT program will ask participants to suggest changes in or additions to the curriculum that will be presented in the training modules at the next level (see below).

4) General Management Skills (GEMS) Training

Once the TOT sessions are completed, the GEMS training effort will be launched. This program, which will begin late in Project Year Two and continue for approximately eight months, will be targeted at some 500 Directors, Sub-Directors, Ejecutivos Administrativos, and other administrative personnel chosen from the 19 SILAIS and from MINSA Central. Like the preceding TOT sessions, the GEMS training will be divided into three modules of three days each (one module for each for general management skills, personnel management skills, and supervisory skills, particularly those related to the provision of the MH/CS services DHS will promote).

Given that the subject matter of the GEMS training may, unlike the MH/CS training described above, be somewhat outside the professional experience of the personnel involved, USAID and MINSA do not expect to be able to carry out the training exclusively through MINSA personnel. Accordingly, the long-term contractor will provide (possibly through the local subcontract mechanism mentioned above) specialized short-term trainers to assist in the GEMS effort. Each of these short-term specialists will work with a team of three MINSA staffers trained under the TOT program; there will therefore be a total of four GEMS training teams. The 500 trainees will be divided into 40 groups of between 10-15 persons each; thus, each four-person training team will conduct 10 nine-day GEMS sessions.

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[27] Tentatively, USAID and MINSA expect that eight trainers will come from the SILAIS, while 4 more will come from MINSA Central.

5) General Computer Skills

While the GEMS training effort is underway, the MFD component will also offer three-week courses in general computer skills to approximately 250 SILAIS and MINSA Central employees. Trainees will be selected from among the "Personal Administrativo" and "Ejecutivo Administrativo" levels. The courses will be divided into three one-week modules on computer operation and the Disk Operating System (DOS); word processing; and spreadsheet software. The 250 trainees will be divided into 25 classes of ten persons each; thus, this computer training will require some 75 weeks, or approximately 18 months, to complete. These courses, which are to begin in the second half of Project Year Two, will be conducted by local specialists contracted by the long-term institutional contractor.

6) Training in Operation of the FMS

As the Financial Management System is installed in the SILAIS, the TA team's T&O and M&F Specialists, with short-term assistance as required, will help MINSA provide training in its operation. A first group of some 12 trainees from the "Ejecutivo Administrativo" level of the SILAIS in which the FMS is first installed will be trained in its operation during the second half of Project Year Two. Then, beginning approximately a year later, training will be provided for personnel from other SILAIS and MINSA Central.

This training will consist of short courses of two weeks each. The subjects covered will include budget formulation, execution and control, cash management, and cost and accounting systems. By the end of the project, approximately 250 MINSA employees will receive training in FMS operations.

7) Training in Operation of the MIS

Training will be critical to the success of the information system. Since there are currently various computerization initiatives within MINSA, some technical capabilities and skills exist at the central level. Their appropriateness and depth, however, is not readily apparent. On the other hand, at the SILAIS level, computer expertise is either very limited or non-existent. Therefore, identification, training, and nurturing of a technically skilled, MIS-literate staff at the SILAIS, as well as MINSA Central, will be a major project objective. DHS will support training in the following three areas, all of which will stress not merely how to operate the system, but also how to generate, analyze, and apply the data it will provide.

a) Systems Management/Administration Training

This effort will train all those identified as potential systems managers/administrators. SILAIS management, with the assistance of the institutional contractor, will choose at least two individuals at each SILAIS to become the system managers/administrators. These individuals will be given on-the-job training (OJT) by the Senior Systems Analyst and the Systems Analyst/Programmer in areas such as technical resources management, LAN

administration (Novell Netware as well as generic networking concepts), computer center management, software installation and troubleshooting, and the use of simple telecommunications concepts. It is expected that this on-the-job training will form a routine part of the day-to-day responsibilities of these members of the technical assistance team, and that it will continue throughout the life of DHS. To supplement this on-the-job training, the project budget reserves funds for up to 1200 person-days (30 days of training for each of 40 trainees) of specialized classroom training in topics related to the MIS.

b) Technical Staff Training

This effort will train individuals identified as potential systems analysts/programmers. The Senior Systems Analyst/Manager and the Systems Analyst/Programmer, together with SILAIS upper management, will identify at least two individuals at each SILAIS to become the systems analysts/programmers there. Like the training for potential systems managers, training for these individuals will be conducted on the job, and will include in-depth work in areas such as microcomputer concepts (diagnosis, troubleshooting, and routine maintenance), microcomputer software packages (Lotus, WordPerfect, Clipper, utilities, etc.), LAN concepts, telecommunication concepts, database management, and other areas necessary for the proper utilization of all SILAIS information technology resources. Again, on-the-job training will form a routine part of the day-to-day responsibilities of these members of the technical assistance team, and that it will continue throughout the life of DHS. To supplement this OJT, the project reserves funds for up to 1200 person-days (30 days of training for 40 trainees) of specialized classroom instruction in topics related to the MIS.

c) General MIS User Training

This training will be for all individuals in a SILAIS that will need access to the computers and other resources used in the MIS (i.e. secretaries, data entry clerks, medical personnel, etc.). Users will be trained in the appropriate use of microcomputer software packages (Lotus, WordPerfect, etc) as they apply to the MIS. USAID and MINSA estimate that up to 400 employees will receive two days each of this general MIS user training.

8) Transportation and Logistics

Finally, the MFD component will offer courses in Transportation and Logistics to some 200 MINSA and SILAIS personnel involved in warehousing, shipping, maintenance, and clerical work. These courses will be taught by one two-person team of MINSA personnel already trained in the new FMS and MIS systems, supplemented by local short-term technical assistance if required. The subjects to be covered are to include inventory control and management, and the use of MIS and FMS software related to logistics. The trainees will be divided into ten groups of 20 participants each; each course will last for two weeks. Thus, the trainers will need some 20 weeks to complete this effort. This training is to begin in Project Year Three.

4. Alternate Sources of Finance

Although many of the DHS Project elements will reduce, rather than increase, MINSA's recurrent costs by introducing greater efficiencies of operation, the sustainability of MINSA's health delivery system is very much in question. The interventions of the MH/CS and MFD components of DHS notwithstanding, MINSA will continue to experience extreme difficulty in providing high quality health services - especially primary care, which has been low on its list of priorities - because of its limited financial resources. In 1992, MINSA consumed 16.29% (C$ 421.8 million, or approximately US$ 78.8 million) of the GON's annual budget.[28] This percentage is not likely to grow in the near to medium-term.

As shown in Tables III-2 and III-3 below, some 88% of MINSA's 1992 budget can be described as recurrent, while only 23.5% of its total budget is devoted to primary care:

Table III-2: Summary of MINSA Budget by Line Item, 1992 (Cordoba Oro)[29]

Budget Category	Amount Budgeted	% of Total
Personnel	166,715,714	39.52
Non-Personal Services	38,301,579	9.08
Materials and Supplies	125,282,924	29.70
Current Transfers[30]	41,160,473	9.76
Sub-Total, Recurrent Costs	**371,460,690**	**88.06**
Machinery and Equipment	17,855,000	4.23
Construction and Improvements	32,500,000	7.70
Sub-Total, Non-Recurrent Costs	**50,355,000**	**11.94**
TOTAL, ALL COSTS	**421,815,690**	**100.00**

[28] República de Nicaragua, Ministerio de Finanzas. "Presupuesto General de la República, 1992", pp. 25 and 101.

[29] During PP design, C$5.35 = US$1.00.

[30] Includes payments to FETSALUD, subsidies for transportation and food, scholarships, and other miscellaneous costs.

Table III-3: Summary of MINSA Budget by Activity, 1992
(Cordoba Oro)

Budget Category	Amount Budgeted	% of Total
Administrative Activities	61,602,505	14.60
Community Projects	50,355,000	11.94
Primary Care	99,218,419	23.52
Public Sanitation	22,283,359	5.28
Secondary Care	139,360,736	33.04
Specialized Care	44,198,768	10.48
Human Resource Development	5,926,904	1.41
TOTAL, ALL COSTS	**421,815,690**	**100.00**

Source: Républica de Nicaragua, Ministerio de Finanzas. "Presupuesto General de la Républica, 1992", pp. 102-105

Moreover, while reliable figures on actual donor outlays in support of MINSA efforts are difficult to obtain due to the multiplicity of accounting methods involved, the best estimates available to USAID suggest that MINSA receives the equivalent of another $40 million annually (half again as much as its own annual budget) in external assistance, some 80% of which goes for recurrent costs. Thus, even to maintain the present, inadequate level of services, MINSA must continue to rely on substantial donor subsidies.

The situation is simply not sustainable, and senior officials at both MINSA and the Ministry of Finance realize this. Thus, in collaboration with USAID and other donors, the GON has committed itself to an ambitious reform program in the health sector. The most significant initiative to date is to occur under the auspices of the U.S.-funded P.L. 480 Title III Food for Development Program. As part of this program, a three-year effort that, beginning in 1993, will link imports of wheat, soybean meal, and tallow to policy changes in the agricultural and health sectors, the GON has pledged that by 1995, MINSA will have identified and put into practice several methods of cost containment and cost recovery. As first steps in this process, the GON has agreed to a FY 1993 Title III policy agenda that calls for Nicaragua to:

- Present to A.I.D. its time-phased plan for cost containment and cost recovery in the health sector. This plan will address, inter alia, decreasing the list of essential

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medicines, increasing the use of paramedics, the monetization of employee benefits, and the development of fee schedules for curative services.[31]

- o Devote not less than 30% of MINSA's total budget to primary health care activities.

Prior to signature of the FY 1994 Title III Agreement, the GON is to be able to confirm that the various cost containment and recovery measures identified in the 1993 plan have in fact been adopted, and that expenditures on primary health care are at least 35% of the MINSA budget. Prior to signature of the FY 1995 Agreement, the GON is to demonstrate that these various measures are in full force and effect, and that expenditures on primary health care have risen to 40% of the MINSA budget.

The GON's intentions are laudable, and have been well received by the donor community. The policy reforms to be enacted under the Title III Program and supported by DHS, for example, are consistent with and supportive of similar efforts sponsored by other donors, and will be closely coordinated with the emerging efforts of those donors as implementation of DHS proceeds. Nonetheless, important elements of the opposition Sandinista National Liberation Front (FSLN) and of the Sandinista-affiliated Federation of Health Workers (FETSALUD) remain committed to the seductive social mandate of free health care for all. There remains (particularly given the politically polarized nature of Nicaragua's labor relations) a significant possibility that it will prove difficult for the GON to convert these intentions into practice. To carry them through, Nicaragua will need USAID's firm support.

Accordingly, the fourth component of DHS will help MINSA test, refine, and put into place "Alternate Sources of Finance" (ASF) to help it shoulder its huge recurrent cost burden and fulfill its pledge to devote more resources to primary care. The ASF component will work with MINSA and the SILAIS to:

- o Develop less expensive ways of providing excessively costly services and interventions, and put these alternatives into practice.
- o Help MINSA develop and put into place a new fee-for-service schedule.
- o Conduct studies to identify new sources of income.
- o Carry out seminars to build consensus within MINSA in support of these policy measures.

The activities of the ASF component, and the technical assistance that will be needed to carry it out, are described in more detail below.

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[31] Given the DHS Project's emphasis on expanding access to and use of **preventive** health care services, which in the long-term are expected to reduce health care costs, it would be inappropriate - and counter-productive - for MINSA to introduce fees for the provision of preventive services such as contraceptives.

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a. Development of Alternatives to Excessively Costly Interventions and Services

As noted, recent efforts by USAID, other donors, and MINSA itself have provided senior GON officials with a clear view of which of the services and interventions MINSA now provides are the most costly, and of why they cost as much as they do. The challenge now before MINSA is that of finding ways to provide the same or similar services at a lower cost.

Preliminary information from various donor studies suggests that, at present, the most costly practices include:

1) Incorrect prescription practices and over prescription

A list of essential drugs accompanied by therapeutic guidelines prepared by MINSA authorizes the use of no fewer than 397 different products. This compares unfavorably with the 226 products deemed necessary according to WHO guidelines. A recent USAID-funded study suggests that MINSA physicians are over-prescribing these products, and that up to 50% of the cost of a health care visit is attributable to prescribed medicines.[32]

This heavy reliance on prescription drugs is reflected in the MINSA budget. In 1990, that budget allocated the equivalent of US$ 21.6 million to medicines (US$ 5.60 per capita), while MINSA data indicate that US$ 42 million were expended. This gap was largely filled by donors. This expenditure is significantly higher than that of many other developing countries, including several with per capita incomes higher than Nicaragua's.

2) Distribution and Storage of Drugs

Preliminary investigations funded by other donors suggest that MINSA suffers from poor distribution and storage of drugs and pharmaceuticals. This results in product spoilage and losses. In conjunction with the World Bank and DANIDA (the Danish International Development Agency), the ASF component of DHS will examine the existing system and recommend improved management procedures.

3) Use of physicians to provide primary care

Currently, MINSA delivers much of its primary care through relatively highly-priced physicians instead of through nurses and auxiliaries. This practice is linked to, and

[32] Olave and Zotelle, "Health Care Costs Study for the Grenada and León SILAIS", USAID, 1992.

indeed may be said to stem in part from, the politically sensitive requirement that MINSA hire all medical school graduates.

4) In-Kind Delivery of Benefits and Services and Excessive Allowances

MINSA now provides transportation, food, uniforms, and a variety of other benefits and allowances to its employees on an in-kind basis.[33] MINSA acknowledges that these practices impose a large cost burden, and has proposed to work to either eliminate or reduce such allowances and to explore the possibility of providing some or all of these benefits in cash. In addition, the Ministry itself provides food and laundry services for patients in its hospitals; it may prove less costly to contract with private providers for these services.

By the time the long-term technical assistance team to be funded by DHS arrives, MINSA and USAID expect that the most costly practices, and the ones most amenable to elimination or reform, will have been identified. Short-term technical assistance provided under the Accelerated Start component will have helped MINSA introduce initial pilot measures to reform these practices. There will, however, remain a great deal of work to do in terms of assessing the effectiveness of these initial reforms, modifying them as necessary in light of changing circumstances, and finding ways to extend successful reforms throughout the entire SILAIS system. The TA team will work with MINSA to help it meet these challenges. For example, it may be possible to save a good deal of money by contracting with private entities to provide food and laundry services without diminishing their quality. Some particularly costly practices could be eliminated altogether: for instance, rather than having a full-time staff member assigned every night to each health service site, one roving staffer might cover several facilities at once. Other such **cost-containment** alternatives may include limiting physicians to the provision of secondary or specialized care; locating physicians only at the health center or hospital level rather than at health posts; and altering prescription practices to allow the use of generic drugs and reduce over- and indiscriminate prescription of drugs. Analysis of the effectiveness of the pilot measures already introduced and of further cost-containment alternatives will begin immediately upon the long-term TA team's arrival.

The speed and extent to which MINSA will be able to extend these measures throughout the health care system will depend, at least in part, on political factors outside the project's control. The Title III policy agenda, and the food imports contingent on its fulfillment, will provide one important mechanism to encourage the GON to maintain its resolve to cut excessive health sector costs. The problem, however, is not merely political; in addition, MINSA will require substantial technical expertise to devise creative and politically

[33] These other benefits include placing at least one full-time staffer on night duty (with corresponding extra pay) at each health facility, and paying "displacement" allowances to employees who work in areas in which they are not legally resident.

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acceptable ways of introducing these necessary but potentially painful measures. The long-term technical assistance team will provide this expertise throughout the life of DHS.[34]

b. Development and Enactment of a New Fee-for-Service Schedule

As noted in this PP's description of the Accelerated Start Component, USAID used PD&S funds in 1992 to support a study of the cost to MINSA of materials, drugs, and personnel (including indirect costs) at several SILAIS. Similarly, the IDB is funding a study of the **demand** for such services. With the assistance of the long-term institutional contractor, the ASF component will use the results of these two studies to help MINSA design and put into place, on a pilot basis, a fee-for-service schedule at selected health facilities as part of its fulfillment of the FY 1994 Title III policy agenda. The TA team will then work with MINSA to refine and expand this fee schedule to other facilities over the life of the project.

c. Conduct Studies to Identify Alternate Sources of Income

Although MINSA and USAID believe that the cost containment and cost recovery alternatives set forth above offer great potential for cutting costs and expanding revenue, they also realize that these measures alone will likely not be sufficient to make Nicaragua's health care system financially sustainable. To move toward that objective, it will be necessary to identify new sources of revenue. To help MINSA do so, the ASF component will fund up to four feasibility studies of such potential new sources. The actual Scopes of Work for these studies, and their timing, will be determined by the long-term institutional contractor (in consultation with USAID and MINSA) within three months of the team's arrival in Nicaragua; the studies themselves will be carried out within the first two years of the TA team's presence.

Notionally, USAID and MINSA expect these studies to focus on topics such as:

- The possibility of imposing special taxes (e.g. on liquor and cigarettes, on car rentals, and/or on airline passengers) whose the revenues might be dedicated to MINSA.

- The possibility of allowing MINSA or the SILAIS to retain and manage revenues collected locally.

- The possibility of reprogramming savings generated by cost-containment measures to defray the local expenses of the facilities where those cost savings are obtained.

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[34] While the current Title III Program is scheduled to end after FY 1995, it is highly unlikely that all the problems involved in assuring the financial sustainability of Nicaragua's health care system will have been resolved by then. MINSA will continue to need substantial assistance after 1995 to maintain and extend the initial series of reforms described in this PP, and to develop new measures that respond to changing circumstances.

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Each of these studies will require between one and four PMs of short-term technical assistance.

In the Project Grant Agreement for DHS, the GON will covenant to participate in and assist these studies. The GON will also covenant that, within six months of the receipt of each study of possible alternate revenue sources, it will either enact (on at least a pilot basis) the recommendations of that study or satisfy USAID as to why it should not.

d. Seminars to Build Consensus in Support of Policy Reform Measures

The policy measures described above may seem unremarkable. In the Nicaraguan political context, however, they are likely to prove highly controversial. To help deal with this controversy, the project will support a series of one-day workshops for SILAIS Directors and senior personnel from MINSA Central to review the results of the pilot policy changes already introduced and the findings of the studies of alternate sources of income. These seminars will discuss the policy implications suggested by the pilot measures and by the studies, and will examine how and whether the various measures proposed might be extended throughout the health care system. These workshops will be presented by the short-term consultants who carried out the studies and by the Chief of Party of the long-term institutional contractor.

e. Technical Assistance in Support of the ASF Component

MINSA will carry out the ASF component with the technical assistance of the Chief of Party (COP) of the long-term institutional contractor that will help MINSA implement the MH/CS and MFD components. The same contractor will provide up to twelve person-months of short-term TA to assist in the development of policy measures and the conduct of studies of alternate sources of income. USAID expects that the COP will devote approximately 50% of his/her time to the ASF component; the balance will be devoted to oversight of the activities of the other components. The COP will arrive in late in the first Project Year and remain through the March 1998 PACD. S/he will reside in Managua.

SECTION IV: IMPLEMENTATION ARRANGEMENTS

A. Schedule of Major Implementation Actions

The key actions scheduled to take place under each of the project components are summarized in the tables below. Annex L, "Detailed Implementation Schedule," provides GANTT charts illustrating the sequence in which activities are to take place.

Table IV-1: Major Implementation Actions, Accelerated Start Component

ACTION	ESTIMATED DATES:	
	BEGIN:	END:
PIO/T for Gray Amendment Firm	2/93	3/93
PIO/T for U.S. Public Health Service	3/93	4/93
Sign PASA with U.S. Public Health Service	6/93	
Contract with Gray Amendment Firm	6/93	
TA from U.S. Public Health Service:		
Survey of Immediate Commodity Needs	6/93	7/93
Complete Commodity Lists	7/93	8/93
Place Commodity Orders	8/93	
Receive Commodities	11/93	1/94
Training in Commodity Use	11/93	1/94
TA from Gray Firm:		
Survey Other Donor Activities	7/93	8/93
Human Resources Assessment	7/93	8/93
Baseline Data Study	8/93	11/93
Analyze Cost Containment Alternatives	8/93	11/93
Design Fee Schedule for Curative Care	9/93	12/93

Table IV-2: **Major Project Mobilization Actions**

ACTION:	ESTIMATED DATES:	
	BEGIN:	END:
PIO/T for Long-Term TA Contract	3/93	4/93
Prepare and Issue RFP for LT TA Contract	4/93	5/93
Receive Offers	6/93	
Technical Review	7/93	8/93
Contract Negotiations	8/93	9/93
Award Contract	9/93	
Long Term Tech. Asst. Team Arrives	11/93	

Table IV-3: **Major Implementation Actions, Maternal Health and Child Survival Component**

ACTION:	ESTIMATED DATES:	
	BEGIN:	END:
Training in Commodity Use[1]	11/93	1/94
Long Term Tech. Asst. Team Arrives	11/93	
MH/CS Orientation Sessions	12/93	12/93
Develop MH/CS Training Plan	12/93	2/94
Subcontract with Local Ad Firm	1/94	
Design IEC Campaign	2/94	5/94
Training of Trainers for HIT, HPT	2/94	3/94
Health Intervention Training (HIT)	3/94	8/96
Short-Term U.S. Training	4/94	9/96
Pre-Test IEC Materials	6/94	8/94
Conduct IEC Campaign	9/94	12/97
Health Promotion Training (HPT)	5/94	12/95
Mid-Term Evaluation	6/95	

[1] The initial stock of commodities will be ordered by the U.S. Public Health Service under the Accelerated Start Component.

Table IV-4: **Major Implementation Actions, Management and Financial Decentralization Component (Management Subcomponent)**

ACTION:	ESTIMATED DATES:	
	BEGIN:	END:
Long Term Tech. Asst. Team Arrives	11/93	
Inventory SILAIS Structure	12/93	2/94
General Orientation on MFD Component	1/94	1/94
Subcontract for MFD Training*	1/94	
Design Financial Management System	1/94	4/94
Issue New SILAIS Decree(s)*	3/94	
Design General Mgt. (GEMS) Training	4/94	6/94
Develop FMS Curriculum	4/94	6/94
Training of Trainers for GEMS	7/94	7/94
FMS Training in Pilot SILAIS	7/94	10/94
GEMS Training	8/94	4/95
General Computer Training	4/94	3/96
Transport/Logistics Training	10/94	10/95
Mid-Term Evaluation	6/95	
Extend FMS to 19 SILAIS	11/95	4/97

* If necessary.

Table IV-5: **Major Implementation Actions, MFD Component (Information Technology Subcomponent)**

ACTION:	ESTIMATED DATES:	
	BEGIN:	END:
Long Term Tech. Asst. Team Arrives	11/93	
General Orientation on MFD Component	12/93	1/93
Establish Information Systems Unit	10/93	4/94
Establish Information Plan	4/94	7/94
Design Management Info. System (MIS)	7/94	10/94
MIS Training in Pilot SILAIS	11/94	3/95
Mid-Term Evaluation	6/95	
Extend MIS to 19 SILAIS	4/96	4/97

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Table IV-6: **Major Implementation Actions, Alternate Sources of Finance Component**

ACTION:	ESTIMATED DATES:	
	BEGIN:	END:
Analyze Cost Containment Alternatives*	8/93	11/93
Design Fee Schedule for Curative Care*	9/93	12/93
Long Term Tech. Asst. Team Arrives	11/93	
1st Study of Alt. Income Sources	1/94	5/94
2nd Study of Alt. Income Sources	8/94	11/94
Mid-Term Evaluation	6/95	
3rd Study of Alt. Income Sources	2/95	5/95
4th Study of Alt. Income Sources	8/95	11/95

* To be undertaken by the Gray Amendment firm under the Accelerated Start Component.

B. Procurement Plan

1. Procurement of Technical Assistance

The DHS Project will procure technical assistance through two separate processes. First, USAID will contract with a Gray Amendment firm for implementation of the Accelerated Start Component.[2] Second, USAID will select a long-term institutional contractor through full and open competition to furnish technical assistance and training for the MH/CS, MFD, and ASF components.

a. Selection of the Gray Amendment Contractor

As described in Section III of this PP, the Gray firm will provide the short-term specialists listed in Table IV-7 below to assist MINSA in carrying out a human resources assessment, surveying the activities of other donors, fulfilling the 1994 P.L. 480 Title III policy agenda, and gathering baseline data on project objectives.

[2] Annex N contains a justification for USAID's decision to procure this assistance through the Gray Amendment mechanism. In brief, the Mission's analysis concluded that the Gray mechanism would be the most effective way to acquire urgently needed technical assistance during the project's first year. Other than full and open competition is permitted when contracting with a Gray entity using DA funds, and other mechanisms considered (e.g. IQCs, 8(a) firms) are either too limited in scope or would require too long to contract.

Table IV-7: **Short-Term Positions, Gray Firm Technical Assistance to ASF Component**

Position	Person-Months:	Task(s):
International:		
Human Resources Specialist	1	Human Resources Assessment
Health Management Specialist	1	Other Donor Survey
Health Policy Specialist	2	Policy Reforms
Pharmaceutical Management Spec.	2	Policy Reforms
Health Care Financing Specialist	2	Policy Reforms
Statistical Analyst	3	Baseline Data Collection
Nicaraguan:		
Data Gatherers (5)	3 each	Baseline Data Collection

To initiate procurement of the Gray Amendment contractor, USAID's General Development Office (GDO) will draft and obtain clearance of a PIO/T. Following its signature, USAID will issue a Request for Proposals (RFP) to some four to six firms believed to have the required expertise. A Technical Review Panel will evaluate and rank the responses to this RFP; the USAID Contracts Officer will then begin negotiations with the firm that presents the most advantageous offer. If these negotiations are successful, USAID expects that the Gray firm will begin work in or about June 1993.

b. Selection of the Long-Term Institutional Contractor

USAID will select the long-term institutional contractor through full and open competition among eligible U.S. firms. This long-term contractor will fill the positions summarized in Table IV-8 on the following page.[3]

[3] This PP reflects USAID's best estimate of which technical assistance positions will be filled by "international" personnel and which by Nicaraguans. Bidders for both the technical assistance contracts will be invited to offer their own estimates of the best mix of expatriate and Nicaraguan personnel, and will be encouraged to use qualified Nicaraguans whenever possible.

Table IV-8: Summary of Long-Term Technical Assistance to be Provided under DHS

Position:	Person Months
International	
Chief of Party	51
MH/CS Specialist	51
Training and Outreach Specialist	30
Management and Financial Specialist	51
Senior Systems Analyst/Manager	51
Nicaraguan:	
SILAIS Administrative Assistants (5)	48 each
Health Trainer	21
Systems Analyst/Programmer	51

Working with the USAID Contracts Officer, the Project Officer within GDO will develop the Scope of Work for the contract, evaluation criteria, and will draft and obtain USAID and MINSA approval of the required PIO/T. U.S. firms who have had experience in managing health sector activities such as those planned for DHS will be notified of the procurement through AID/W technical offices, and an advertisement will be placed in the Commerce Business Daily (CBD). The USAID Contracts Officer will then issue a Request for Proposals to those organizations requesting one. The replies to this RFP will be reviewed by a USAID technical committee on which MINSA will be represented. The Contracts Officer will then begin negotiations with and (if these are successful) award the contract to the firm offering the most advantageous proposal to the U.S. Government.

USAID expects that this procurement process will begin upon project authorization, and that the institutional contractor will begin work late in CY 1993. Gray Amendment entities will be encouraged to participate in the competition for this contract, and the RFP will contain a provision requiring at least 10 percent subcontracting to Gray Amendment firms.[4] The long-term institutional contractor's team is to arrive as the Gray Amendment firm is completing its contract, and will serve through the PACD of March 1998.

2. Procurement of Commodities

As soon as possible following authorization of the DHS Project, USAID will execute a Participating Agency Service Agreement (PASA) with the U.S. Public Health Service

[4] USAID expects, however, that the Gray Amendment firm providing short-term TA under the Accelerated Start Component will be excluded from competing for the long-term TA contract.

(USPHS) to procure all project-funded commodities other than contraceptives (which will be procured through AID/Washington) and those commodities which by their nature must be purchased locally. As explained in Section III of this Project Paper, USAID and MINSA worked with the USPHS in the latter's capacity as the implementing agent for the 1990-92 Pharmaceutical Medical Supplies Project, an emergency procurement effort launched shortly after the 1990 election of the Chamorro government. Both USAID and MINSA were extremely satisfied with USPHS's work on that project, and believe that this organization has the requisite expertise to play a similar role in the context of DHS. USAID expects to sign the PASA with the USPHS in or about June 1993.

Section III describes how the USPHS will confirm and update this PP's estimates of MINSA's immediate commodity requirements in the five focus SILAIS. First, USPHS will provide one month of short-term assistance from a Health Service Delivery Specialist, and for five locally-hired Public Health Specialists to assist him/her. These experts will work in each of the five focus SILAIS to confirm the commodity needs estimates made during PP design. Once these estimates have been confirmed, the USPHS will send a Commodity Management Specialist to Nicaragua for two months. This individual will be expected to prepare a detailed list (including quantities and technical specifications) of those immediate requirements, obtain USAID and MINSA approval of that list, and forward it to the USPHS's procurement offices in Maryland. All these positions, local and U.S., will be funded by the PASA with USPHS.

The USPHS will then proceed to fill these commodity orders in accordance with its standard procurement procedures. The Service will either supply the commodities from its own warehouses; order them from the Federal Supply Schedule; purchase them via a shared procurement arrangement with the Veteran's Administration and/or other U.S. Government entities (this would allow larger quantities, and thus lower unit costs); or procure them competitively by soliciting offers directly from potential suppliers. The USPHS will, as it has on previous A.I.D.-funded activities, choose the procurement mechanism that offers the lowest possible costs.

To assure the proper use of these commodities, the PASA will also contain funds for up to two months of short-term technical assistance from the USPHS during the first project year to train MINSA staff. This training will be timed to coincide with the arrival of the commodities.

The USPHS will repeat this process every year for the life of DHS. To help MINSA and the institutional contractor estimate commodity needs, place orders to fill those needs, and train MINSA staff in the correct use of the commodities purchased, the PASA will contain funds for up to one person-month per year of on-site short-term technical assistance during Project Years Two through Five. Table IV-9 below summarizes the commodity-related technical assistance that USPHS will provide.

Table IV-9: Commodity-Related Technical Assistance from U.S. Public Health Service

Function:	Timing:	PMs:
International:		
Health Service Delivery Specialist	Mid-1993	1
Commodity Management Specialist	Mid-1993	2
Training in Commodity Use	Late-1993	2
Short Term TA as needed in Commodity Procurement and Use	1994-1997	4
Nicaraguan:		
Public Health Specialists (5)	Mid-1993	5

To assure compliance with applicable A.I.D. regulations, USAID will request that, beginning in the second Project Year, the USPHS develop an annual procurement plan in consultation with both MINSA and the long-term technical assistance contractor. This plan should specify the expected source, origin, quantity, and approximate value, and proposed procurement mechanism for all commodities to be procured for the project in the coming Fiscal Year. Approval of this plan by both USAID and MINSA will be required before the USPHS places any commodity orders.

As part of its review of each annual plan, USAID will seek guidance from AID/W/IRM before approving the purchase of any computers and/or software. USAID will also assure that all project procurement complies with all A.I.D. policies (e.g. source and origin, eligibility, marking, etc.). In the case of vehicles, the USPHS will seek specific written authorization from the USAID/Nicaragua Contracts Officer before soliciting quotes for vehicle procurement. Any vehicles purchased must be of U.S. source and origin. Since pharmaceuticals are on A.I.D.'s restricted commodity eligibility list, application for approval of pharmaceuticals (A.I.D. Form 11, included in Handbook 15) must be sent to AID/W/M/OP by USAID upon finalization of the commodity list. All pharmaceutical items must meet FDA standards. Additionally, the USPHS will need USAID's authorization should it choose to procure medical or other supplies and equipment for the DHS Project from the General Services Administration (GSA).

All project commodities imported into Nicaragua will be delivered on a C.I.F. basis. Assistance in customs clearance and delivery will be the responsibility of the GON. All commodities will be inspected and accepted upon receipt by a receiving and acceptance officer who will be designated, in writing, by USAID. MINSA will be responsible for providing the necessary local insurance and storage. Additionally, MINSA will (as a

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Condition Precedent to placing any commodity orders) provide, in form and substance satisfactory to USAID, a list of the locations to which these commodities will be distributed, the general purposes for which these commodities will be used, the officials who will be responsible for control of their use, and a description of the steps the GON's Ministry of Health (MINSA) will take to provide for the physical security and proper management of those commodities.

The authorized Geographic Code for these procurement actions will be 000 plus Nicaragua and the Central American Common Market countries. It is expected that vehicles, computers, and medical supplies will be purchased from the United States. Some other items, notably certain small value office supplies, will be purchased locally by the institutional contractor to support its own operations. These purchases will be valued under $25,000 per transaction. The origin of these goods will be Code 000 whenever possible. The contractor will be required to use appropriate solicitation documents (IFB/RFQ) and to use good commercial practices when soliciting quotations from local vendors.

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SECTION V: COST ESTIMATE AND FINANCIAL PLAN

The overall cost of the DHS Project over its five-year life is expected to be $29.4 million. This will include an A.I.D. contribution of $22.0 million (74.8%) of the total[1], and GON contributions equivalent to $7.4 million (25.2% of the total).

A. The A.I.D. Contribution

The A.I.D. contribution will include an initial obligation of $7,220,638 in FY 1993 funds composed of $4,000,000 in Development Assistance Funds (DAF) earmarked for child survival; $1,720,638 from the Child Survival account; $1,000,000 from the Health account; and $500,000 from the Population account. Additionally, USAID will transfer another $700,000 in FY 1993 Population funds to AID/Washington for the purchase of contraceptives. USAID expects that subsequent incremental obligations totalling $14,079,362 will be made from the appropriate Development Assistance accounts in FYs 1994-96. The planned obligation schedule is summarized in Table V-1 below:

Table V-1: Planned Obligation Schedule

Fiscal Year:	Development Assistance Funds	Population Funds	Total
1993	6,720,638	1,200,000	7,920,638
1994	4,600,000	800,000	5,400,000
1995	3,400,000	1,000,000	4,400,000
1996	3,279,362	1,000,000	4,279,362
Totals:	**18,000,000**	**4,000,000**	**22,000,000**

The A.I.D. contribution will finance technical assistance, training, policy analyses, and the purchase of equipment and supplies. Table V-2 on the following page summarizes planned A.I.D. expenditures by project input for each Project Year.[2]

[1] The planned A.I.D. contribution includes $2.6 million in Population funds over the life of the project for the purchase of contraceptives. These funds will not be obligated through the bilateral Grant Agreement that USAID will sign with the GON for this project. Instead, USAID will transfer these funds to AID/Washington for obligation through the Agency's central Contraceptive Procurement Project.

[2] In these and all other tables included in Section V, totals may not equal 100% due to rounding. Detailed budget estimates on which these figures are based are presented in Annex F.

Table V-2: Planned A.I.D. Expenditures by Year and Type of Input ('000)

Input Type/Project Year:	One	Two	Three	Four	Five	TOTAL
Technical Assistance	994	1,599	1,621	1,537	1,216	6,968
Commodities	1,465	862	874	874	663	4,737
Contraceptives	236	457	549	629	729	2,600
Training	2	752	1,274	758	299	3,084
Evaluation and Audit	10	10	100	10	100	230
Immunizations	1,000	850	700	550	400	3,500
Contingencies/Inflation	15	130	237	262	237	881
Total	**3,722**	**4,660**	**5,355**	**4,620**	**3,644**	**22,000**

Figure 1 below illustrates this planned division of A.I.D. expenditures by type of input over the life of the project:

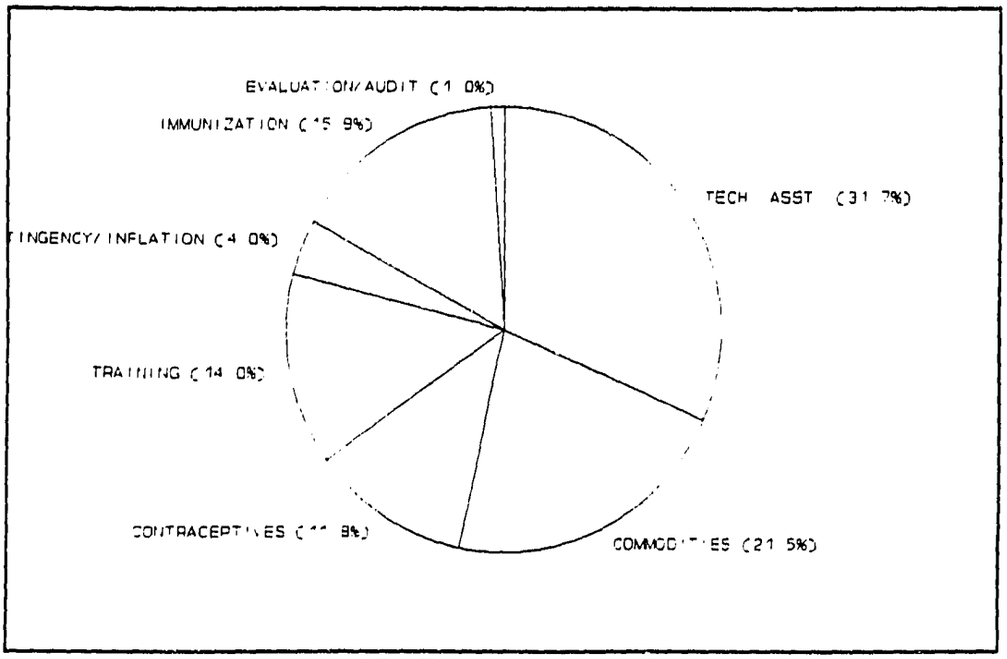

Figure 1: A.I.D. Expenditures by Type of Input

Table V-3 details planned A.I.D. expenditures by Project Year and component:

Table V-3 **Planned A.I.D. Expenditures by Project Year and Component ($ '000)**

Project Component/Year:	One	Two	Three	Four	Five	TOTAL
Accelerated Start	1,883	0	0	0	0	1,883
MH/CS*	414	2,400	2,973	2,623	2,068	10,478
MFD	280	984	1,068	911	614	3,857
ASF	120	285	277	264	224	1,171
Evaluation and Audit	10	10	100	10	100	230
Immunization	1,000	850	700	550	400	3,500
Contingencies/Inflation	15	130	237	262	237	881
Total	**3,722**	**4,660**	**5,355**	**4,620**	**3,644**	**22,000**

* = Includes contraceptives

Figure 2 below illustrates this planned division of expenditures among the project components over the life of DHS:

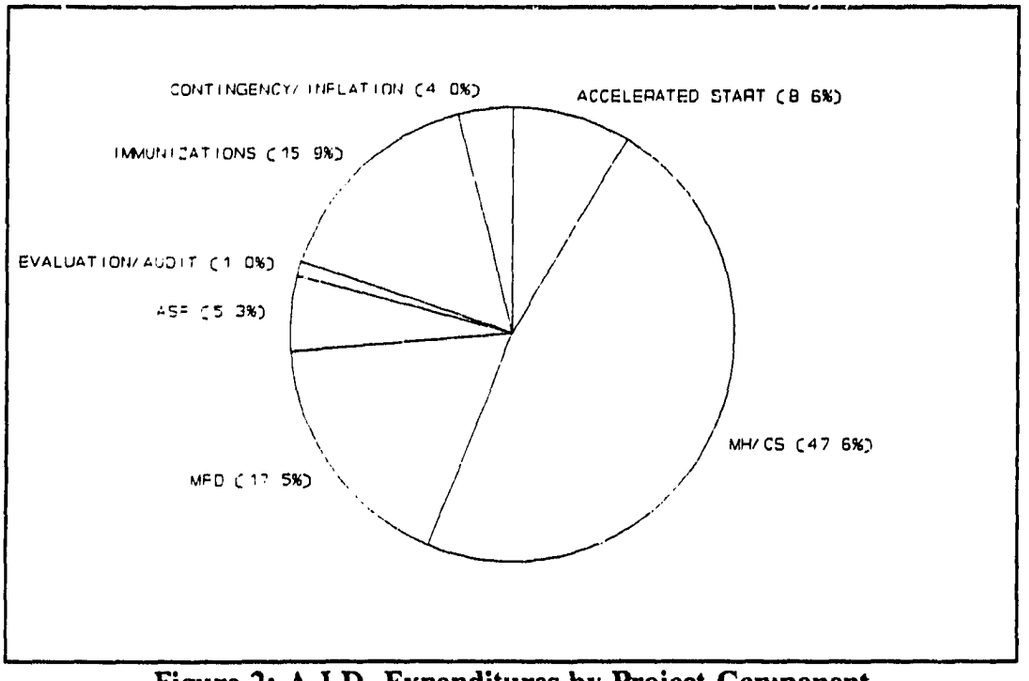

Figure 2: A.I.D. Expenditures by Project Component

Finally, Table V-4 on the following page shows how each of the planned inputs will be divided among the project components:

Table V-4: Division of Inputs by Project Component

Component	Tech. Asst.	Commodities	Training	Other	Total
Accelerated Start	417,809	1,465,300	0	0	1,883,109
MH/CS	2,473,078	5,250,129	2,755,000	0	10,478,197
MFD	2,905,864	622,000	329,160	0	3,857,024
ASF	1,170,936	0	0	0	1,170,936
Sub-Total	6,967,687	7,337,419	3,084,160	0	17,389,266
Immunization				3,500,000	
Eval./Audit				230,000	
Con./Infl.				880,734	
TOTAL COSTS	**6,967,687**	**7,337,419**	**3,084,160**	**4,610,734**	**22,000,000**

B. Government of Nicaragua Contribution

The Government of Nicaragua will make local currency and in-kind contributions equivalent to at least U.S $7.4 million, or 25.2% of total project costs. As detailed in Annex F, these contributions will include the provision of facilities, either rented or of its own, to be used as offices for project personnel and storage for project provided goods; the full-time salaries of MINSA personnel designated to serve as counterparts to the project-funded long-term technical assistance team; and the salaries of its employees while those employees are participating in project-funded training. The GON contribution will also include a portion (5%) of the salaries of certain employees in the five focus SILAIS of the project during the time those employees are participating in project-related activities.[3] Throughout the life of the project, the GON will submit quarterly reports to USAID detailing its accumulated contribution.

Table V-5 below summarizes planned GON expenditures for each project year:

[3] The actual value of the GON contribution is estimated at $12,606,680. For presentational purposes, summary sections of this PP and the ensuant Project Grant Agreement will list the GON contribution simply as "not less than $12.6 million."

Table V-5: Planned GON Expenditures by Project Year (U.S. $'000 equivalent)

Category:	One	Two	Three	Four	Five	Total:
Provision of Facilities	10	61	61	61	61	256
Salaries of Counterparts	8	33	33	33	33	139
Operational Support	0	1,609	1,609	1,609	1,609	6,437
Salaries of Trainees	1	156	216	175	60	608
Total:	**19**	**1,859**	**1,919**	**1,878**	**1,763**	**7,440**
Rounded To:						**7,400**

Table V-6 illustrates how these GON expenditures will be divided among the components of the project:

Table V-6: Planned GON Expenditures by Project Year and Component ($ '000 Equivalent)

Project Component	One	Two	Three	Four	Five	TOTAL
Maternal Health/Child Surv.	14	1,047	1,098	1,079	967	4,205
Mgt./Fin. Decentralization	4	793	802	781	777	3,157
Alternate Sources of Finance	1	19	19	19	19	78
Total:	**19**	**1,859**	**1,919**	**1,878**	**1,763**	**7,440**
Rounded To:						**4,400**

Annex F includes a more detailed presentation of this expected GON contribution, as well as an explanation of the assumptions included in its calculation.

C. Summary of Total Contributions

Table V-7 summarizes total expected contributions from the GON and A.I.D. by input:

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Table V-7 **Total LOP Contributions by Type of Input and Funding Source**

Input Category:	GON	A.I.D.	TOTAL
Technical Assistance	6,831,743	6,967,687	13,799,430
Commodities		7,337,419	7,337,419
Training	607,787	3,084,160	3,691,947
Immunization		3,500,000	3,500,000
Evaluation		180,000	180,000
Audit		50,000	50,000
Contingency and Inflation		880,734	880,734
TOTALS:	**7,439,530**	**22,000,000**	**29,439,530**

Table V-8 lists total expected contributions from the GON and A.I.D. by project component:

Table V-8: **Total LOP Contributions by Component and Funding Source**

Project Component	GON	A.I.D.	TOTAL:
Accelerated Start		1,883,109	1,883,109
Maternal Health/CS	4,204,832	10,478,197	14,683,030
Mgt./Fin. Decentralization	3,157,057	3,857,024	7,014,081
Alt. Sources of Finance	77,641	1,170,936	1,248,577
Immunization		3,500,000	3,500,000
Evaluation		180,000	180,000
Audit		50,000	50,000
Contingency and Inflation		880,734	880,734
TOTALS:	**7,439,530**	**22,000,000**	**29,439,530**

D. Methods of Implementation and Financing

Table V-9 shows the preferred methods of implementation and financing for the A.I.D. contribution by type of project input and by anticipated project element. The amounts presented, like all the budget figures in this Section V and in supporting Annex F, represent the best estimates available at the time of project design. Budget revisions will be made as

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necessary during the life of the project based on actual figures negotiated with the various suppliers of goods and services.

Table V-9 Methods of Implementation and Financing by Project Element and Input (U.S. $'000)

Project Element	Method of Implementation	Method of Financing	Estimated Amount
TA from Gray Amendment Firm	AID Direct Contract	Direct Pay	303
U.S. Public Health Service	Participating Agency Service Agreement	Direct Pay	4,932
Institutional Contract - Technical Asst. - Training	 AID Direct Contract AID Direct Contract	 Direct Pay Direct Pay	 6,470 3,084
Contraceptive Procurement	OYB Transfer to AID/Washington	Direct Pay	2,600
Immunizations	Handbook 13 Grant to PAHO (Buy-in)	Direct Pay	3,500
Evaluation/Audit - Evaluations - Audit	 AID Direct Contract AID Direct Contract	 Direct Pay Direct Pay	 180 50
Contingency/Inflation			881
A.I.D. Total			**22,009**

E. Division of First Year Obligation

The Amplified Project Description attached to the Project Grant Agreement for DHS will specify that the planned initial FY 1993 obligation of $7,220,638, which will be made through a bilateral Project Grant Agreement with the GON, should be divided among the various project elements as shown in Table V-10 below:

Table V-10: Division of Initial FY 1993 Obligation Among Project Elements ($'000)

Project Element	FY 1993	Expected Future Obligations	Estimated LOP Total
Contract with Gray Firm	303	0	303
PASA with U.S. Public Health Service	1,580	3,352	4,932
Institutional Contract	4,313	5,241	9,554
Contraceptive Procurement	0	2,600	2,600
Grant to PAHO	1,000	2,500	3,500
Evaluation	0	180	180
Audit	10	40	50
Contingencies & Inflation	15	866	881
TOTALS:	**7,221**	**14,779**	**22,000**

A subsequent FY 1993 obligation of $700,000 in Population funds will be made via an OYB Transfer to the central Contraceptive Procurement Project. Thus, total obligations in FY 1993 will be $7,920,638.

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SECTION VI: MONITORING, EVALUATION AND AUDIT

A. Collection of Baseline Data

Monitoring and evaluation must begin with the collection and assembly of baseline data. Because data on the variables against which the success of DHS will be measured are, at present, either unavailable, unreliable, or not disaggregated by gender or location, one major effort under the Accelerated Start Component (ASC) will be the collection of baseline data in the five focus SILAIS on the progress indicators listed in Annex A, "Logical Framework".

As described in Section III, the Gray Amendment firm that will help MINSA carry out the ASC will design a methodology for gathering, and then help MINSA gather, baseline data on the End-of-Project Status Indicators (EOPS) and Objectively Verifiable Indicators (OVIs) included in the Logical Framework. Results from the ongoing national Family Health Survey being carried out by Profamilia and the Centers for Disease Control (CDC) are expected to be available by September 1993, and will provide a portion of the needed data at the national level. Similarly, MINSA's Expanded Program of Immunizations will continue to gather and make available statistics on immunization coverage, while the national census the GON is to carry out in 1994 will provide population data.

Other data, however, - particularly those on incidence of diarrheal disease and ARI, nutritional practices, and clinical visits - will have to be gathered by examination of records at the individual focus SILAIS. To carry out this baseline study, the Gray firm will provide the full-time services of one senior Statistical Analyst. S/he will supervise the work of five locally-hired data gatherers, each of whom will work at one of the focus SILAIS. USAID and MINSA estimate that this effort will require some three months to complete. It will take place during the first Project Year (PY).

B. Project Monitoring

Timely periodic monitoring is critical to determining implementation progress. USAID and MINSA will therefore monitor DHS on a continuing basis. This will involve gathering information on the provision of inputs, changes in the OVIs and EOPs as the project proceeds, and on other actions essential to project success, both in the area of technical assistance and training and in the area of provision of MH/CS services to ultimate beneficiaries.

The USAID Health Officer, a U.S. Direct Hire employee working in the General Development Office, will have the primary responsibility for monitoring all components. S/he will be assisted in this capacity by a TAACS (Technical Assistance in AIDS and Child Survival) advisor also working in GDO under a Participating Agency Service Agreement (PASA) with CDC. Their office-based monitoring functions will include:

- Review of all periodic reports submitted by the SILAIS to MINSA to verify receipt of scheduled technical assistance, commodities, and training, use of funds, health service delivery activities, compliance with the SILAIS mandate, and possible problem areas.

- Review of periodic reports submitted by the long-term technical assistance contractor and by the U.S. Public Health Service (USPHS), which will procure all offshore project-funded commodities (except contraceptives).

- Regular discussions with the Chief Of Party and members of the long-term institutional contract team as to overall project progress.

- Regular discussions with MINSA officials about project progress and problems.

- Serving as the USAID representative(s) on the Comisión Nacional de SILAIS (CNS) to assure its ongoing functioning and effectiveness.

Site visits (a minimum of four per SILAIS per year) by the USAID Health and TAACS Officers will include:

- Briefings by the SILAIS Director on project activities in his/her SILAIS, along with recommendations for improvements and/or corrective actions.

- Discussions with MINSA and community health workers to verify field conditions and the operational effectiveness of SILAIS activities.

- Discussions with municipal officials and other local authorities.

To facilitate these monitoring efforts, USAID will seek to assure that the Management Information System (MIS) to be developed under the MFD component includes mechanisms for providing useful information on the variables noted above. The inclusion of such mechanisms will be a major factor in USAID's decision whether to approve the system design submitted by the institutional contractor.

C. Project Evaluation

During the life of DHS, USAID and MINSA will conduct two joint project evaluations. These will examine the Project as a whole to determine whether it is moving toward its purpose, whether planned outputs are being attained, and whether the implementation mechanisms outlined in this PP are effective in delivering planned inputs. MINSA and USAID will work together to develop detailed Scopes of Work for these efforts. The main users of the information gathered will be the individual SILAIS, MINSA, the Comisión Nacional de SILAIS, USAID and AID/Washington.

The first of these efforts, a mid-term evaluation, will be carried out in or around June 1995. The evaluators will focus on the extent to which planned inputs have been delivered, problems that may have impeded delivery of those inputs, and progress toward planned outputs. The evaluators will also examine whether the concept of an "Accelerated Start" was valid, or whether a more deliberate approach would have been preferable. This may be useful both to USAID/Nicaragua and to other A.I.D. Missions faced with situations combining urgent need and institutional weakness. This first evaluation will also examine the functioning of the CNS and of MINSA's Office of External Cooperation. The evaluation will comment on whether these bodies are fulfilling their coordinating functions adequately and, if not, what corrective actions might be taken.

With respect to the MH/CS component, the task of the evaluators will be largely objective: they will be able to assess progress by reference to empirical data on, for example, immunization coverage, contraceptive use, and the incidence of diarrheal disease and ARI. With respect to the MFD and ASF components, however, their tasks will be more subjective. For the MFD component, they will be asked to recommend the pace at which the MIS and the Financial Management System (FMS), which by then will be operating on a pilot basis in one SILAIS, should be extended to the rest of the MINSA system. They will also assess the effectiveness of the GEMS training in improving management skills, and will suggest modifications in that curriculum. For the ASF component, the evaluators will comment on whether the cost containment and cost recovery methods suggested by project-funded analyses are (or have proven to be) appropriate means of attaining these objectives, and will assess the GON's willingness (and suggest ways of bolstering that willingness) to implement or expand these methods.

The final evaluation, which will take place early in the final Project Year, will cover much the same ground, albeit from a perspective more fully enriched by experience. This evaluation, though, will be asked to pay relatively more attention to purpose-level indicators, and to comment on the need, if any, for continued A.I.D. involvement in this sector. In this context, USAID will encourage the evaluators to share ideas they may have for the design of any subsequent project or non-project activities.

To carry out these evaluations, USAID will access an A.I.D. Indefinite Quantity Contract (IQC) with a U.S. firm. This firm (or firms) will provide the services of a MH/CS Specialist, an Administrative/Financial Management Specialist, an Information Systems Specialist, and a Health Care Financing Specialist, for four weeks each. Each of these team members will be joined by a MINSA counterpart.

D. Audit

Audits will be performed at dates to be established during the life of the project. Such audits will be the responsibility of the USAID/Nicaragua Controller, who will coordinate their performance with the Regional Inspector General in Tegucigalpa. $50,000 have been provided under a separate line item of the budget for this purpose.

SECTION VII: SUMMARIES OF PROJECT ANALYSES

A. Technical and Administrative Analyses

Analysis of the proposed activities of the DHS Project suggests that, if certain important assumptions hold true, these activities can be expected to improve significantly the capacity of the Ministry of Health (MINSA) and the SILAIS to deliver preventive and primary care, and thereby achieve the objectives outlined in Annex A, "Logical Framework", to this Project Paper.

Annex D, "Administrative Analysis", notes that MINSA is the major provider of health care in Nicaragua, delivering services to approximately 70% of the population. The Ministry carries out its activities through a national health system that has expanded almost four-fold since 1980: as of 1991, there were a total of 843 facilities (including health posts, medical posts, health centers and hospitals) supported by 13 teaching units, 24 warehouses, and 14 administrative offices. Each entity organizes its operations through a set of regulations, norms and procedures established by technical departments and their respective governing board. The Administrative Analysis notes that the geographic scope of these facilities is impressive: almost all population settlements with more than 5,000 people have a health facility nearby. MINSA staffs these facilities with a workforce of some 23,200 people, approximately 50% more than in 1980.

Nonetheless, in the last decade, health indicators have not improved as much as expected. In MINSA's own view, several institutional factors have contributed to this. Among them:

- Management systems are underdeveloped and skills weak at all levels of the health system.

- The planning process is still insufficient and requires greater technical capacity to carry out analysis of the cost-effectiveness of health interventions.

- Information systems do not provide sufficient information on morbidity and mortality, cost and production of services, and administrators are not sufficiently trained to seek more efficient ways to utilize available resources.

- MINSA does not have adequate capacity to plan and budget programs and monitor performance.

- The system for supplying principal medicines and other medical commodities is deficient with respect to the estimation of needs, as well as in acquisition, storage and distribution.

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- Supervision is not widespread or systematic. This, in part, explains the low quality and inefficiency of some services, and low skill levels of the health providers.

- MINSA suffers from high personnel turnover, which undermines efficient administration of most programs and impairs routine development of skills.

Perhaps the largest single institutional factor underlying Nicaragua's poor health performance has been the system's bias toward curative rather than preventive care. MINSA's staffing pattern reflects this bias. There are only 0.9 nurses per doctor compared to an international standard of 4 per doctor. The number of auxiliary nurses per physician is also low. Partly as a result, health and nutrition education, growth monitoring, and breastfeeding, for example, are not routinely included in primary health activities at the community level, although these interventions are well within the reach of MINSA even given its limited resources. The heavy reliance on curative medicine unnecessarily raises costs.

MINSA recognizes its management and administrative deficiencies and has made the decision to change. In April 1991, MINSA approved Resolution 91, which created the *Sistemas Locales de Atención Integral en Salud* (the Local System of Integrated Health Care - SILAIS) in a total of 19 geographical territories throughout the country. By Resolution 96 of June 1992, MINSA established the SILAIS as the basic organizational unit for the provision of health services in defined territorial areas. At the central level as well as in the recently established SILAIS, there is a desire to bring about decentralization and to strengthen its absorptive capacity, which is low but can be raised substantially with the coordinated help of USAID and other donors such as USAID, UNDP, PAHO/WHO and the World Bank.

MINSA and these donors agree on the need to improve both MINSA's delivery of primary health care services and its ability to manage its limited resources. The DHS Project will address the first problem through its Maternal Health and Child Survival component. This component will provide the training and equipment SILAIS staff need to extend a series of mutually reinforcing preventive care measures to their communities. These measures, which will include promotion of preventive practices and provision of oral rehydration salts for the control of diarrheal diseases, educating families to recognize and seek early treatment for acute respiratory illness, nutrition education, prevention of vitamin A deficiency, promotion of breastfeeding, growth monitoring, immunizations, and the use of contraceptives to promote birth spacing and safe motherhood, have been shown to be technically effective - and cost-effective - in other Latin American countries with health problems similar to those which claim the most lives in Nicaragua.

Many of these interventions are to be provided largely by some 9,000 volunteer Community Health Workers (CHWs) in the five focus SILAIS. These volunteers have provided support for immunization campaigns by encouraging residents to come to vaccination centers at appropriate times. After the change in government in 1990, CHWs in many communities became less active. In other communities, however, they continue to provide extensive support for both immunization and anti-cholera campaigns.

Training for CHWs has been sporadic, driven largely by immediate requirements (e.g., cholera, immunization, malaria). There has been little organized effort to provide CHWs with a range of skills to meet basic community health care needs. "Spot" training has been provided by MINSA and by a number of local organizations. Now that MINSA is taking an active interest in the potential contribution of the CHWs, it plans to systematize and maintain records of types of training provided, and to develop curricula reflective of community needs as defined by the CHWs themselves and by local Health Councils. Health Promotion Training (HPT) funded by DHS for CHWs is to be an important part of this process.

Under DHS, the CHWs are to emphasize community motivation and education. The performance of CHWs in the anti-cholera and immunization campaigns suggests that, if given proper supervision, they will be able to carry out these functions. Nonetheless, USAID and MINSA recognize that the CHWs lack training in the promotional aspects of integrated primary care delivery. Given this, the timely provision of planned CHW training programs, and the ongoing supervision of the CHWs by both MINSA staff and project-funded technical assistance, will be critical to the success of the MH/CS component.

The DHS Project will address the second set of problems, which concern MINSA's ability to manage its limited financial resources, through its Management and Financial Decentralization and Alternate Sources of Finance components. Under these components, DHS will assist and train health staff to develop and use basic Management Information (MIS) and Financial Management (FMS) systems at MINSA headquarters and in the SILAIS. These systems will respond to MINSA's need for (among other things) financial, personnel, and supply information. Their introduction, as well as training in general management and general computer skills, will help MINSA and SILAIS management to monitor and control the use of their resources more effectively, and thereby help them make rational, cost effective choices about the use of those resources.

B. Economic Considerations

As noted in Annex E, "Economic Considerations", the paucity of reliable data on the real cost of, demand for, and effectiveness of planned MH/CS interventions make it extremely difficult to gauge accurately the cost-effectiveness of those interventions. To correct this situation, the project will gather substantial data that will ultimately make it far easier to carry out such an analysis. Nonetheless, recognizing that those being asked to authorize DHS require at least some prior demonstration that the activities the project will support are cost-effective as compared to other potential interventions, Annex E examines the conclusions reached during the recent design of a similar project, Family Health Services (FHS, 519-0363), in El Salvador.

During design of FHS, USAID/El Salvador conducted detailed analyses of the cost effectiveness of the various contraceptive, CDD, and nutrition interventions that FHS might

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have supported. The Mission also tested the sensitivity of its conclusions to possible changes in the underlying assumptions. These analyses concluded that:

- Among temporary family planning methods, the project's focus on oral contraceptives rather than IUDs is appropriate, as the former are more cost-effective than the latter. Further, though the cost-effectiveness of condoms was found to be low in El Salvador because of their low acceptance rate in 1988, the analysis notes that if the use of condoms increases significantly (as it has in El Salvador since 1988), the cost-effectiveness of condoms will increase.

- Use of oral rehydration salts and/or home solutions were both less costly, and more cost-effective, than the alternative of hospital rehydration. This suggest that DHS, which will promote both these methods as a means of avoiding the need to resort to hospital rehydration, has chosen correctly.

- Prenatal vitamins and Vitamin A, which DHS will provide, are more cost-effective (particularly so in the case of Vitamin A) than the alternatives of multivitamin use or the encouragement of home gardens.

Obviously, El Salvador and Nicaragua are not so similar as to enable one to state with certainty that, if similar tests were performed in Nicaragua, the same conclusions would result. There are, however, sufficient similarities between the economic circumstances of these two countries, and between the health problems they face, to make the El Salvador experience of some analytical use in Nicaragua. At the very least, the analysis notes, the methodologies used in design of the FHS Project provide a roadmap for MINSA and the long-term TA team to carry out similar analyses of DHS interventions once sufficient reliable data is available.

Regarding the project's planned Management and Financial Decentralization (MFD) and Alternate Sources of Finance (ASF) components, Annex E notes that while it is relatively easy to state the magnitude of MINSA's well-known financial problems (e.g. a huge recurrent cost burden, insufficient emphasis on primary care, continuing reliance on donor subsidies), it is much more difficult to place an economic value on the benefits that will accrue from the interventions that these components will support. This is because it is not possible to calculate empirically the cost savings that will result from these interventions. The Analysis goes on to state, however, that it is possible to conclude intuitively that because DHS will help MINSA explore and test methods of cost containment and cost recovery, it will thereby improve (once these methods are fully implemented) MINSA's prospects for self reliance. These changes will, if implemented, result in significant cost savings. A reduction of just 7% in MINSA's present recurrent cost burden would result in savings of approximately $5.0 million per year, or $25 million over the life of DHS -- more than the total amount of the planned A.I.D. investment.

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C. Social Soundness Analysis

The Social Soundness Analysis demonstrates that the DHS Project is fully within the parameters of Nicaragua's cultural traditions and social expectations, and will be accepted by the people who are intended to benefit from the project interventions.

Events in Nicaragua during the past decade have left the country with high unemployment rates, low per capita incomes, and a severely debilitated health care system. The deterioration of the quality of life in Nicaragua has left at least 86 percent of the rural population and 55 percent of urban residents unable to satisfy their basic needs. Poverty affects more than 70 percent of the population; of these, 23 percent are in extreme poverty and 16 percent in misery, more than 34 percent live in crowded houses, 47 percent do not have access to potable water, and at least 25 percent of the school age population are not enrolled in school. Nicaragua is one of the poorest countries in Latin America.

The caloric and protein intake of the Nicaraguan population has declined substantially since 1986, the last year when the average consumption met minimal standards. The implication of the increasing protein-calorie deficiency in the general population is that a significant portion is suffering from some degree of malnutrition or is at risk of becoming malnourished. The groups that suffer more severe effects are children and pregnant or lactating women who have higher nutritional requirements, members of female-headed households, and some regions of the country (including those served by the SILAIS that will be the focus of DHS) which are more affected than others.

Political factionalism and polarization occurs in a number of areas but is not a generalized phenomenon. Although political factors can be an impediment to health care delivery, most local organizations are more concerned with confronting the problems of scarce resources than with political in-fighting. Most people, regardless of political affiliation, want to get on with their lives and try to improve living conditions in their communities. This includes improving the quality of health care as well as the their children's educational environment.

There is a striking difference between the structure of families able to meet their basic necessities versus those that cannot. The number of female headed households is significantly higher for the poor, and households headed by single females appear to be increasing at a rapid rate. A single woman not only has to perform household duties but also must provide an income to sustain both herself and her children. In general, these households are the poorest, the most affected by malnutrition and high morbidity rates due to acute respiratory infections, diarrheal disease, and other illnesses. Community health workers and midwives will be trained to identify matrifocal households, and to make sure that pregnant women come to health care facilities for prenatal exams and tetanus immunizations and that children receive growth monitoring and nutritional evaluations.

DHS will address gender issues not only through greatly improved female access to health care services, but also through its promotional activities. One of the key elements of family

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planning - and a key aspect of the DHS Project - is expansion of the knowledge and rights of women. The long-term TA team will be required to submit reports on gender issues designed to alert the project staff if benefits are not reaching matrifocal families.

Before training begins for health post personnel and community health workers, norms will have been established by MINSA (with the assistance of the long-term TA team). These will state the precise mix of curative and promotional activities to be provided at the community level. It is crucial that training materials such as manuals, posters and pamphlets consider the relatively low level of literacy in these groups, and that training seminars be carried out by personnel experienced in providing appropriate and practical training to auxiliaries and community health workers. Community leaders will be involved in the selection of community health workers and midwives to be trained, and DHS will attempt to maintain a political balance in communities or neighborhoods with significant factionalism. Communities that have played an active role in design and implementation can be counted on to help identify problems and to make necessary modifications.

Training courses will include a section on traditional medical beliefs and treatments in Nicaragua. These beliefs and practices are widespread, and often determine whether or not a mother will seek modern medical attention, administer her own folk remedy or seek out the services of a traditional healer. The inclusion of folk medicine in the training curriculum will allow auxiliary nurses and community health workers to integrate both modern and traditional beliefs and make credible explanations to local residents. This is especially important relating to beliefs about the nature of diarrhea and upper respiratory infections. Further, there are a large number of traditional treatments which provide benefits.

Regardless of poverty levels, people purchase medical services and medicines. In Nicaragua most go directly to pharmacies, describe their symptoms, purchase one or two doses of a medicine, keep taking it until their symptoms are gone, then stop. This often leads to recurrence of the disease or to other problems. Most pharmacies are not staffed by trained personnel and are primarily motivated to sell drugs with the highest profit margins. People do spend a significant part of their scarce resources on medical care, but the relative amount is not known.

Prior to its efforts to institute pilot programs of cost recovery (e.g. an experimental fee structure for those able to pay), DHS will study the demand for health services to determine actual expenditure patterns in relation to relative socioeconomic status. Data will also be collected on popular perceptions of what is appropriate in terms of where and in what sequence people seek which types of medical care for a wide range of diseases. Studies in Mexico have shown that most people, even in the lowest classes, display rational decision-making when seeking health care. Factors that load most heavily on the nature of decisions are perceived seriousness of the illness, time away from work to seek treatment, cost, and the relative status or prestige of the health-care provider.

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As this project is implemented in conjunction with the coordinated efforts of other donors, MINSA health facilities will become better equipped, personnel will be appropriately trained, and basic pharmaceuticals will be available for distribution. At the same time community health workers and traditional midwives will have been trained to carry out community outreach activities and will be referring large numbers of mothers, their children, and others in need of medical services to local MINSA facilities. If, over time, local residents accumulate increasingly more positive experiences at MINSA facilities and with CHWs involved in activities sponsored by MINSA, word of these revitalized health services will gradually spread through local populations. This may be expected to lead to greater demand for MINSA services.

D. Environmental Analysis

A Categorical Exclusion has been approved for this Project. See Annex 1, "Environmental Analysis".

SECTION VIII: CONDITIONS AND COVENANTS

The GON's Ministry of Health (MINSA) has been an enthusiastic advocate of the activities to be supported by DHS. Letters from MINSA and from the Ministry of External Cooperation (MCE) formally requesting USAID support for these activities are attached to this PP (see Annex B, "GON Request for Assistance"). MINSA has been heavily involved in the design of this project, and has several times confirmed (at the Ministerial and Vice-Ministerial levels) its eagerness to complete the design process and begin implementation.

The Project Grant Agreement for DHS will be signed by MCE, MINSA, and the Ministry of Finance (MiFin) as soon as possible following approval of this PP and authorization of the project. In addition to the standard Conditions Precedent to disbursement concerning the submission of specimen signatures and of a legal opinion on the validity of the Agreement, that Agreement will include the following Conditions and Covenants.

A. Conditions Precedent to Disbursement

1. Conditions Precedent to Disbursement for Commodities

Prior to any disbursement under the Project of funds for the purchase of commodities, or to the issuance by A.I.D. of documentation pursuant to which disbursement for commodities will be made (except for the issuance of documentation needed to acquire procurement services from the U.S. Public Health Service), the GON will, except as the Parties may agree in writing, furnish to A.I.D., in form and substance satisfactory to A.I.D.:

(i) A list of the locations to which those commodities will be distributed, the general purposes for which those commodities will be used, and the officials who will be responsible for control of their use; and

(ii) A description of the steps MINSA will take to provide for the physical security and proper management of those commodities.

(iii) Evidence that all major donors to the health sector, including but not limited to A.I.D., the World Bank, the IDB, PAHO, ASDI, Italy, Spain, and the UNDP, have been made members of MINSA's Comisión Nacional de SILAIS (CNS) and that this CNS has been charged with coordinating the efforts of all external donors currently providing or expected to provide assistance to the Nicaraguan health sector.

(iv) Evidence that the MINSA has appointed a National SILAIS Coordinator.

2. Conditions Precedent to Disbursement for Technical Assistance

Prior to any disbursement under the Project of funds for any contract with an institution for technical assistance, or to the issuance by A.I.D. of documentation pursuant to which

disbursement for technical assistance will be made (except for the issuance of documentation needed to acquire short-term technical assistance during the first Project Year), the GON will, except as the Parties may agree in writing, furnish to A.I.D., in form and substance satisfactory to A.I.D.:

(i) A description of the office space and office equipment that MINSA will provide for the use of personnel funded by any such contract.

(ii) A list of the MINSA personnel who will be assigned to serve as counterparts to the technical assistance team fielded by the long-term institutional contractor.

B. Covenants

In the Project Grant Agreement, the GON will covenant to:

(i) Convene the Comisión Nacional de SILAIS on a regular basis to carry out the mandate given it pursuant to the Condition Precedent cited in Section VIII.A above.

(ii) Increase the proportion of the MINSA budget devoted to primary care from the present level of 23.5 percent to not less than 40 percent by the beginning of Calendar Year (the GON's Fiscal Year) 1995, and maintain that proportion at no less than 40 percent of MINSA's budget through the Project Assistance Completion Date.

(iii) Maintain the value of MINSA resources devoted to primary care at a level equivalent to or greater than, in real terms, that provided in the GON's "Presupuesto General de la Républica, 1992".

(iv) Participate in and provide logistical support to feasibility studies of new sources of revenue for the health sector.

(v) Enact, on at least a pilot basis, at least one of the recommendations made by each of these feasibility studies within six months of the completion of the study making such recommendation(s), or provide evidence satisfactory to USAID as to why it should not implement that/those recommendation(s).

(vi) Carry out functional analyses of, define, and establish job descriptions for all primary-level health care positions; and provide to USAID a copy of the document(s) setting forth those descriptions.

(vii) Make individual SILAIS budgets line items in the GON's General Budget of the Republic by the start of GON Fiscal Year (Calendar Year) 1994.

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ANNEXES:

A. Logical Framework

B. GON Request for Assistance

C. Statutory Checklist

D. Administrative Analysis

E. Economic Considerations

F. Cost Estimate and Financial Analysis

G. Technical Analysis of Maternal Health/Child Survival Component

H. Social Soundness Analysis

I. Initial Environmental Analysis

J. NPD Approval Message

K. Summary of Activities of Other Donors

L. Detailed Implementation Schedules

M. Technical Analysis of Information Technology Sub-Component

N. Justifications

ANNEX A:

LOGICAL FRAMEWORK

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS:
Goal:			**(Goal to Supergoal)**
To improve maternal and child health.	1. Reduction in infant mortality as measured in various regions of Nicaragua.	1,2. Family Health Survey; MINSA data.	
Project Purpose:			**(Purpose to Goal)**
To improve the management and increase the effectiveness of and access to Nicaragua's public health resources; and to explore and encourage alternate sources of financing to the sector.	1. 25% decrease in the incidence of childhood diarrheal disease and ARI in five focus SILAIS. 2. CYPs provided by MINSA increase by 10% by March 1998. 3. Immunization coverage for children of less than one year increases from 65% to 80%.; TT coverage will have reached 70% among women of fertile age. 4. FMS and MIS in place in 19 SILAIS; MINSA administrative procedures decentralized. 5.a List of essential drugs for primary health care (PHC) reduced. b. Use of paramedics in PHC increased. c. Employee benefits monetized. d. Fee-for-service schedule for curative care adopted. 6. 40% of MINSA's annual operating budget devoted to primary health care.	1. Baseline data survey; SILAIS reports; site visits. 2. Family Health Survey; MINSA records. 3. PAHO reports; site visits. 4. Receipt of data from FMS and MIS; issuance of MINSA decrees; site visits. 5.a Receipt of revised list. b. MINSA decree; site visits. c. MINSA decree; examination of MINSA budget. d. MINSA decree; site visits. 6. Examination of MINSA and SILAIS budgets.	1. Decentralization of management responsibility and introduction of new sources of revenue will improve quality of care. 2. Poor mothers will take advantage of increased availability of preventive care by adhering to preventive health care interventions promoted by DHS.

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS:
Outputs:			(Outputs to Purpose)
1. Improved delivery of MH/CS services.	1.a. ORS provided to 100% of children reporting acute diarrhea in five focus SILAIS.	1.a Examination of SILAIS records, site visits.	1.a. Improved preventive MH/CS care will improve effectiveness of public health resources.
	b. Increase from 50% to 80% of women reporting 12-month breastfeeding.	b. Examination of SILAIS records; site visits.	b. Trainees capable of learning and extending preventive health care practices.
	c. CYPs provided by MINSA contraceptives increase from 100,000 to 250,000 in five focus SILAIS.	c. Examination of SILAIS records; site visits.	
	d. Vitamin A supplements provided to 80% of at-risk children in five focus SILAIS.	d. Examination of SILAIS and TA team procurement records; site visits.	
	e. Pre-natal vitamins provided to 100% of pregant women seeking care in five focus SILAIS.	e. Examination of SILAIS records; site visits.	
	f. Oral antibiotics provided to 100% of reporting ARI in five SILAIS.	f. Examination of SILAIS records; site visits.	
	g. 9,000 CHWs and 4,700 MINSA personnel trained & providing preventive care in five focus SILAIS.	g. Examination of TA team training records, SILAIS records, and site visits.	

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS:
Outputs (cont.):			(Outputs to Purpose)
2. Improved management of MINSA public health resources.	2.a. Income:expenditure ratio approximately 1:1 in all 19 SILAIS.	2.a. Examination of MINSA & SILAIS financial records.	2.a. Improved management skills will increase effectiveness of public health resources.
	b. Production:cost ratio declines in all 19 SILAIS.	b. Cost & demand studies; examination of SILAIS records.	b. Trainees capable of absorbing and applying GEMS, FMS, and MIS training.
	c. General management skills of 500 MINSA Directors and Sub-Directors improved.	c. TA team training records.	
	d. 250 MINSA employees trained in general computer skills.	d. TA team training records.	
	e. 250 MINSA employees trained in FMS.	e. TA team training records.	
	f. 400 MINSA employees trained in MIS.	f. TA team training records.	
	g. 200 MINSA staff trained in transport & logistics.	g. TA team training records.	
3. Cost-containment and cost-recovey methods explored and tested.	a. Specific proposals developed for cost containment and recovery measures including reduced list of essential drugs, increased of paramedics, and monetization of employee benefits.	a. TA team reports.	3.a MINSA costs can be cut without damage to quality and effectiveness of care provided.
	b. Fee-for-service schedule for curative care designed.	b. TA team reports.	b. Success of cost-containment and cost-recovery policies in five SILAIS will encourage to extend these policies its entire system.
	c. 4 studies of alternate revenue sources completed.	c. Studies approved by USAID and MINSA.	
	d. 4 workshops held to build support for cost contaiment and recovery measures.	d. TA team reports; receipt of minutes from workshop.	

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS:
Inputs:	Implementation Targets:		(Inputs to Outputs)
1. SHORT-TERM TA FOR ASC			1. GON willing and able to increase emphasis on primary care.
a. International	a. 11 Person-Months	a-b. Contractor billings; meetings with TA team.	
b. Nicaraguan	b. 15 PMs		
2. LONG-TERM TECHNICAL ASSISTANCE			2. SILAIS willing to cooperate in emphasis on primary care.
a. International			
1) Chief of Party	1) 51 PMs	a-d. Contractor billings, meetings with TA team; site visits; approval of consultant reports.	3. SILAIS want to manage and program resources locally.
2) MH/CS Specialist	2) 51 PMs		
3) Training/Outreach Sp.	3) 30 PMs		
4) Mgt./Fin Specialist	4) 51 PMs		
5) Systems Analyst/Mgr.	5) 51 PMs		
b. Nicaraguan			4. SILAIS are committed to improved management and financial controls.
1) SILAIS Adm. Asst. (5)	1) 240 PMs		
2) Systems Analyst/Prog.	2) 48 PMs		
c. Consultancies	c. 36 PMs		
d. Advertising Services	d. 33 months		5. MINSA will agree to participate in cost-containment analyses and cost recovery studies.
3. COMMODITIES			
a. Vehicles	a. 5 4WD vehicles	a-g. Contractor procurement reports; bills of lading; MINSA inventories.	
b. ORS Packets	b. 3.5 million packets		6. MINSA willing to translate results of above analyses and studies into pilot projects to test practicality of results.
c. Prenatal Vitamins	c. 865,000 bottles		
d. Vitamin A capsules	d. 1 million doses		
e. Oral Ampicillin	e. 375,000 capsules		
f. Contraceptives	f. 1) 6,500,000 condoms		
	2) 1,000,000 cycles orals		
	3) 12,000 IUDs		
	4) 100,000 injectables		
g. Other Commodities	g. $2,012,300		
4. TRAINING			
a. MH/CS Orientation	a. 100 person-days (PDs)	a-q. TA team training records; visits to sessions; interviews with participants.	
b. MH/CS Training of Tr's.	b. 600 PDs		
c. HIT Training	c. 60,000 PDs		
d. HIT Continuing Educ.	g. 15,000 PDs		
e. CHW training	e. 27,000 PDs		
f. Counselling Training	f. 12,000 PDs		
g. Refresher Trg. for CHWs	g. 9,000 PDs		
h. HPT Continuing Educ.	h. 2,800 PDs		
i. ST U.S. Training	i. 90 person-weeks (PWs)		
j. MFD Orientation	j. 400 PDs		
k. MFD Training of Tr's.	k. 108 PDs		
l. GEMS Training	l. 4,500 PDs		
m. Computer Skills	m. 3,750 PDs		
n. FMS Training	n. 2,500 PDs		
o. Specialized MIS Trg.	o. 2,400 PDs		
p. MIS User Training	p. 800 PDs		
q. Transport/Logistics	r. 2000 PDs		
5. IMMUNIZATIONS	5. $3,500,000	5. PAHO reports; site visits	

ANNEX B:

GOVERNMENT OF NICARAGUA'S

REQUEST FOR ASSISTANCE

MINISTERIO DE COOPERACION EXTERNA

Managua, 11 de marzo de 1993
REF: EK-0093-93

Doctora
JANET BALLANTYNE
Directora, USAID/NICARAGUA
Su Despacho

Estimada Doctora Ballantyne:

Por medio del presente, y en forma oficial, le solicito a la Agencia para el Desarrollo Internacional de los Estados Unidos de América, bajo su digno cargo, que se realice la firma y debida ejecución del convenio "Servicios de Salud Descentralizados." La Ministra de Salud, Lic. Marta Palacios, ha constatado que el proyecto apoya y está conforme con los planes de desarrollo que el Ministerio de Salud tiene considerados para ejecutar.

El Ministerio de Cooperación ha programado la firma del convenio en mención para el viernes, el 12 de marzo de los corrientes, a las 11:30 de la mañana. La Dirección General de América estará en contacto con oficiales de USAID/NICARAGUA para confirmar y coordinar dicha ceremonia.

Aprovecho la oportunidad para agradecerle la cooperación contemplada en el convenio y asegurarle mi más alta estima y consideración.

Atentamente,

Dr. Erwin J. Krüger,
Ministro

MINISTRO
DE
COOPERACION
EXTERNA

cc: Dirección General de América
Archivo
Cronológico

BEST AVAILABLE COPY

REPUBLICA DE NICARAGUA
MINISTERIO DE SALUD

Managua, Marzo 09 de 1993
REF DM.DE.

OFFICIAL FILE COPY

Doctora
JANET C. BALLANTYNE
Directora
USAID/NICARAGUA
Su Despacho.-

Due Date: 3/19
Action Taken:
Included in PP.
Initials:

Apreciada Doctora Ballantyne:

Deseo por este medio saludarla de la manera más cordial y reiterandole mis muestras de agradecimiento por el apoyo permanente que la Agencia AID, bajo su dirección, ha brindado de manera amplia al Ministerio de Salud a mi cargo.

En esta ocasion, me permito nuevamente solicitarle su atención a nuestra solicitud de apoyo para el desarrollo del Proyecto SERVICIOS DE SALUD DESCENTRALIZADOS (SSD), No. 524-0307, el cual es de suma importancia para la ejecución de los planes de desarrollo que mi Administración desea implementar a partir de estos años y consolidar en el período 94-96.

No omito manifestarle, que la suscrita tomando el mandato de nuestra Presidenta Doña Violeta B. de Chamorro, el cuarto a la prioridad estratégica de mejorar las condiciones de vida del pueblo Nicaragüense y combatir activamente la pobreza extrema, está dando inicio a un fuerte programa de reformas en el sector salud, dirigido a encontrar en el mediano plazo las soluciones duraderas y sostenibles que requiere el sector salud para su consolidación de largo plazo.

Quedo en deuda de antemano su atención a la presente, aprovecho la ocasión para reiterarle mis mejores muestras de respeto y estima.

Atentamente,

MARIO L. PALACIO
MINISTRO DE SALUD

Ministro de Salud

Date Received: MAR 01 1993	Act.	Info.
D		
DD		
LA		
EA		
PEPS		
GDO	✓	
EXO		
CO		
FIN		✓
PDI		✓
ARD		
Reading File		✓
Chron		✓

COMPLEJO NACIONAL DE SALUD "DRA. CONCEPCION PALACIOS"
Managua, Nicaragua, C. A.
Teléfonos: 97150/9 Apdo. P. 107 - Fax 97483

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ANNEX C:

STATUTORY CHECKLIST

ANNEX C: STATUTORY CHECKLIST

5C(2) - ASSISTANCE CHECKLIST

Listed below are statutory criteria applicable to the assistance resources themselves, rather than to the eligibility of a country to receive assistance. This section is divided into three parts. Part A includes criteria applicable to both Development Assistance and Economic Support Fund resources. Part B includes criteria applicable only to Development Assistance resources. Part C includes criteria applicable only to Economic Support Funds.

CROSS REFERENCE: IS COUNTRY CHECKLIST UP TO DATE?

USAID was advised by the Office of Central American Affairs on March 11, 1993, that the FY 1993 Country Checklist for Nicaragua is being circulated for clearance in AID/W. A draft of this revised Country Checklist is is on file in USAID.

A. CRITERIA APPLICABLE TO BOTH DEVELOPMENT ASSISTANCE AND ECONOMIC SUPPORT FUNDS

A. CRITERIA APPLICABLE TO BOTH DEVELOPMENT ASSISTANCE AND ECONOMIC SUPPORT FUNDS

1. **Host Country Development Efforts** (FAA Sec. 601(a)): Information and conclusions on whether assistance will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions.

1.(a) Nicaragua is following a private enterprise approach which includes the promotion of exports and international trade. (b) The freely elected Government of Nicaragua is pursuing a strategy to foster private initiative and competition. (c) N/A. The project has no credit components. (d) N/A. (e) N/A. This is a health delivery project. (f) N/A.

2. **U.S. Private Trade and Investment** (FAA Sec. 601(b)): Information and conclusions on how assistance will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

2. The project will help introduce U.S. technology and experience to improve the quality and efficiency of health services delivery through U.S. technical assistance, training and commodities. Practically all project commodities will be imported from the U.S., thus increasing U.S. exports.

3. **Congressional Notification**

a. **General requirement** (FY 1993 Appropriations Act Sec. 522; FAA Sec. 634A): If money is to be obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified (unless the Appropriations Act notification requirement has been waived because of substantial risk to human health or welfare)?

3.

a. Notification was sent to Congress on December 17, 1992, and the 15-day waiting expired on January 1, 1993, without objection.

b. **Notice of new account obligation** (FY 1993 Appropriations Act Sec. 514): If funds are being obligated under an appropriation account to which they were not appropriated, has the President consulted with and provided a written justification to the House and Senate Appropriations Committees and has such obligation been subject to regular notification procedures?

b. N/A.

c. **Cash transfers and nonproject sector assistance** (FY 1993 Appropriations Act Sec. 571(b)(3)): If funds are to be made available in the form of cash transfer or nonproject sector assistance, has the Congressional notice included a detailed description of how the funds will be used, with a discussion of U.S. interests to be served and a description of any economic policy reforms to be promoted?

c. N/A.

4. **Engineering and Financial Plans** (FAA Sec. 611(a)): Prior to an obligation in excess of $500,000, will there be: (a) engineering, financial or other plans necessary to carry out the assistance; and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

4. N/A. No engineering plans are required for the activities contemplated in the project.

5. **Legislative Action** (FAA Sec. 611(a)(2)): If legislative action is required within recipient country with respect to an obligation in excess of $500,000, what is the basis for a reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance?

5. The success of the project itself does not depend on further legislative actions in Nicaragua. The sustainability of certain project interventions related to the provision of primary health care may depend in part on the GON incrementally raising the percentage of the budget of its Ministry of Health devoted to primary care from under 24% (in 1992) to at least 40% by the end of the project. In the Project Grant Agreement, the GON will covenant to raise this percentage accordingly.

6. **Water Resources** (FAA Sec. 611(b); FY 1993 Appropriations Act Sec. 501): If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.)

6. N/A.

7. **Cash Transfer and Sector Assistance** (FY 1993 Appropriations Act Sec. 571(b)): Will cash transfer or nonproject sector assistance be maintained in a separate account and not commingled with other funds (unless such requirements are waived by Congressional notice for nonproject sector assistance)?	7. N/A.
8. **Capital Assistance** (FAA Sec. 611(e)): If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively?	8. N/A.
9. **Multiple Country Objectives** (FAA Sec. 601(a)): Information and conclusions on whether projects will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.	9. See Item 1. above
10. **U.S. Private Trade** (FAA Sec. 601(b)): Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).	10. See Item 2. above.
11. **Local Currencies**	11.
a. **Recipient Contributions** (FAA Secs. 612(b), 636(h)): Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.	a. The GON, through the Ministry of Health (MINSA), will provide contributions in-kind, such as office space, fuel for project-financed vehicles, and counterpart personnel that otherwise would require the purchase of local currency to cover the related local costs. USAID/Nicaragua owns no Nicaraguan currencies that could be used for this project.
b. **U.S.-Owned Currency** (FAA Sec. 612(d)): Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?	b. No.

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c. **Separate Account** (FY 1993 Appropriations Act Sec. 571). If assistance is furnished to a foreign government under arrangements which result in the generation of local currencies:

(1) Has A.I.D. (a) required that local currencies be deposited in a separate account established by the recipient government, (b) entered into an agreement with that government providing the amount of local currencies to be generated and the terms and conditions under which the currencies so deposited may be utilized, and (c) established by agreement the responsibilities of A.I.D. and that government to monitor and account for deposits into and disbursements from the separate account?

(2) Will such local currencies, or an equivalent amount of local currencies, be used only to carry out the purposes of the DA or ESF chapters of the FAA (depending on which chapter is the source of the assistance) or for the administrative requirements of the United States Government?

(3) Has A.I.D. taken all appropriate steps to ensure that the equivalent of local currencies disbursed from the separate account are used for the agreed purposes?

(4) If assistance is terminated to a country, will any unencumbered balances of funds remaining in a separate account be disposed of for purposes agreed to by the recipient government and the United States Government?

c. N/A. This Project will not generate local currency.

12. **Trade Restrictions**

12.

a. **Surplus Commodities** (FY 1993 Appropriations Act Sec. 520(a)): If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?

a. N/A.

b. **Textiles (Lautenberg Amendment)** (FY 1993 Appropriations Act Sec. 520(c)): Will the assistance (except for programs in Caribbean

b. No.

Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel?

13. **Tropical Forests** (FY 1991 Appropriations Act Sec. 533(c)(3)(as referenced in section 532(d) of the FY 1993 Appropriations Act): Will funds be used for any program, project or activity which would (a) result in any significant loss of tropical forests, or (b) involve industrial timber extraction in primary tropical forest areas?

13. No.

14. **PVO Assistance**

14.

a. **Auditing and registration** (FY 1993 Appropriations Act Sec. 536): If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D., and is the PVO registered with A.I.D.?

a. N/A. The project does not anticipate providing assistance through PVOs.

b. **Funding sources** (FY 1993 Appropriations Act, Title II, under heading "Private and Voluntary Organizations"): If assistance is to be made to a United States PVO (other than a cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government?

b. N/A

15. **Project Agreement Documentation** (State Authorization Sec. 139 (as interpreted by conference report)): Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A.I.D. LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the agreement been pouched to those same offices? (See Handbook 3, Appendix

15. N/A.

6G for agreements covered by this provision).

16. **Metric System** (Omnibus Trade and Competitiveness Act of 1988 Sec. 5164, as interpreted by conference report, amending Metric Conversion Act of 1975 Sec. 2, and as implemented through A.I.D. policy): Does the assistance activity use the metric system of measurement in its procurements, grants, and other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms? Are bulk purchases usually to be made in metric, and are components, subassemblies, and semi-fabricated materials to be specified in metric units when economically available and technically adequate? Will A.I.D. specifications use metric units of measure from the earliest programmatic stages, and from the earliest documentation of the assistance processes (for example, project papers) involving quantifiable measurements (length, area, volume, capacity, mass and weight), through the implementation stage?

16. Yes.

17. **Women in Development** (FY 1993 Appropriations Act, Title II, under heading "Women in Development"): Will assistance be designed so that the percentage of women participants will be demonstrably increased?

17. Yes. The project will train over 10,000 nurses, auxiliary nurses and community development workers many of whom are women.

18. **Regional and Multilateral Assistance** (FAA Sec. 209): Is assistance more efficiently and effectively provided through regional or multilateral organizations? If so, why is assistance not so provided? Information and conclusions on whether assistance will encourage developing countries to cooperate in regional development programs.

18. No. The assistance to be provided will be coordinated with regional and multi-lateral programs in the health sector; however the assistance under the A.I.D. project will be tailored to the unique Nicaraguan situation.

19. **Abortions** (FY 1993 Appropriations Act, Title II, under heading "Population, DA," and Sec. 524):

19.

a. Will assistance be made available to any organization or program which, as determined by the President, supports or participates in the management of a program of coercive abortion or involuntary sterilization?

a. No.

b. Will any funds be used to lobby for abortion?

b. No.

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20. **Cooperatives** (FAA Sec. 111): Will assistance help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward a better life?

20. No. The project will seek to improve the lives of rural and urban poor by improving their health status.

21. **U.S.-Owned Foreign Currencies**

21.

a. **Use of currencies** (FAA Secs. 612(b), 636(h); FY 1993 Appropriations Act Secs. 507, 509): Are steps being taken to assure that, to the maximum extent possible, foreign currencies owned by the U.S. are utilized in lieu of dollars to meet the cost of contractual and other services.

a. N/A. The U.S. owns no Nicaraguan currencies.

b. **Release of currencies** (FAA Sec. 612(d)): Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

b. No.

22. **Procurement**

22.

a. **Small business** (FAA Sec. 602(a)): Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed?

a. Yes. Short-term technical assistance to the project's Accelerated Start Component will be provided by a "Small Disadvantaged Business" as defined in AIDAR 726.101, and the planned contract for long-term technical assistance services will require that at least 10% of the value of that contract be sub-contracted to such businesses. Additionally, all qualified firms, including small businesses, will be invited to submit proposals for the provision of goods and services under the project.

b. **U.S. procurement** (FAA Sec. 604(a) as amended by section 597 of the FY 1993 Appropriations Act): Will all procurement be from the U.S., the recipient country, or developing countries except as otherwise determined in accordance with the criteria of this section?

b. Yes.

c. **Marine insurance** (FAA Sec. 604(d)): If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company?

c. N/A.

d. **Non-U.S. agricultural procurement** (FAA Sec. 604(e)): If non-U.S. procurement of agricultural commodity or product thereof is to be financed, is there provision against such

d. N/A. This project will not finance the procurement of any agricultural commodities.

procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)

e. **Construction or engineering services** (FAA Sec. 604(g)): Will construction or engineering services be procured from firms of advanced developing countries which are otherwise eligible under Code 941 and which have attained a competitive capability in international markets in one of these areas? (Exception for those countries which receive direct economic assistance under the FAA and permit United States firms to compete for construction or engineering services financed from assistance programs of these countries.)

e. N/A. This project will not procure construction or engineering services.

f. **Cargo preference shipping** (FAA Sec. 603)): Is the shipping excluded from compliance with the requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 percent of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent such vessels are available at fair and reasonable rates?

f. No.

g. **Technical assistance** (FAA Sec. 621(a)): If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? Will the facilities and resources of other Federal agencies be utilized, when they are particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

g. Yes. Technical Assistance will be provided by U.S. firms, and the expertise of the U.S. Public Health Service, which are particularly suitable for the procurement and delivery of pharmaceuticals and health-related commodities, will be used to procure and deliver such commodities.

h. **U.S. air carriers** (International Air Transportation Fair Competitive Practices Act, 1974): If air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available?

h. Yes.

i. **Termination for convenience of U.S. Government** (FY 1993 Appropriations Act Sec. 504): If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States?

i. Yes. All contracts will contain such termination clause.

j. **Consulting services** (FY 1993 Appropriations Act Sec. 523): If assistance is for consulting service through procurement contract pursuant to 5 U.S.C. 3109, are contract expenditures a matter of public record and available for public inspection (unless otherwise provided by law or Executive order)?

j. Yes.

k. **Metric conversion** (Omnibus Trade and Competitiveness Act of 1988, as interpreted by conference report, amending Metric Conversion Act of 1975 Sec. 2, and as implemented through A.I.D. policy): Does the assistance program use the metric system of measurement in its procurements, grants, and other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms? Are bulk purchases usually to be made in metric, and are components, subassemblies, and semi-fabricated materials to be specified in metric units when economically available and technically adequate? Will A.I.D. specifications use metric units of measure from the earliest programmatic stages, and from the earliest documentation of the assistance processes (for example, project papers) involving quantifiable measurements (length, area, volume, capacity, mass and weight), through the implementation stage?

k. Yes.

l. **Competitive Selection Procedures** (FAA Sec. 601(e)): Will the assistance utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

l. Yes.

23. **Construction**

23.

a. **Capital project** (FAA Sec. 601(d)): If capital (e.g., construction) project, will U.S. engineering and professional services be used?

a. N/A. This is not a capital project.

b. **Construction contract** (FAA Sec. 611(c)): If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?

b. N/A. This project will not finance contracts for construction.

c. **Large projects, Congressional approval** (FAA Sec. 620(k)): If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed

c. N/A. This project will not assist in the construction of productive enterprise.

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$100 million (except for productive enterprises in Egypt that were described in the Congressional Presentation), or does assistance have the express approval of Congress?

24. **U.S. Audit Rights** (FAA Sec. 301(d)): If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?

24. N/A.

25. **Communist Assistance** (FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries?

25. Yes.

26. **Narcotics**

26.

a. **Cash reimbursements** (FAA Sec. 483): Will arrangements preclude use of financing to make reimbursements, in the form of cash payments, to persons whose illicit drug crops are eradicated?

a. Yes.

b. **Assistance to narcotics traffickers** (FAA Sec. 487): Will arrangements take "all reasonable steps" to preclude use of financing to or through individuals or entities which we know or have reason to believe have either: (1) been convicted of a violation of any law or regulation of the United States or a foreign country relating to narcotics (or other controlled substances); or (2) been an illicit trafficker in, or otherwise involved in the illicit trafficking of, any such controlled substance?

b. Yes.

27. **Expropriation and Land Reform** (FAA Sec. 620(g)): Will assistance preclude use of financing to compensate owners for expropriated or nationalized property, except to compensate foreign nationals in accordance with a land reform program certified by the President?

27. Yes. No project funds will be used to compensate owners for expropriated or nationalized property.

28. **Police and Prisons** (FAA Sec. 660): Will assistance preclude use of financing to provide training, advice, or any financial support for police, prisons, or other law enforcement forces, except for narcotics programs?

28. Yes.

29. **CIA Activities** (FAA Sec. 662): Will assistance preclude use of financing for CIA activities?	29. Yes.
30. **Motor Vehicles** (FAA Sec. 636(i)): Will assistance preclude use of financing for purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained?	30. Yes. All motor vehicles financed under this Project will be manufactured in the U.S.
31. **Military Personnel** (FY 1993 Appropriations Act Sec. 503): Will assistance preclude use of financing to pay pensions, annuities, retirement pay, or adjusted service compensation for prior or current military personnel?	31. Yes.
32. **Payment of U.N. Assessments** (FY 1993 Appropriations Act Sec. 505): Will assistance preclude use of financing to pay U.N. assessments, arrearages or dues?	32. Yes.
33. **Multilateral Organization Lending** (FY 1993 Appropriations Act Sec. 506): Will assistance preclude use of financing to carry out provisions of FAA section 209(d) (transfer of FAA funds to multilateral organizations for lending)?	33. Yes.
34. **Export of Nuclear Resources** (FY 1993 Appropriations Act Sec. 510): Will assistance preclude use of financing to finance the export of nuclear equipment, fuel, or technology?	34. Yes.
35. **Repression of Population** (FY 1993 Appropriations Act Sec. 511): Will assistance preclude use of financing for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?	35. Yes.
36. **Publicity or Propaganda** (FY 1993 Appropriations Act Sec. 516): Will assistance be used for publicity or propaganda purposes designed to support or defeat legislation pending before Congress, to influence in any way the outcome of a political election in the United States, or for any publicity or propaganda purposes not authorized by Congress?	36. No.
37. **Marine Insurance** (FY 1993 Appropriations Act Sec. 560): Will any A.I.D. contract and	37. Yes.

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solicitation, and subcontract entered into under such contract, include a clause requiring that U.S. marine insurance companies have a fair opportunity to bid for marine insurance when such insurance is necessary or appropriate?

38. **Exchange for Prohibited Act** (FY 1993 Appropriations Act Sec. 565): Will any assistance be provided to any foreign government (including any instrumentality or agency thereof), foreign person, or United States person in exchange for that foreign government or person undertaking any action which is, if carried out by the United States Government, a United States official or employee, expressly prohibited by a provision of United States law?

38. No.

39. **Commitment of Funds** (FAA Sec. 635(h)): Does a contract or agreement entail a commitment for the expenditure of funds during a period in excess of 5 years from the date of the contract or agreement?

39. No.

40. **Impact on U.S. Jobs** (FY 1993 Appropriations Act, Sec. 599):

40.

(a) Will any financial incentive be provided to a business located in the U.S. for the purpose of inducing that business to relocate outside the U.S. in a manner that would likely reduce the number of U.S. employees of that business?

a. No.

(b) Will assistance be provided for the purpose of establishing or developing an export processing zone or designated area in which the country's tax, tariff, labor, environment, and safety laws do not apply? If so, has the President determined and certified that such assistance is not likely to cause a loss of jobs within the U.S.?

b. No.

(c) Will assistance be provided for a project or activity that contributes to the violation of internationally recognized workers rights, as defined in section 502(a)(4) of the Trade Act of 1974, of workers in the recipient country?

c. No.

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B. CRITERIA APPLICABLE TO DEVELOPMENT ASSISTANCE ONLY	B. CRITERIA APPLICABLE TO DEVELOPMENT ASSISTANCE ONLY
1. **Agricultural Exports (Bumpers Amendment)** (FY 1993 Appropriations Act Sec. 521(b), as interpreted by conference report for original enactment): If assistance is for agricultural development activities (specifically, any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities: (1) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States, and can the activities reasonably be expected to cause substantial injury to U.S. exporters of a similar agricultural commodity; or (2) in support of research that is intended primarily to benefit U.S. producers?	1. N/A. This assistance is not for agricultural development activities.
2. **Tied Aid Credits** (FY 1993 Appropriations Act, Title II, under heading "Economic Support Fund"): Will DA funds be used for tied aid credits?	2. No.
3. **Appropriate Technology** (FAA Sec. 107): Is special emphasis placed on use of appropriate technology (defined as relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor?	3. Yes. The project will promote the delivery of appropriate primary health care services in ways appropriate to the lifestyles of Nicaragua's rural and urban poor.
4. **Indigenous Needs and Resources** (FAA Sec. 281(b)): Describe extent to which the activity recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civic education and training in skills required for effective participation in governmental and political processes essential to self-government.	4. The project was developed in close collaboration with local counterparts. It seeks to train significant number of Nicaraguans in more efficient delivery of health services, and to strengthen institutions at both the national and local levels.
5. **Economic Development** (FAA Sec. 101(a)): Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?	5. Yes. A strong, sound health delivery system is essential to sustained development. The project will help Nicaragua develop such a system.

6. **Special Development Emphases** (FAA Secs. 102(b), 113, 281(a)): Describe extent to which activity will: (a) effectively involve the poor in development by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, dispersing investment from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using appropriate U.S. institutions; (b) encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries.

6. (a) The project will improve the quality and efficiency of health delivery services in Nicaragua and will benefit over 500,000 mothers and children throughout the country. The vast majority of the people to be benefitted are poor.

(b) The SILAIS system which the project will support increases local control of health services.

(c) The project supports the efforts of the MINSA.

(d) A significant number of the project beneficiaries are female nurses, auxiliary nurses and community workers who will be trained under the project.

(e) Consultants to be provided under the project will apply relevant, successful experiences of countries in the region in the health sector.

7. **Recipient Country Contribution** (FAA Secs. 110, 124(d)): Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?

7. Yes. The GON will contribute in excess of 25 percent of the total project cost, in the form of salaries, operating expenses, local materials, maintenance costs, etc. for personnel and facilities engaged in project implementation.

8. **Benefit to Poor Majority** (FAA Sec. 128(b)): If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority?

8. Yes. The target population includes Nicaragua's mothers and children. The vast majority of these beneficiaries are poor.

9. **Abortions** (FAA Sec. 104(f); FY 1993 Appropriations Act, Title II, under heading "Population, DA," and Sec. 534):

9.

a. Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions?

a. No.

b. Are any of the funds to be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilizations?

b. No.

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c. Are any of the funds to be made available to any organization or program which, as determined by the President, supports or participates in the management of a program of coercive abortion or involuntary sterilization?

c. No.

d. Will funds be made available only to voluntary family planning projects which offer, either directly or through referral to, or information about access to, a broad range of family planning methods and services?

d. Yes.

e. In awarding grants for natural family planning, will any applicant be discriminated against because of such applicant's religious or conscientious commitment to offer only natural family planning?

e. No.

f. Are any of the funds to be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning?

f. No.

g. Are any of the funds to be made available to any organization if the President certifies that the use of these funds by such organization would violate any of the above provisions related to abortions and involuntary sterilization?

g. No.

10. **Contract Awards** (FAA Sec. 601(e)): Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

10. Yes.

11. **Disadvantaged Enterprises** (FY 1993 Appropriations Act Sec. 563): What portion of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 40 percent of the students are Hispanic Americans, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)?

11. Short-term technical assistance to the project's Accelerated Start Component will be provided by a "Small Disadvantaged Business" as defined in AIDAR 726.101. The estimated value of this contract is $300,000. Beyond this, no fixed percentage of the A.I.D. funds has been set aside for goods and services to be procured through economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 40 percent of the students are Hispanic Americans, or private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including

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women), but such entities will be given full and fair opportunity to tender on sales of commodities and services under the project. Additionally, Gray Amendment entities will be encouraged to compete for the long term institutional contract for technical assistance to be funded by DHS, and the RFP for this contract will contain a provision requiring at least 10 percent subcontracting to Gray Amendment entities.

12. **Biological Diversity** (FAA Sec. 119(g): Will the assistance: (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas?

12. No.

13. **Tropical Forests** (FAA Sec. 118; FY 1991 Appropriations Act Sec. 533(c) as referenced in section 532(d) of the FY 1993 Appropriations Act):

13.

a. **A.I.D. Regulation 16:** Does the assistance comply with the environmental procedures set forth in A.I.D. Regulation 16?

a. Yes.

b. **Conservation:** Does the assistance place a high priority on conservation and sustainable management of tropical forests? Specifically, does the assistance, to the fullest extent feasible: (1) stress the importance of conserving and sustainably managing forest resources; (2) support activities which offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and help countries identify and implement alternatives to colonizing forested areas: (3) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management; (4) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices; (5) help conserve forests which have not yet been degraded by helping to increase production on lands already cleared or degraded; (6) conserve forested watersheds and rehabilitate those which have been

b. No.

deforested; (7) support training, research, and other actions which lead to sustainable and more environmentally sound practices for timber harvesting, removal, and processing; (8) support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss, or degradation; (9) conserve biological diversity in forest areas by supporting efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis, by making the establishment of protected areas a condition of support for activities involving forest clearance or degradation, and by helping to identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas; (10) seek to increase the awareness of U.S. Government agencies and other donors of the immediate and long-term value of tropical forests; (11) utilize the resources and abilities of all relevant U.S. government agencies; (12) be based upon careful analysis of the alternatives available to achieve the best sustainable use of the land; and (13) take full account of the environmental impacts of the proposed activities on biological diversity?

c. **Forest degradation:** Will assistance be used for: (1) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems; (2) actions which will significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas; (3) activities which would result in the conversion of forest lands to the rearing of livestock; (4) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undergraded forest lands; (5) the colonization of forest lands; or (6) the construction of dams or other water control structures which flood relatively undergraded forest lands, unless with respect to each such activity an environmental assessment indicates that the activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports

c. No.

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sustainable development?

d. **Sustainable forestry:** If assistance relates to tropical forests, will project assist countries in developing a systematic analysis of the appropriate use of their total tropical forest resources, with the goal of developing a national program for sustainable forestry?

d. N/A.

e. **Environmental impact statements:** Will funds be made available in accordance with provisions of FAA Section 117(c) and applicable A.I.D. regulations requiring an environmental impact statement for activities significantly affecting the environment?

e. Yes, funds will be made available in accordance with the provisions of FAA Section 117(c) and applicable A.I.D. regulations requiring an environmental impact statement for activities significantly affecting the environment. As discussed in Annex I to this Project Paper, this project is not expected to have any significant impact on the environment.

14. **Energy** (FY 1991 Appropriations Act Sec. 533(c) as referenced in section 532(d) of the FY 1993 Appropriations Act): If assistance relates to energy, will such assistance focus on: (a) end-use energy efficiency, least-cost energy planning, and renewable energy resources, and (b) the key countries where assistance would have the greatest impact on reducing emissions from greenhouse gases?

14. N/A.

15. **Debt-for-Nature Exchange** (FAA Sec. 463): If project will finance a debt-for-nature exchange, describe how the exchange will support protection of: (a) the world's oceans and atmosphere, (b) animal and plant species, and (c) parks and reserves; or describe how the exchange will promote: (d) natural resource management, (e) local conservation programs, (f) conservation training programs, (g) public commitment to conservation, (h) land and ecosystem management, and (i) regenerative approaches in farming, forestry, fishing, and watershed management.

15. N/A.

16. **Deobligation/Reobligation** (FY 1993 Appropriations Act Sec. 515): If deob/reob authority is sought to be exercised in the provision of DA assistance, are the funds being obligated for the same general purpose, and for countries within the same region as originally obligated, and have the House and Senate Appropriations Committees been properly notified?

16. N/A.

17. **Loans**

a. **Repayment capacity** (FAA Sec. 122(b)): Information and conclusion on capacity of the country to repay the loan at a reasonable rate of interest.

b. **Long-range plans** (FAA Sec. 122(b)): Does the activity give reasonable promise of assisting long-range plans and programs designed to develop economic resources and increase productive capacities?

c. **Interest rate** (FAA Sec. 122(b)): If development loan is repayable in dollars, is interest rate at least 2 percent per annum during a grace period which is not to exceed ten years, and at least 3 percent per annum thereafter?

d. **Exports to United States** (FAA Sec. 620(d)): If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20 percent of the enterprise's annual production during the life of the loan, or has the requirement to enter into such an agreement been waived by the President because of a national security interest?

17. N/A. The project is grant-funded.

18. **Development Objectives** (FAA Secs. 102(a), 111, 113, 281(a)): Extent to which activity will: (1) effectively involve the poor in development, by expanding access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (2) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (3) support the self-help efforts of developing countries; (4) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (5) utilize and encourage regional cooperation by developing countries?

18. (1) The project will assist the GON in providing decentralized health services through its SILAIS structure, which places the responsibility for provision and management of health care services closer to the local level.

(2) The project will not be involved in the development of cooperatives.

(3) The DHS Project will help the GON explore and test alternate sources of financing for its health services, thereby helping move its severely burdened health system toward financial sustainability.

(4) Most of the beneficiaries of improved health services, and approximately 40% of those who will receive training from the project, will be women.

(5) The interventions to be supported by DHS are not appropriate for a regional project.

19. **Agriculture, Rural Development and Nutrition, and Agricultural Research** (FAA Secs. 103 and 103A):	19.
a. **Rural poor and small farmers:** If assistance is being made available for agriculture, rural development or nutrition, describe extent to which activity is specifically designed to increase productivity and income of rural poor; or if assistance is being made available for agricultural research, has account been taken of the needs of small farmers, and extensive use of field testing to adapt basic research to local conditions shall be made.	a. N/A.
b. **Nutrition:** Describe extent to which assistance is used in coordination with efforts carried out under FAA Section 104 (Population and Health) to help improve nutrition of the people of developing countries through encouragement of increased production of crops with greater nutritional value; improvement of planning, research, and education with respect to nutrition, particularly with reference to improvement and expanded use of indigenously produced foodstuffs; and the undertaking of pilot or demonstration programs explicitly addressing the problem of malnutrition of poor and vulnerable people.	b. Nutrition education to be furnished to the general population under this project through health workers will teach mothers and caretakers to recognize the danger signs of malnutrition and to bring their children to a health center when those signs are present, and will emphasize the growing and consumption of indigenous crops of high nutritional value.
c. **Food security:** Describe extent to which activity increases national food security by improving food policies and management and by strengthening national food reserves, with particular concern for the needs of the poor, through measures encouraging domestic production, building national food reserves, expanding available storage facilities, reducing post harvest food losses, and improving food distribution.	c. The project will promote one of the key aspects of food security, food utilization, by helping the GON provide better access for Nicaragua's poor to primary health services, including nutrition education.
20. **Population and Health** (FAA Secs. 104(b) and (c)): If assistance is being made available for population or health activities, describe extent to which activity emphasizes low-cost, integrated delivery systems for health, nutrition and family planning for the poorest people, with particular attention to the needs of mothers and young children, using paramedical and auxiliary medical personnel, clinics and health posts, commercial distribution systems, and other modes of community outreach.	20. The primary thrust of this project is along precisely the lines set forth in the cited FAA Sections.

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21. Education and Human Resources Development (FAA Sec. 105): If assistance is being made available for education, public administration, or human resource development, describe (a) extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, and strengthens management capability of institutions enabling the poor to participate in development; and (b) extent to which assistance provides advanced education and training of people of developing countries in such disciplines as are required for planning and implementation of public and private development activities.

21. N/A.

22. Energy, Private Voluntary Organizations, and Selected Development Activities (FAA Sec. 106): If assistance is being made available for energy, private voluntary organizations, and selected development problems, describe extent to which activity is:

22. N/A.

a. concerned with data collection and analysis, the training of skilled personnel, research on and development of suitable energy sources, and pilot projects to test new methods of energy production; and facilitative of research on and development and use of small-scale, decentralized, renewable energy sources for rural areas, emphasizing development of energy resources which are environmentally acceptable and require minimum capital investment;

b. concerned with technical cooperation and development, especially with U.S. private and voluntary, or regional and international development, organizations;

c. research into, and evaluation of, economic development processes and techniques;

d. reconstruction after natural or manmade disaster and programs of disaster preparedness;

e. for special development problems, and to enable proper utilization of infrastructure and related projects funded with earlier U.S. assistance;

f. for urban development, especially small, labor-intensive enterprises, marketing

systems for small producers, and financial or other institutions to help urban poor participate in economic and social development.

23. **Capital Projects** (Jobs Through Export Act of 1992, Secs. 303 and 306(d)): If assistance is being provided for a capital project, is the project developmentally sound and will the project measurably alleviate the worst manifestations of poverty or directly promote environmental safety and sustainability at the community level?

23. N/A.

ANNEX D:

ADMINISTRATIVE ANALYSIS

ANNEX D: ADMINISTRATIVE ANALYSIS

I. Institutional Background

Before the 1979 revolution, Nicaragua's health system was fragmented: 23 different institutions provided health care to different segments of the population. These included the Ministry of Health (MINSA), the National Social Security Institute (INSSBI), the National Board for Social Welfare (INAPS) and local boards for Social Assistance. To consolidate responsibility for health care, in August 1979 the new Sandinista government integrated these providers into the **Sistema Nacional Unico de Salud** (the Single National Health System). A decade later, in 1989, it reorganized primary level health services (Resolution 75 of the Ministry of Health) into 91 areas of health and 143 municipalities which serve as basic territorial units.

Article Nine of Law Decree No. 1-90, which creates the different State Ministries, assigns to the Ministry of Health (MINSA) the following functions and attributes:

- Provision of health services
- Development of health plans
- Surveillance of national health status
- Production and importation of medicines, surgical and health instruments and equipment
- Scientific training and investigation in health
- Environmental health including hygienic habits of the population
- Control of professionals and technicians working in the health sector
- Hygiene and quality control of medicines, foodstuffs, beverages and water
- Construction of hospitals and health centers.

MINSA carries out these responsibilities through a network of health units:

- Regional Hospitals act as referral centers.
- Health Centers provide treatment for common health problems, attend births, and provide pre- and post-natal care.

- Medical Posts provide immunizations, ORS packets, and follow-up to the treatment of diarrheal illnesses.

- Health Posts are staffed by auxiliary nurses responsible for visiting the community and providing immunizations and basic medications.

Each of these organizes its operations according to a set of regulations, norms and procedures as well as protocols and responsibilities established by technical departments and the respective governing boards.

Currently, MINSA is the major provider of health services in Nicaragua. It delivers health care to approximately 70% of the population. The extent of private sector health service provision in Nicaragua is unclear, but available estimates indicate that ambulatory care coverage by religious organizations and NGOs could account for as much as 4% of total coverage.

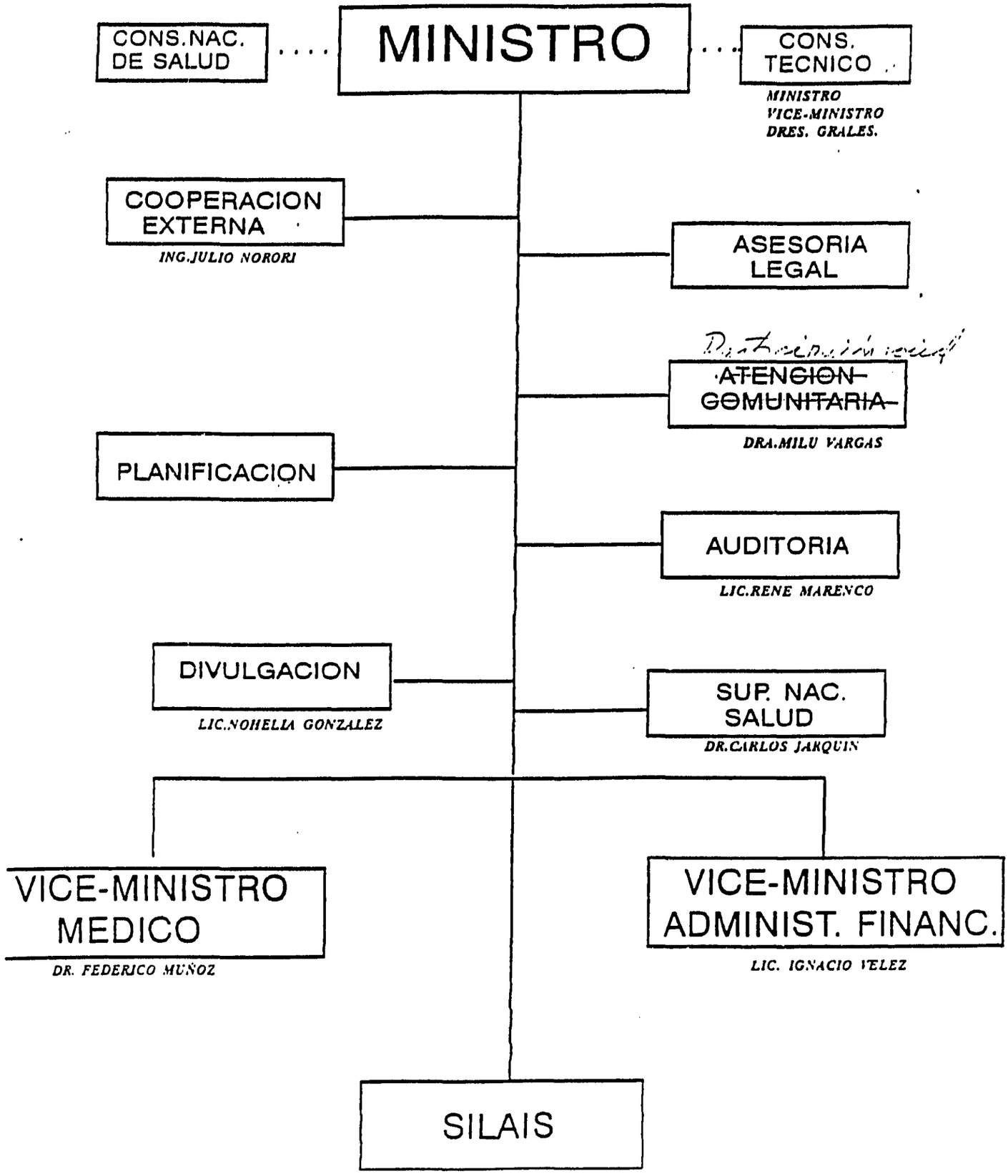
The Ministry of Defense, the Security Ministry, the private sector, and Non-Governmental Organizations (NGOs) also provide health services to specific social sectors and population groups. Each has its own rules and practices, independent of but in accordance with MINSA norms.

II. MINSA Organizational Structure

A. Central Level Structure

At the central level, MINSA's structure consists of technical and administrative support offices (see Figure D-1, MINSA Organization Chart, 1993, on the following page). Certain functions, including planning (responsible for policy development, strategic planning and institutional development of the Ministry), external cooperation (coordinates external assistance), auditing and epidemiological surveillance are directly linked to the Office of the Minister. Administrative offices include the General Directorates of Economics, in charge of investment planning, accounting, budgeting and personnel planning; the General Directorate for Infrastructure and Maintenance; the General Directorate of Human Resources, which oversees personnel issues and training; and the General Directorate for Supplies, including procurement and distribution. There are four technical Directorates: Medical Training, Services Development, Health Promotion and Hygiene and Communicable Diseases.

The central level has the following principal functions: the definition of policies and formulation of sectoral strategies; the elaboration of technical norms; compliance with the norms and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CONS.NAC. DE SALUD
CONS. TECNICO
MINISTRO
VICE-MINISTRO
DRES. GRALES.
COOPERACION EXTERNA
ING.JULIO NORORI
ASESORIA LEGAL
ATENCION COMUNITARIA
DRA.MILU VARGAS
PLANIFICACION
AUDITORIA
LIC.RENE MARENCO
DIVULGACION
LIC.NOHELIA GONZALEZ
SUP. NAC. SALUD
DR.CARLOS JARQUIN
VICE-MINISTRO MEDICO
DR. FEDERICO MUÑOZ
VICE-MINISTRO ADMINIST. FINANC.
LIC. IGNACIO VELEZ
SILAIS

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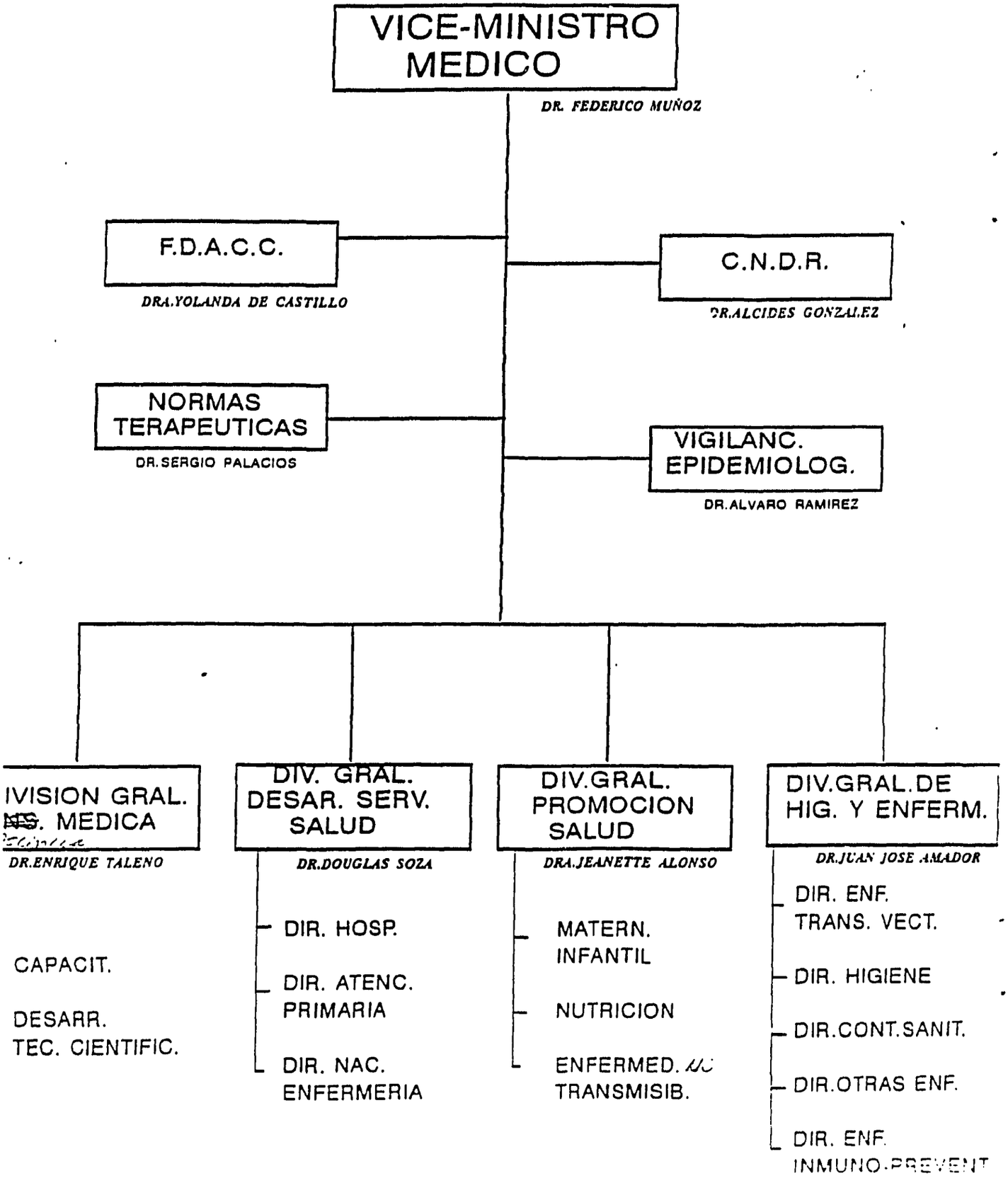
MINISTERIO DE SALUD



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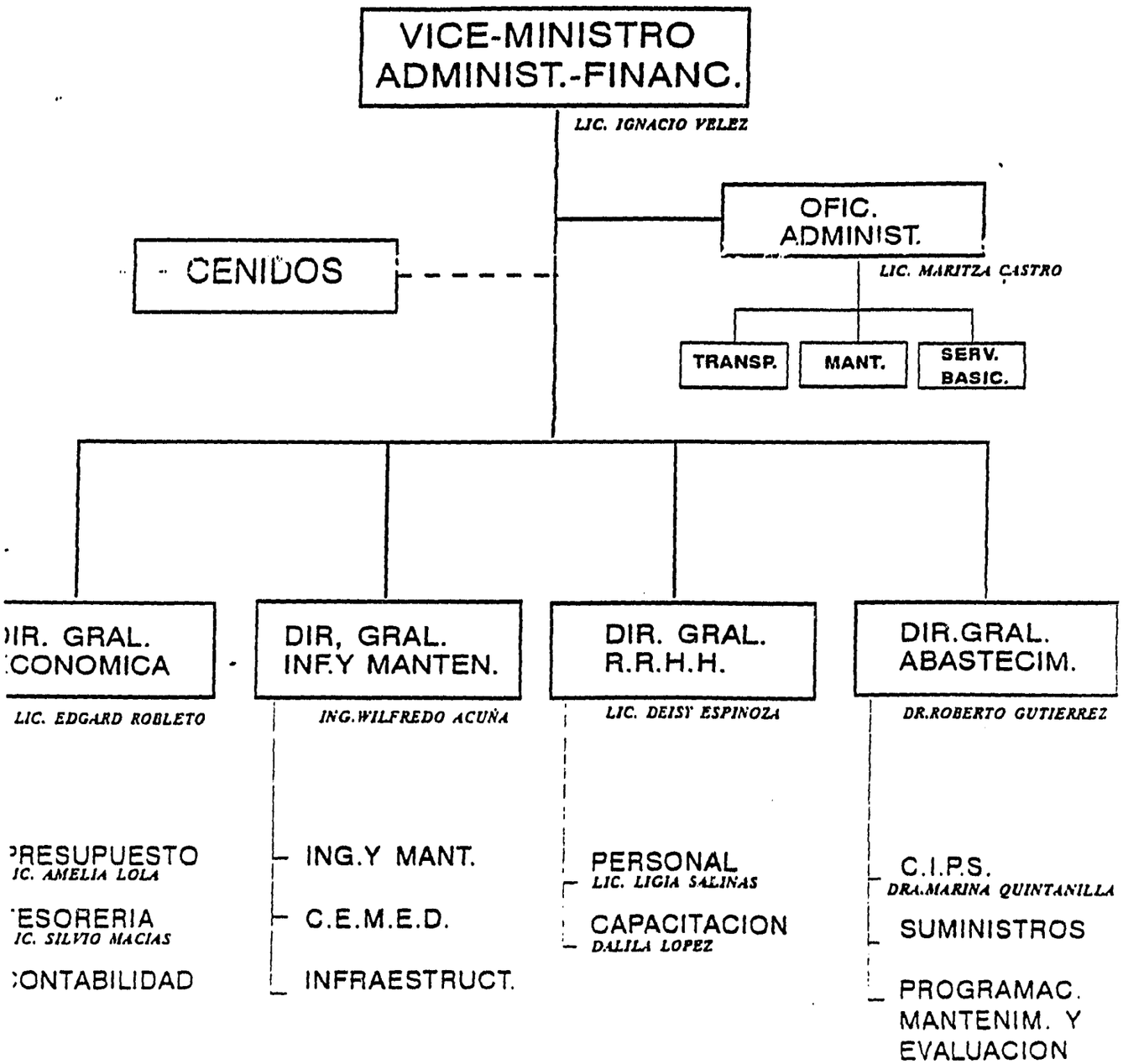

procedures utilized in health care; the regulation and filling of positions; and the coordination of external assistance.

B. Local Level Structure - SILAIS

In February 1991, MINSA approved Resolution 91, which created the **Sistemas Locales de Atención Integral de Salud** (the Local Systems of Integrated Health Care, or SILAIS) in 19 geographic areas throughout the country. The General Directorate for Medical Attention (now Health Promotion) was given responsibility for organizing and overseeing a committee to develop and implement this new structure. The committee, the Comisión Nacional de SILAIS (CNS), was made up of representatives from the central level. By the end of 1991, the CNS had been organized into four major areas of study and action (health services referral system; integration of programs; management; human resources), each responsible for developing corresponding areas defined in the SILAIS "Marco Conceptual" (conceptual framework - Serie SILAIS 1, July, 1991). Among the notable acts of the CNS were the introduction of functional changes at the central and regional levels and the transfer of oversight of hospital services from the regions to the SILAIS (Serie SILAIS 5, p. 10-11). Subsequently, per Ministerial Resolution 100, April, 1992, the Regional Offices were eliminated, thereby creating a system composed only of the Central Level and the SILAIS.

Since the further reorganization of MINSA in early 1993, the functions formerly performed by the CNS have been incorporated directly under the authority of the Minister. The Office of the Minister is now responsible for developing procedures to improve efficiency in the SILAIS, including the decentralization of information systems and certain budget authorities.[1] In the Project Grant Agreement for DHS, however, MINSA will covenant to reconstitute the CNS as the principal coordinating body for external donor assistance to the SILAIS, and to make all principal donors members of that body.

Within the National Health System, the SILAIS constitute the basic organizational unit, in which a set of sectoral and extra-sectoral resources, mechanisms, policies and administrative units are brought together under unified management for the development of health care for a specific service area.

The specific objectives of the SILAIS are the following:

- Facilitate the local management of the National Health Plan through technical-administrative decentralization.

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[1] Propuesta de Descentralización de la Administración del Presupuesto del Ministerio de Salud, MINSA and MIFIN, December 11, 1992 (document in draft).

- Consolidate the process of providing health care through the integration of all health care facilities (including hospitals) under its corresponding technical-administrative director.

- Expand the coverage of high risk cases.

- Promote the participation of other institutions and social groups in the solution of health problems.

- Implement a process of Social Communication and Sanitary Education to address the major health problems.

Minimum staffing for each SILAIS includes: a Director (preferably with experience in health administration); an epidemiologist; an administrator; a nurse; a statistician; and a sanitary worker. Together, they are responsible for the management and planning of health care in their respective SILAIS. The Director of each SILAIS has the authority to coordinate with other sectoral and private institutions and foreign cooperation agencies on any subject related to health services, as well as to direct all human and material resources of MINSA within his/her territory. The SILAIS may also assume responsibility for arranging a temporary transfer of goods and/or personnel from other SILAIS. However, the SILAIS do not now have the authority to redefine personnel or material needs based on analyses of demand for health services, epidemiological profile or population density of the SILAIS.

Each SILAIS also has a Health Council composed of a Director, technical staff, municipal mayors, hospital directors, persons responsible for municipal health services, and formal and informal representatives of the community. This council plays an important role as a sounding board for the discussion of health problems between the public sector and community groups.

C. Human Resources

MINSA now employs about 23,200 people, 50% more than in 1980. (See Table D-1 on the following page.) Current staffing at MINSA not only reflects a curative care bias, but lack of personnel management and administration. Primary health care is physician-oriented. The proportion of physician to support staff is much too high. There are only 0.9 nurses per doctor compared to an international standard of four per doctor. The number of auxiliary nurses per physician is also low.[2]

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[2] "The Nicaraguan Health Sector: A Preliminary Analysis. A report prepared by Barry D. Smith, MD, MPH, PRITECH Consultant. August, 1990. p. 33.

Table D-1: Nicaragua: Ministry of Health Human Resources (1979-1990)

Category	1979	1980	1984	1989	1990
Doctors	1,345	1,212	2,172	2,462	2,417
Nurses	640	808	1,271	1,580	2,092
Dentists	179	190	222	320	261
Aux. Nurses	3,176	3,879	4,378	5,245	5,398
Other Tech.	--	--	9,610	8,485	8,233
Administrative	--	--	3,879	4,130	4,784
TOTALS	--	15,500	21,532	22,222	23,185

Sources: 1979-1984, R. Garfield, Health Care in Nicaragua, unpublished draft, 1990.

1989-1990, MINSA, Plan Maestro de Salud 1991-1996.

An over-supply of doctors in the country appears to be the driving force behind the over-staffing of physicians in the MINSA. In addition, MINSA suffers from high personnel turnover (over 30% a year between 1987-1990) which undermines efficient administration of most programs and impairs routine development of skills. It is believed that high turnover is at least partly the result of low pay scales for MINSA employees.

D. Physical Infrastructure

Nicaragua's primary health care network has expanded four-fold since 1980, and almost all population settlements with than more 5,000 people have a health facility nearby. As of 1991, there were a total of 843 facilities supported by 13 teaching units, 24 warehouses and 14 administrative offices. Health posts and centers are fairly well distributed geographically. The number of hospitals beds has increased by approximately 20 percent since 1975.

However, because of the obsolete state of some facilities and years of lack of maintenance, the condition of health facilities at all levels is generally poor throughout the country. Equipment is also in disrepair at all levels of the health care system, particularly in hospitals and rural health facilities. It is estimated that about half of all MINSA medical equipment is in need of repair.

E. Health Service Delivery System

Despite the efforts to increase coverage of primary health care through this extensive network of health centers and health posts, public health indicators have not improved as much as expected. This is largely because a curative approach has predominated over preventive activities. As a result, morbidity and curative consultations have increased more rapidly than child-health check-ups and pre- and post-natal controls. Health and nutrition education, growth monitoring, and breastfeeding, for example, are not always routinely included in primary health activities, although these interventions are well within the reach of MINSA despite its limited resources. The heavy reliance on curative medicine unnecessarily raises costs.

During the 1980's, health care delivery was supported by 15,000 community health workers (CHWs) selected by "movimiento comunal." These volunteers have provided support for immunization campaigns by encouraging residents to come to vaccination centers at appropriate times. After the change in government in 1990, CHWs in many communities became less active. In other communities, however, they continue to provide extensive support for both immunization and anti-cholera campaigns.

Training for CHWs has been sporadic, driven mostly by immediate requirements (e.g., cholera, immunization, malaria) than by any organized effort to provide CHWs with a full range of skills to meet basic community health care needs/referrals. "Spot" training has been provided by MINSA and by a number of organizations with which individual CHWs may be associated (e.g., NGOs, local agencies). Now that MINSA is taking a more active interest in the role and potential contribution of the CHWs to health care coverage, it hopes to systematize and maintain records of types and location of training provided, and to develop curricula reflective of community needs as defined by the CHWs themselves and by local Health Councils. The CHWs' responsibilities are expected to emphasize community motivation and education, but they lack training in the promotional aspects of integrated primary care delivery.

Supervision of CHWs is, by law, the responsibility of MINSA. However, it is widely recognized that whatever supervision does take place largely depends on the individual motivation of staff at respective SILAIS and health centers. The actual use of CHWs in the promotion of health care will also likely be governed by individual SILAIS' perceptions of their utility, as well as by geography and distance factors.

Generally speaking, CHWs seem to be working well when given adequate training, supervision and some recognition. The productive and, virtually, indispensable role of CHWs is most obvious in immunization and cholera campaigns. Given CHWs'

satisfactory performance to-date in these selected areas of health care, and frequently expressed desires among CHWs themselves to do more, these volunteers could realistically be counted on to provide MH/CS services ascribed to them in Section III of this Project Paper.

III. MINSA Reorganization Process

MINSA has been undergoing a process of administrative reorganization during both the past and present governments. This reorganization has been driven by the clear and growing recognition among both MINSA officials and donor agencies that the faults in Nicaragua's health service delivery system -- insufficiency (in quantity and quality) of health services, the lack of control and evaluation of health interventions, the limited managerial capacity at all levels, and the lack of adequate methods and mechanisms for efficient allocation and use of resources -- calls for a fundamental restructuring of the system.

In response, MINSA has formulated and is carrying out a strategy of decentralization, the principal element of which has been the creation of the SILAIS. The most important aspect of the decentralization of administration and services is that each individual SILAIS will (in theory) be more responsive to perceived conditions and needs in their service areas. In other words, the delivery of services, both curative and preventive, will be planned and implemented by SILAIS staff in conjunction with input from their health centers and posts.

There is a strong commitment to decentralize responsibility for health care to the SILAIS. The Regions were eliminated as an organizational unit of MINSA in June 1992, when the transfer of human and physical resources to the SILAIS was completed. The SILAIS concept promises to strengthen Nicaragua's national health system. Intermediate units, closely located to the service areas and facilities, will facilitate administrative action. This will promote decentralization, especially if the SILAIS maintain and exercise effectively their authority over hospitals. The integration of hospitals with SILAIS will permit better analysis, discussion and distribution of resources for preventive programs and better coordination of patient referral and counter-referral. In addition, the SILAIS are expected to stimulate a highly active participation on the part of local communities and municipal governments in search of new resources for health. (See Annex H, "Social Soundness Analysis", for further details on this expected phenomenon.)

IV. Management Problems of MINSA and the SILAIS

MINSA itself has identified problems of varying degrees of severity concerning its operations. In MINSA's own view, the main problems are:

- MINSA management systems are underdeveloped and management skills are weak at all levels of the health system.
- Information systems do not provide sufficient information on morbidity and mortality, cost and production of services.
- Directors and administrators are not sufficiently well trained to seek more efficient ways to utilize resources.
- MINSA has limited capacity to plan and budget programs and monitor performance.
- MINSA has been unable to comply with requests from the Ministry of Finance (MiFin) for quantitative justification of budget estimates.

These factors are linked by scarcity of reliable systematic information, lack of specialized economic analysis personnel, weakness of intermediate support staff and inappropriate budgetary procedures.

MINSA's personnel management systems cannot assure that employees are matched with suitable jobs or identify those employees that have either had or require specific training. A more integrated approach to primary health care will require the revision of current job descriptions for preventive health care personnel and corresponding training to prepare those personnel to carry out the duties appropriate to their positions.

Another of MINSA's management weaknesses is the lack of systematic supervision of its human resources. Supervision is sometimes included in some of the vertical program activities, but the practice is not widespread. MINSA started a program to develop supervisory manuals, but this effort was abandoned. The result has been a lack of clear norms or procedures for supervision. The lack of supervision in part explains the poor quality and inefficiency of some services, and the low skill levels of the health care providers.

MINSA's system for the provision of basic supplies, principal medicines and other medical needs also suffers from various deficiencies. These range from weaknesses in the ability to determine what those needs are to problems of acquisition, storage and distribution, especially of medicines and other medical supplies. First, selection of drugs is inadequate. Even though a list of essential drugs (accompanied by therapeutic

guidelines) has been prepared, it has 392 products, over 100 more than deemed necessary according to WHO guidelines. Second, utilization of pharmaceuticals on both an in-patient and out-patient basis needs to be improved. Available data indicates that some medicines are often prescribed incorrectly (such as antibiotics for diarrhea), and that there is a general tendency to overprescribe medications. Third, procedures for estimating needs are weak at all levels of the health system, a weakness that largely results from a lack of trained personnel and the high turnover rate. Fourth, lack of logistical support accompanied by an inadequate warehousing network and poor inventory practices leads to waste (outdated medicines), inadequate distribution practices, and theft (MINSA drugs are often found for sale in markets).

During the last decade, MINSA made efforts to institute effective planning and management. However, years of economic crisis and war did not allow it to develop an adequate organizational capacity. In addition, a by-product of the strong reliance on community participation for the implementation of priority interventions (such as campaigns) has been that MINSA carried out many of its regular programs outside the institutional structure, in a vertical way, and hence did not adequately strengthen its organizational capacity. Inappropriate staffing patterns and distribution of personnel by level of care as well as inadequate financial management information systems are the main areas where MINSA's lack of institutional capacity is most apparent. This results not only from lack of financial resources but from a complex and fragmented structure where planning and coordination of programs is difficult and laborious. This is clearly reflected in a management culture that lacks standard norms and procedures, and compounded by technical weaknesses in staff, particularly at the managerial and administrative levels.

As of March 1992, when the first progress reports on the implementation of the SILAIS program was prepared (Serie SILAIS 5), most SILAIS were not fully equipped or staffed. Operational problems cited by SILAIS personnel themselves included inadequate decentralization of authorities, deficiencies in planning and coordination, inadequate information systems and training needs. It is worth noting, however, that the CNS has been making strides in addressing each of these areas, e.g., proposals for selected decentralized budget and other authorities are now being reviewed, and a project for the implementation of a health information system has been developed with the assistance of the bilateral Spanish aid program.

V. Project Actions in Management Decentralization

A. Management Policy Issues

Donors such as USAID, PAHO/WHO, UNDP and the World Bank have for some time encouraged MINSA to adopt policies designed to foster greater local participation in the determination of health priorities and appropriate assignment of resources. From an administrative viewpoint, each SILAIS must be able to determine the nature and extent of the population at risk in its area of responsibility, allocate available resources, and evaluate the cost-effectiveness of possible interventions. In order to accomplish these goals, each SILAIS needs to have the capacity to collect, process, analyze, and interpret basic demographic data, specific morbidity and mortality patterns, and the demand for and cost of specific services. Such a process requires a minimum of central level policy decisions accompanied by model systems of norms and procedures for managerial processes in planning, budgeting, programming of services and the provision of technical supplies, supervision, control and evaluation.

The administrative autonomy of each SILAIS is essential if specific services and interventions are to be tailored to the particular needs and special circumstances encountered in different parts of Nicaragua. A single vertical approach administered from MINSA in Managua cannot respond to local variations, especially in areas with severe medical and economic problems, such as those involving large numbers of decommissioned soldiers, recently returned refugees and their families with young children.

In such a system, the central level of MINSA should maintain a certain amount of control and supervision in the application of its policies and the formulation and execution of SILAIS plans and programs. This will avoid excessive independence of some SILAIS or their deviation from the national health strategy as approved in the Master Health Plan. The level of management control to be retained at the central level, and the level of autonomy to be exercised by the individual SILAIS, must be agreed on in advance at both levels.

B. Required Management Actions

MINSA financial and operational procedures must be improved to facilitate greater efficiency of health services. To do this, conceptual models and methodologies to improve management must be developed and implemented at all levels - central, SILAIS and health units.

To improve the financial system, the project must develop budget formulation, execution and control systems. Technical assistance is needed to assess needs and to design or redesign financial

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systems or subsystems, such as program-based budgeting, accounting, cash management, cost accounting and management information. The cost accounting information systems in those hospitals and SILAIS supported by PAHO and USAID will need additional support for further development of routine financial control systems, personnel data and pharmaceutical information systems.

The establishment of goals for the production of health services, with their corresponding costs as fundamental factors for the budgeting and programming of activities or services should be a first step in the application of this methodology. This methodology should be revised and modified by MINSA with support and technical assistance from DHS. SILAIS personnel and service units should be trained in its application and use.

It is important that DHS support the following activities:

- Technical assistance for modifying and making compatible the standard packages of PRRC and the methodology for recurrent costs developed by Olave and Zotele.

- Development of compatible personnel and logistical (abastecimiento) information systems.

- Design of basic training models for data collection, quality control and reporting.

- Sequences of training models for decision makers which train and reinforce them in the use of unit cost analysis and other approaches to using data for decision-making.

Given the financial difficulties of MINSA, the central level of MINSA should determine, together with the SILAIS, clear policies for the utilization of certain physical infrastructure (e.g., storage facilities) and laboratory services for hygiene and epidemiology which were previously organized according to regional criteria. These should now be distributed among the SILAIS or used in common by various SILAIS, given that in some cases it is not justifiable to establish these facilities in each individual SILAIS.

Improved management knowledge and skills go hand in hand with improved information systems. If they are to make rational, cost-effective choices, central, SILAIS, and primary care facilities need information systems which combine health service statistics, financial, personnel and supply information. Therefore, the implementation of computerized systems at the central and SILAIS levels will be critical to enabling MINSA to manage the resources at its disposal. These tools will give SILAIS management the ability not only to manage and control resources allocated from MINSA, but the self-sufficiency to

design and implement solutions unique to their particular requirements.[3]

Management training programs, using technical assistance and in-service training activities and appropriate local institutions, must upgrade the management skills of SILAIS personnel and lower level health facility directors and administrators. In the case of health delivery services, the project's emphasis is on assisting and training health staff to develop the basic administrative and technical systems in SILAIS which will permit better use of available resources and promote maximum community participation. The project will also place high priority on retraining all facility staff (especially at the periphery and in the community) in integrated health services and health education support, and on assuring the continued provision of basic supplies and equipment needed to carry out preventive activities.

Training supported by the project needs to be short but intensive, as many of the health facility staff need only retraining in the basic interventions and some instruction in techniques that may be new to them (e.g., those for prevention and treatment of acute respiratory infection). Self-instruction materials must be provided as recall manuals at all levels of the training. A precise assessment of skills and knowledge gaps as related to health care delivery needs at each level of the health system with which the project is working, and the design of appropriate curricula to address these gaps, will be vital to the project's success.

The improvement of MINSA's supervisory skills will be a key element in any effort to improve the quality of services and to strengthen management and efficiency. DHS-funded training should support management training in systematic and decentralized supervisory systems, with emphasis on providing on-the-job training and problem-solving, rather than the traditional "inspection" system.

As part of the effort to improve supervision, a monitoring and evaluation system oriented toward assuring the achievement of primary health program goals and suitable for use at SILAIS and local levels must be designed, tested and implemented. This strategy will result in many different supervisory instruments. Once systematic supervision of health posts has been initiated at the level of the municipal centers, the project should support the development of similar instruments by which SILAIS can monitor the performance of those centers. These instruments will be more complex, reflecting the greater range of services delivered at these facilities. Similarly, technical assistance should support central level efforts to develop criteria by which

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[3] See Annex M, "Management Information Technology".

to monitor the quality of care and operational efficiency of individual SILAIS.

With these issues adequately addressed, the project as designed herein will enable satisfactory and constructive attainment of project outputs and purposes.

VI. Absorptive Capacity

While MINSA has management and administrative deficiencies, it also has taken a clear and specific decision to change this situation. Moreover, at the central level as well as in the recently established SILAIS, there is a dynamic spirit and desire to bring about decentralization and to strengthen management.

These factors create a favorable climate for strengthening MINSA's absorptive capacity, which is low but can be raised substantially with the help of USAID and other donors. The extent of this increase will depend on effective coordination among donor agencies to avoid saturation and duplication of efforts. Assistance should be carefully planned and used to strengthen primarily those systems that MINSA considers to be priorities. Since USAID assistance is basically to be concentrated at the SILAIS level and is intended to develop highly practical and flexible management mechanisms and to coordinate the primary care interventions supported by the Project, DHS should fit smoothly with the World Bank's interventions in the areas of personnel administration and basic medicines. Likewise, there must also be cooperation with projects supported by the Swedish Government to be implemented with technical assistance provided by PAHO/WHO and UNICEF in Regions I and II. As discussed elsewhere in this Project Paper, the Comisión Nacional de SILAIS and MINSA's Office of External Cooperation will perform this coordinating function.

ANNEX E:

ECONOMIC CONSIDERATIONS

ANNEX E: ECONOMIC CONSIDERATIONS

I. Maternal Health and Child Survival Interventions

The paucity of reliable data on the real cost of, the demand for, and the effectiveness of the maternal health and child survival (MH/CS) interventions the Decentralized Health Services Project (DHS) will support make it extremely difficult, if not impossible, to gauge accurately the cost-effectiveness of those interventions. To correct this situation, the project includes substantial data gathering and monitoring activities that will, during its life, make it far easier to carry out such an analysis. Nonetheless, those being asked to authorize both the A.I.D. and GON contributions to DHS require at least some prior demonstration that the activities DHS will support are in fact cost effective as compared to other potential means of preventing or curing the health problems identified in the body of this Project Paper.

To provide this prior demonstration, this analysis will examine the conclusions reached during the recent design of a similar project in a neighboring Central American country. The El Salvador Family Health Services Project (FHS, 519-0363), which was authorized in June 1990, provides technical and financial assistance to the Salvadoran Demographic Association to continue and expand the delivery of birth spacing and maternal/child health services to high risk populations in rural and marginal urban areas and improve the quality and efficiency of those services.

During design of FHS, USAID/El Salvador conducted detailed analyses of the cost effectiveness of the various contraceptive, CDD, and nutrition interventions that the project might have supported. The Mission also tested the sensitivity of its conclusions to possible changes in the underlying assumptions. Obviously, the situations in the two countries are not so similar as to enable the impartial observer to conclude with certainty that, if similar tests were performed in Nicaragua, the same conclusions would result. There are, however, sufficient similarities between the economic circumstances of these two war-ravaged countries, and sufficient similarities between the health problems they face, to make the El Salvador experience of some analytical use in Nicaragua. At the very least, the methodologies used in design of the FHS Project provide a roadmap for the GON's Ministry of Health (MINSA) and the long-term technical assistance (TA) team to carry out similar analyses of DHS interventions once sufficient reliable data is available.

A. Cost-Effectiveness of Alternative Modern Methods of Contraception

The FHS design examined the planned contraceptive interventions by using a methodology set forth by P. Delp in 1977 in a work entitled "Cost Effectiveness Analysis", published in Systems Tools for Project Planning. The first step was to estimate the effectiveness of each method. In this methodology, "Effectiveness is defined as the product of the reliability of the intervention (in preventing births or dehydration during diarrheal episodes, for example) and its rate of acceptance among the population."[1]

The analysis concluded that the "effectiveness" of modern methods of contraception in El Salvador was "highest for female sterilization, followed by contraceptive pills, condoms, and the IUD. Vasectomy has the lowest effectiveness due to its low acceptance. Female sterilization is fully reliable and has a high rate of acceptance among women."[2] The results of this analysis are reproduced below:

Table E-1: Effectiveness Estimates for Modern Methods of Contraception, El Salvador

Method	Reliability	Acceptance	Effectiveness
Vasectomy	98	0.01	0.60
Condom	90	0.02	1.80
Pill	95	0.08	7.60
IUD	90	0.02	1.80
Sterilization	98	0.30	29.40

The analysis then examined the cost per couple year of protection (CYP) provided by each method. Cost was based on the medical/clinical budget and 60% of the rural health delivery budget allocated according to 1988 use rates, plus the LOP cost of each type of contraception, divided by the number of units of each type. Table E-2 on the following page summarizes the results.

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[1] USAID/El Salvador. "Family Health Services Project Paper (519-0363)," June 1990, Annex F.2, "Economic Analysis, p. 1.

[2] Ibid, p. 1.

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Table E-2: **Cost Analysis of Modern Methods of Contraception, El Salvador (in US$)**

Method	CYP	Cost/Unit	Cost/Year
Vasectomy	14.00	68.061	4.86
Condom (unit)	0.01	0.059	5.90
Pill (cycle)	0.08	0.289	3.76
IUD (unit)	2.50	2.500	1.00
Sterilization	14.00	70.718	5.05

The analysis then estimates the **cost-effectiveness** of each intervention by calculating the ratio between the effectiveness of each method (from Table E-1) and its cost per year of protection (from Table E-2). The higher the ratio, the more cost-effective is the intervention:

Table E-3: **Cost-Effectiveness Ratios for Modern Methods of Contraception in El Salvador (US$)**

Method	Cost/Year	Effectiveness	Ratio
Vasectomy	4.86	0.60	0.12
Condom	5.90	1.80	0.31
Pill	3.76	7.60	2.02
IUD	1.00	1.80	1.80
Sterilization	5.05	29.40	5.82

The analysis concludes that female sterilization, because of its high acceptance rate in El Salvador, is the most cost-effective intervention. It notes, however, that "sterilizations alone are unable to significantly reduce the dependency ratio or fertility rate...because couples seek sterilization at older ages when they have already completed their families."[3] This point is of particular relevance to DHS, which seeks to promote contraception not as a means of controlling population growth, but rather to promote birth spacing, and thus improve maternal and child health. Though DHS will provide equipment and training in support of both vasectomies and female contraception, its principal efforts in family planning will be focused on birth spacing; i.e., on temporary methods.

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[3] Ibid., p. 3.

Among these methods, the above data suggest that the project's focus on oral contraceptives rather than IUDs is appropriate, as the former are more cost-effective than the latter. Further, though the cost-effectiveness of condoms was found to be low in El Salvador because of their low acceptance rate in 1988, the analysis notes that "As a result of...SDA efforts, the use of condoms has increased dramatically over the last three years." If similar efforts by Profamilia and MINSA provoke the same response in Nicaragua, the cost-effectiveness of condoms will increase.

The FHS PP then applies the same methodology to the other interventions planned under that project, two of which -- control of diarrheal disease and nutrition interventions -- are similar to those planned under DHS. Following are the results of those analyses.

2. Control of Diarrheal Disease

Table E-4: Effectiveness Estimates for Diarrheal Disease Interventions, El Salvador

Method	Reliability	Acceptance	Effectiveness
ORS	65	.10	6.5
Home Electr. Solution	65	.02	1.3
Hospital Rehydration	95	.003	0.3

Table E-5: Cost Estimates for Diarrheal Disease Interventions, El Salvador (US$)

Method	Protection Per Episode	Cost/Unit	Cost Per Treatment
ORS	.33/packet	.27	0.82
Home Solution	.33/liter	.05	0.15
Hospital Rehydration	1.00/treatment	46.88	46.88

Table E-6: Cost-Effectiveness Ratios for Diarrheal Disease Interventions, El Salvador (US$)

Method	Cost/ Treatment	Effectiveness	Ratio
ORS	.82	6.5	7.9
Home Solution	.15	1.3	8.7
Hospital Rehydration	46.88	0.3	0.006

Clearly, in El Salvador, the two home treatment methods were shown to be both less costly, and more cost-effective, than the alternative of hospital rehydration. This suggest that DHS, which will promote both these methods as a means of avoiding the need to resort to hospital rehydration, has chosen correctly.

3. Nutrition Interventions

Table E-7: Effectiveness Estimates for Nutrition Interventions, El Salvador

Method	Reliability	Acceptance	Effectiveness
Prenatal Vitamins	95	.80	76
Multivitamins	25	.80	20
Vitamin A	95	.80	76
Home Gardens	15	.80	12

Table E-8: Cost Estimates for Nutrition Interventions, El Salvador (US$)

Method	Protection/Yr.	Cost/Unit	Cost/Year
Prenatal Vitamins	.004/pill	.06	15.00
Multivitamins	.003/pill	.02	6.70
Vitamin A	.5/capsule	.67	1.30
Home Gardens	.05/seed pk.	.36	7.20

Table E-9: **Cost-Effectiveness Ratios for Nutrition Interventions, El Salvador (US$)**

Method	Cost/Episode	Effectiveness	Ratio
Prenatal Vitamins	15.0	76	5.1
Multivitamins	6.7	20	3.0
Vitamin A	1.3	76	58.5
Home Gardens	7.2	12	1.7

Again, the estimates from El Salvador suggest that the DHS Project has chosen correctly: prenatal vitamins and Vitamin A, which DHS will provide, are more cost-effective (particularly so in the case of Vitamin A) than the alternatives of multivitamin use or the encouragement of home gardens.

II. Management and Financial Decentralization/Alternate Sources of Finance (MFD/ASF)

The data presented in Section III.B.4 of this Project Paper describe in some detail the financial costs to Nicaragua of its present system of health care provision. As that section points out, MINSA currently consumes 16.29% (C$ 421.8 million, or approximately US$ 78.8 million) of the GON's annual budget, while some 88% of its expenditures can be described as recurrent.[4] This level of expenditure is not an aberration; indeed, as Table E-10 on the following page shows, per capita expenditures on health grew almost every year under the Sandinista government until 1987. Current levels of expenditure actual represent a sharp decrease from those attained in the mid-1980s, when absolute and per capita public expenditures in health reached levels comparable to those of the most advanced economies in Latin America.

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[4] República de Nicaragua, Ministerio de Finanzas. "Presupuesto General de la República, 1992", pp. 25 and 101.

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TABLE E-10:

GDP PER CAPITA AND PUBLIC EXPENDITURE IN HEALTH 1970 TO 1991

YEAR	GDP PER CAPITA US$/1988	HEALTH EXPEND. AS A % OF GDP	HEALTH EXPEND. IN US$ MILLION 1988	PUBLIC PER CAPITA US$/1988
1970	1945	0.53%	14.50	7.92
1975	1634	1.16	40.75	18.95
1978	1581	0.70	26.67	11.07
1979	1130	1.89	56.38	21.36
1980	1147	3.20	100.20	36.70
1981	1171	5.00	167.45	58.55
1982	1124	5.20	173.01	58.45
1983	1137	4.90	170.48	55.71
1984	1082	4.80	164.12	51.94
1985	1003	6.00	196.79	60.18
1986	921	7.10	221.02	65.39
1987	919	4.80	137.59	39.31
1988	745	7.80	210.36	58.11
1989	700	5.00	131.08	35.00
1990	651	2.78	70.40	18.21
1991	661	2.72	67.50	16.90

SOURCE: Republica de Nicaragua/Ministerio de Salud: "SALUD: Metas, Estrategias y Prioridades de Recursos Externos"

Though it is easy to state the magnitude of the problem, it is much more difficult to place an economic value on the benefits that will accrue from the interventions that the MFD and ASF components of DHS will support. This is because it is not possible to calculate empirically the cost savings that will result from these interventions.

It is possible, however, to conclude intuitively that because DHS will help MINSA explore and test methods of cost containment and cost recovery, it will thereby improve (once these methods are fully implemented) MINSA's prospects for self reliance. Project-funded technical assistance will work with MINSA to:

- Develop less expensive ways of providing excessively costly services and interventions, and put these alternatives into practice;

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- Help MINSA develop and put into place a new fee-for-service schedule;
- Conduct studies to identify new sources of income; and
- Carry out seminars to build consensus within MINSA in support of these policy measures.

The cost **containment** methods DHS will promote may include increased use of generic drugs, the introduction of improved storage systems, increasing the role of non-physicians in the primary health care system, providing employee benefits in cash rather than in-kind, and privatizing support services (e.g. laundry and food). The cost **recovery** methods the project will promote may include special taxes on liquor and cigarettes, the introduction of a sliding fee scale based in part on ability to pay, and allowing MINSA or its SILAIS to retain and manage revenues collected locally. These measures will, if implemented, result in significant cost savings. A reduction of just 7% in MINSA's present recurrent cost burden would result in savings of approximately $5.0 million per year, or $25 million over the life of DHS -- more than the total amount of the planned A.I.D. investment.

ANNEX F: COST ESTIMATE AND FINANCIAL ANALYSIS

ANNEX F: COST ESTIMATE AND FINANCIAL ANALYSIS

A. The A.I.D. Contribution

The total life-of-project A.I.D. contribution to DHS is estimated at $22 million. This will include an initial obligation of $7,220,638 in FY 1993 funds composed of $4,000,000 in Development Assistance Funds (DAF) earmarked for child survival; $1,720,638 from the Child Survival account; $1,000,000 from the Health account; and $500,000 from the Population account. Additionally, USAID will transfer another $700,000 in FY 1993 Population funds back to AID/Washington for the purchase of contraceptives. USAID expects that subsequent incremental obligations totalling $14,079,362 will be made from the appropriate Development Assistance accounts in FYs 1994-96. A detailed budget of how this A.I.D. contribution will be used is provided in Table F-1 on the following pages of this Annex.

1. A.I.D. Contribution by Project Input

As summarized in Table F-2, the A.I.D. contribution will finance technical assistance (31.7%), commodities (21.5%), training (14.0%), and immunizations (15.9%). Funds are also reserved under separate line items for evaluation (0.8%) and audit (0.2%). An additional 4.0% of the budget is reserved for contingencies and inflation. Contraceptive procurements funded via OYB transfers will account for an additional $2.6 million, or 11.8% of the A.I.D. contribution.

2. A.I.D. Contribution by Project Component

Table F-3 summarizes the A.I.D. contribution by Fiscal Year and project component.

3. Division of Project Inputs by Component

Table F-4 combines the above analyses by showing how the various types of inputs will be divided among project components over the life of DHS.

4. Cost Assumptions

The unit cost estimates which underlie the budget figures included throughout this Project Paper are presented in Table F-1. These unit cost estimates themselves rest on several important assumptions. These include:

- Base salaries for short-term international (i.e., non-Nicaraguan) consultants are budgeted at $7,200 per month, or approximately $300 per working day (assuming a six-day work week for such consultants). This estimate is consistent with USAID's experience. It may, however, be possible to

obtain many of these consultants at a lower base salary (and thus to provide more person-days of technical assistance without exceeding the established budget parameters.

- The base salaries for local consultants are budgeted at $2,000 per month. Again, this is consistent with USAID's experience.

- The budget's estimate of the cost of allowances for long-term international personnel is consistent with figures provided by USAID's Executive Office.

- The estimated rates for fringe benefits, overhead, and fees for the planned technical assistance contracts, and the bases to which those rates will be applied were provided by USAID's Contracts Office based on a sampling of the mission's existing technical assistance contracts with U.S. firms.

- The estimated cost of a subcontract with a local advertising firm is $15,000 per month. This is based on the costs of similar contracts for radio and television advertising campaigns elsewhere in Latin America. (The IEC campaign to be supported by DHS, however, will include only radio advertising. No television advertising will be used.)

- The A.I.D. contribution to training costs will be equivalent (in local currency) to $20 per day per trainee. This figure is consistent with budget estimates presented in the 1991 Project Paper for USAID's Development Training Project.

- A contingency factor of approximately 2% beginning in the first Project Year, and an inflation factor of 2% beginning in the second Project Year and compounded annually thereafter, have been applied to all costs except those for the planned buy-ins to the regional Expanded Program of Immunizations and to those for contraceptives. The A.I.D. contribution to these activities is assumed to be fixed.

5. U.S. vs. Local Currency Requirements

As summarized in Table F-5 on the following two pages, approximately $16 million (72.7%) of the A.I.D. contribution will be provided in dollars[1], while some $5.12 million (23.3%) will need to be converted into Cordobas Oro for local purchases. The balance of the A.I.D. contribution (4%) is reserved for contingencies and inflation. It is not yet possible to determine whether these funds will be needed in U.S. or local currency.

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[1] Including $2.6 million for contraceptives.

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TABLE F-1: DETAILED BUDGET ESTIMATE, A.I.D. EXPENDITURES (BY PROJECT YEAR)

Description:	Unit Price	Unit	Year One	Year Two	Year Three	Year Four	Year Five	LOP Total	As % of Total:
I. TECHNICAL ASSISTANCE, ASC									
A. Gray Amendment Firm									
- International Consultants	7,200	Mo	79,200	0	0	0	0	79,200	
- Local Consultants	2,000	Mo	30,000	0	0	0	0	30,000	
- Fringe Benefits	20%		15,840	0	0	0	0	15,840	
- Overhead	35%		38,220	0	0	0	0	38,220	
- Direct Expenses (Travel, Per Diem)			84,984	0	0	0	0	84,984	
- G&A	14%		34,754	0	0	0	0	34,754	
- Fee	7%		19,810	0	0	0	0	19,810	
Sub-Total, Gray Amendment Firm			302,809	0	0	0	0	302,809	
B. U.S. Public Health Service									
- International Assistance	20,000	Mo	100,000	0	0	0	0	100,000	
- Local Assistance	3,000	Mo	15,000	0	0	0	0	15,000	
Sub-Total, U.S. Public Health Service	20,000	Mo	115,000	0	0	0	0	115,000	
TOTAL, ASC TECHNICAL ASSISTANCE:			417,809	0	0	0	0	417,809	1.90%
II. LONG-TERM TECHNICAL ASSISTANCE									
A. International Staff Salaries									
- Chief of Party/ASF Expert	65,000	Yr	16,250	65,000	65,000	65,000	65,000	276,250	
- MH/CS Specialist	60,000	Yr	15,000	60,000	60,000	60,000	60,000	255,000	
- Training/Outreach Specialist	50,000	Yr	12,500	50,000	50,000	12,500	0	125,000	
- Mgt./Financial Specialist	50,000	Yr	12,500	50,000	50,000	50,000	50,000	212,500	
- Systems Analyst/Manager	50,000	Yr	12,500	50,000	50,000	50,000	50,000	212,500	
Sub-Total, Int'l. Staff Salaries			68,750	275,000	275,000	237,500	225,000	1,081,250	4.91%
B. Nicaraguan Staff Salaries									
- SILAIS Adm. Assts. (5)	24,000	Yr	30,000	120,000	120,000	120,000	120,000	510,000	
- Systems Analyst/Programmer	24,000	Yr	6,000	24,000	24,000	24,000	24,000	102,000	
- Health Trainer	24,000	Yr	0	0	0	18,000	24,000	42,000	
- Logistics Coordinator	18,000	Yr	4,500	18,000	18,000	18,000	18,000	76,500	
- Administrative Assistant	15,000	Yr	3,750	15,000	15,000	15,000	15,000	63,750	
- Drivers (2)	12,000	Yr	6,000	24,000	24,000	24,000	24,000	102,000	
- Secretaries (3)	11,000	Yr	8,250	33,000	33,000	33,000	33,000	140,250	
Sub-Total, Nicaraguan Staff Salaries			58,500	234,000	234,000	252,000	258,000	1,036,500	4.71%
C. Allowances for Int'l. Staff									
- Post Differential	20%	Yr	13,750	55,000	55,000	47,500	45,000	216,250	
- Post Allowance	5%	Yr	3,438	13,750	13,750	13,750	13,750	58,438	
- Housing and Utilities	2,400	Mo	36,000	144,000	144,000	122,400	115,200	561,600	
- Furniture and Appliances	20,000	ea	100,000	0	0	0	0	100,000	
- Travel to Post	3,000	ea	15,000	0	0	0	0	15,000	
- R&R	1,600	ea	0	8,000	8,000	6,400	0	22,400	
- Home Leave	3,000	ea	0	0	12,000	0	0	12,000	
- Repatriation	3,000	ea	0	0	0	3,000	12,000	15,000	
- HHE	7,500	ea	37,500	0	0	7,500	30,000	75,000	
- POV	2,000	ea	10,000	0	0	2,000	8,000	20,000	
- Consumables	2,000	ea	10,000	0	0	0	0	10,000	
- Education Allowance	4,000	PY	5,000	20,000	20,000	17,000	16,000	78,000	
Sub-Total, Allowances for Int'l. Staff:			230,688	240,750	252,750	219,550	239,950	1,183,688	5.38%

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TABLE F-1 (CONT.): DETAILED BUDGET ESTIMATE, A.I.D. EXPENDITURES (BY PROJECT YEAR)

Description:	Unit Price	Unit	Year One	Year Two	Year Three	Year Four	Year Five	LOP Total	As % of Total:
D. Short-Term Consultancies									
- For MH/CS Component	7,500	Mo	7,500	30,000	22,500	22,500	7,500	90,000	
- For MFD Component	7,500	Mo	7,500	30,000	22,500	22,500	7,500	90,000	
- For ASF Component	7,500	Mo	15,000	30,000	22,500	22,500	0	90,000	
Sub-Total, Consultant Salaries			30,000	90,000	67,500	67,500	15,000	270,000	
Consultant Travel	1,200	RT	4,800	14,400	10,800	10,800	2,400	43,200	
Total Consultant Costs			34,800	104,400	78,300	78,300	17,400	313,200	1.42%
E. Program Coordination and Support									
- Local Travel and Expenses	6,000	Yr	1,500	6,000	6,000	6,000	6,000	25,500	
- Annual Conferences	2,000	ea	0	2,000	2,000	2,000	2,000	8,000	
- Donor Conferences	1,000	ea	0	1,000	1,000	1,000	1,000	4,000	
Sub-Total, Program Coordination/Support			1,500	9,000	9,000	9,000	9,000	37,500	0.17%
F. Contract with Advertising Firm	15,000	mo	0	135,000	180,000	180,000	0	495,000	2.25%
G. Overhead and Fees									
- Fringe Benefits (Note 1)	20%		19,750	73,000	68,500	61,000	48,000	270,250	
- Overhead (Note 2)	35%		55,038	209,650	201,775	194,950	174,300	835,713	
- DBA Insurance	4%		3,950	14,600	13,700	12,200	9,600	54,050	
- G&A (Note 3)	14%		66,217	181,356	183,824	174,230	137,375	743,001	
- Fee (Note 4)	7%		37,467	102,351	103,820	98,457	77,632	419,727	
Sub-Total, Overhead and Fees			182,421	580,957	571,619	540,837	446,907	2,322,741	10.56%
SUB-TOTAL, LONG-TERM TA CONTRACT			576,658	1,579,107	1,600,669	1,517,187	1,196,257	6,469,878	29.41%
TECHNICAL ASSISTANCE FROM USPHS	20,000	mo	0	20,000	20,000	20,000	20,000	80,000	0.36%
TOTAL, LONG-TERM TECH. ASSISTANCE			576,658	1,599,107	1,620,669	1,537,187	1,216,257	6,549,878	29.77%
III. COMMODITIES (NOTE 5)									
A. For AS/MH/CS Components:									
- 4x4 Vehicles	20,000		100,000	0	0	0	0	100,000	
- ORS Packets	50,000	con	100,000	100,000	100,000	100,000	100,000	500,000	
- Prenatal Vitamins	2.00	bot	346,000	346,000	346,000	346,000	346,000	1,730,000	
- Vitamin A Capsules	0.02	cap	4,000	4,000	4,000	4,000	4,000	20,000	
- Growth Monitoring Equipment	2.00	CHW	20,000	0	0	0	0	20,000	
- Ampicillin	1.00	cap	75,000	75,000	75,000	75,000	75,000	375,000	
- Child Scales	20.00	ea	4,000	0	0	0	0	4,000	
- Adult Scales	200.00	ea	4,000	0	0	0	0	4,000	
- Stethoscopes	50.00	ea	12,500	0	0	0	0	12,500	
- Blood Pressure Cuffs	50.00	ea	12,500	0	0	0	0	12,500	
- Ob/Gyn Instruments	200	set	50,000	0	0	0	0	50,000	
- Exam Furniture	1,200	set	300,000	0	0	0	0	300,000	
- Disposable Supplies	500	hc	125,000	125,000	125,000	125,000	125,000	625,000	
- Educational Materials	50	set	12,500	12,500	12,500	12,500	12,500	62,500	
- Lab Equipment/Supplies	800	set	200,000	0	0	0	0	200,000	
- Office Equipment/Furniture	250	set	62,500	0	0	0	0	62,500	
Sub-Total, AS/MH/CS Commodities:			1,428,000	662,500	662,500	662,500	662,500	4,078,000	18.54%

TABLE F-1 (CONT.): DETAILED BUDGET ESTIMATE, A.I.D. EXPENDITURES (BY PROJECT YEAR)

Description:	Unit Price	Unit	Year One	Year Two	Year Three	Year Four	Year Five	LOP Total	As % of Total:
III. COMMODITIES (CONT.)									
B. For MFD Component:									
- 486/33 Mhz Microcomputers	3,000	ea	0	123,000	126,000	126,000	0	375,000	
- Laser Printers	1,200	ea	0	7,200	8,400	8,400	0	24,000	
- Matrix Printer	700	ea	0	4,200	4,900	4,900	0	14,000	
- Modems	500	ea	0	3,000	3,500	3,500	0	10,000	
- UPS	1,000	ea	0	6,000	7,000	7,000	0	20,000	
- Netware	2,000	ea	0	12,000	14,000	14,000	0	40,000	
- Clipper	500	ea	0	3,000	3,500	3,500	0	10,000	
- FoxBase	500	ea	0	3,000	3,500	3,500	0	10,000	
- WP LAN	500	ea	0	3,000	3,500	3,500	0	10,000	
- WP Nodes	300	ea	0	10,500	10,500	10,500	0	31,500	
- Lotus LAN	500	ea	0	3,000	3,500	3,500	0	10,000	
- Lotus Nodes	300	ea	0	10,500	10,500	10,500	0	31,500	
- Comm Soft	300	ea	0	1,800	2,100	2,100	0	6,000	
- DT Publish	400	ea	0	2,400	2,800	2,800	0	8,000	
- Statistics	500	ea	0	3,000	3,500	3,500	0	10,000	
- Graphics	400	ea	0	2,400	2,800	2,800	0	8,000	
- Utilities	100	ea	0	600	700	700	0	2,000	
- Anti-Virus	100	ea	0	600	700	700	0	2,000	
Sub-Total, MFD Commodities:			0	199,200	211,400	211,400	0	622,000	2.83%
C. For Long-Term TA Team:									
- 486/33 Mhz Microcomputers	3,000	ea	9,000	0	0	0	0	9,000	
- Laser Printer	1,200	ea	1,200	0	0	0	0	1,200	
- Matrix Printer	700	ea	700	0	0	0	0	700	
- Modems	500	ea	1,500	0	0	0	0	1,500	
- UPS	1,000	ea	3,000	0	0	0	0	3,000	
- FoxBase	500	ea	1,500	0	0	0	0	1,500	
- WP 5.1 for Windows	500	ea	1,500	0	0	0	0	1,500	
- Lotus 1-2-3 for Windows	500	ea	1,500	0	0	0	0	1,500	
- Comm Soft	300	ea	900	0	0	0	0	900	
- DT Publish	400	ea	1,200	0	0	0	0	1,200	
- Statistics	500	ea	1,500	0	0	0	0	1,500	
- Graphics	400	ea	1,200	0	0	0	0	1,200	
- Utilities	100	ea	300	0	0	0	0	300	
- Anti-Virus	100	ea	300	0	0	0	0	300	
- Office Furniture	2,000	set	2,000	0	0	0	0	2,000	
- Photocopier	4,000	ea	4,000	0	0	0	0	4,000	
- Fax Machine	1,000	ea	1,000	0	0	0	0	1,000	
- Audio-Visual Equipment	5,000	set	5,000	0	0	0	0	5,000	
Sub-Total, Commodities for LTTA:			37,300	0	0	0	0	37,300	0.17%
TOTAL, COMMODITIES			1,465,300	861,700	873,900	873,900	662,500	4,737,300	21.53%

TABLE F-1 (CONT.): DETAILED BUDGET ESTIMATE, A.I.D. EXPENDITURES (BY PROJECT YEAR)

Description:	Unit Price	Unit	Year One	Year Two	Year Three	Year Four	Year Five	LOP Total	As % of Total:
IV. TRAINING (NOTE 6)									
A. For MH/CS Component									
- MH/CS Orientation (50 x 2 days ea)	20	day	2,000	0	0	0	0	2,000	
- MH/CS TOT (50 x 12 days each)	20	day	0	12,000	0	0	0	12,000	
- Health Intervention (5,000 x 12 days)	20	day	0	360,000	480,000	360,000	0	1,200,000	
- HIT Cont. Ed. (500x12 + 4500x2)	20	day	0	0	0	150,000	150,000	300,000	
- CHW training (9000 x 3 days each)	20	day	0	180,000	360,000	0	0	540,000	
- Counselling Training (2400x5 days)	20	day	0	80,000	160,000	0	0	240,000	
- Refresher Trg. for CHWs (9000 x 1 day)	20	day	0	0	0	90,000	90,000	180,000	
- HPT Cont. Ed. (2200*1 + 200x3)	20	day	0	0	0	28,000	28,000	56,000	
- ST U.S./3rd Country Training	2,500	wk	0	37,500	112,500	75,000	0	225,000	
Sub-Total, MH/CS Training			2,000	669,500	1,112,500	703,000	268,000	2,755,000	12.52%
B. For MFD Component:									
- MFD Orientation (200 x 2 days ea.)	20	day	0	8,000	0	0	0	8,000	
- MFD TOT (12 x 9 days each)	20	day	0	2,160	0	0	0	2,160	
- GEMS Training (500 x 9 days each)	20	day	0	45,000	45,000	0	0	90,000	
- Computer Skills (250x15 days ea.)	20	day	0	25,000	50,000	0	0	75,000	
- FMS Training (250 x 10 days each)	20	day	0	2,400	2,400	22,600	22,600	50,000	
- Specialized MIS Trg. (80x30 days)	20	day	0	0	24,000	24,000		48,000	
- MIS User Training	20	day	0	0	0	8,000	8,000	16,000	
- Transport/Logistics (200x 0 days)	20	day	0	0	40,000	0	0	40,000	
Sub-Total, MFD Training:			0	82,560	161,400	54,600	30,600	329,160	1.50%
TOTAL, TRAINING:			2,000	752,060	1,273,900	757,600	298,600	3,084,160	14.02%
V. EVALUATION AND AUDIT									
A. Evaluation	90,000	ea	0	0	90,000	0	90,000	180,000	
B. Non-Federal Audit	10,000	Yr	10,000	10,000	10,000	10,000	10,000	50,000	
TOTAL, EVALUATION AND AUDIT:			10,000	10,000	100,000	10,000	100,000	230,000	1.05%
TOTAL BASE COSTS (NOTE 7):			2,471,767	3,222,867	3,868,469	3,178,687	2,277,357	15,019,147	68.27%
Contingencies (app. 2% of Base)			14,694	64,457	77,369	63,574	45,547	265,642	1.21%
Inflation (2% beginning PY Two)			0	65,746	159,412	198,452	191,482	615,093	2.80%
SUB-TOTAL:			2,486,461	3,353,071	4,105,250	3,440,713	2,514,386	15,899,881	72.27%
VI. Contraceptives (Note 7):			235,518	456,775	549,479	628,864	729,483	2,600,119	11.82%
VII. Immunization (Note 7):			1,000,000	850,000	700,000	550,000	400,000	3,500,000	15.91%
GRAND TOTAL, ALL COSTS			3,721,979	4,659,846	5,354,729	4,619,577	3,643,869	22,000,000	100.00%

BUDGET NOTES:

(1) Fringe Benefits are expected to be 20% of the base salaries of both long- and short-term international personnel

(2) Overhead is expected to be 35% of the base salaries of all TA personnel.

(3) G&A costs are estimated at 14% of all costs other than the contractor's fee for long-term TA

(4) The contractor's fee is estimated at 7% of all costs for long-term TA.

(5) Commodities will be procured by the U.S. Public Health Service. Commodity price estimates include a fee for the USPHS.

(6) Training costs of $20/day/participant include food & materials for all participants plus transport & lodging for those who will be trained far from their homes.

(7) Expenditures for immunization and contraceptives are assumed to be fixed, and are not subject to contingency and inflation factors.

TABLE F-2: A.I.D. EXPENDITURES BY TYPE OF INPUT AND PROJECT YEAR

TYPE OF INPUT:	Year One	Year Two	Year Three	Year Four	Year Five	LOP Total	As % of Total:
I. Technical Assistance:	994,467	1,599,107	1,620,669	1,537,187	1,216,257	6,967,687	31.67%
II. Commodities:	1,465,300	861,700	873,900	873,900	662,500	4,737,300	21.53%
III. Training:	2,000	762,060	1,273,900	767,600	298,600	3,084,160	14.02%
IV. Evaluation	0	0	90,000	0	90,000	180,000	0.82%
V. Audit	10,000	10,000	10,000	10,000	10,000	50,000	0.23%
TOTAL BASE COSTS (NOTE 7):	2,471,767	3,222,867	3,868,469	3,178,687	2,277,357	15,019,147	68.27%
Contingencies (app. 2% of Base)	14,694	64,457	77,369	63,574	45,547	265,642	1.21%
Inflation (2% beginning PY Two)	0	65,746	159,412	198,452	191,482	615,093	2.80%
SUB-TOTAL:	2,486,461	3,353,071	4,105,250	3,440,713	2,514,386	15,899,881	72.27%
VI. Contraceptives (Note 7):	235,518	456,775	549,479	628,864	729,483	2,600,119	11.82%
VII. Immunization (Note 7)	1,000,000	850,000	700,000	550,000	400,000	3,500,000	15.91%
GRAND TOTAL, ALL COSTS	3,721,979	4,659,846	5,354,729	4,619,577	3,643,869	22,000,000	100.00%

TABLE F-3: A.I.D. EXPENDITURES BY PROJECT COMPONENT AND YEAR

PROJECT COMPONENT:	Year One	Year Two	Year Three	Year Four	Year Five	LOP Total	As % of Total:
I. Accelerated Start	1,883,109	0	0	0	0	1,883,109	8.56%
II. Maternal Health/Child Survival	178,533	1,943,312	2,423,411	1,993,966	1,338,857	7,878,078	35.81%
III. Management/Financial Decentralization	279,654	984,413	1,068,084	910,544	614,328	3,857,024	17.53%
IV. Alternate Sources of Finance	120,472	285,141	276,974	264,177	224,171	1,170,936	5.32%
V. Evaluation	0	0	90,000	0	90,000	180,000	0.82%
VI. Audit	10,000	10,000	10,000	10,000	10,000	50,000	0.23%
TOTAL BASE COSTS (NOTE 7):	2,471,767	3,222,867	3,868,469	3,178,687	2,277,357	15,019,147	68.27%
Contingencies (app. 2% of Base)	14,694	64,457	77,369	63,574	45,547	265,642	1.21%
Inflation (2% beginning PY Two)	0	65,746	159,412	198,452	191,482	615,093	2.80%
TOTAL, ALL COSTS	2,486,461	3,353,071	4,105,250	3,440,713	2,514,386	15,899,881	72.27%
VI. Contraceptives (Note 7):	235,518	456,775	549,479	628,864	729,483	2,600,119	11.82%
VII. Immunization (Note 7)	1,000,000	850,000	700,000	550,000	400,000	3,500,000	15.91%
GRAND TOTAL, ALL COSTS	3,721,979	4,659,846	5,354,729	4,619,577	3,643,869	22,000,000	100.00%

TABLE F-4: ALLOCATION OF PLANNED A.I.D. INPUTS BY PROJECT COMPONENT

Project Element	Technical Assistance	Commodities	Training	Other Costs	Sub-Total
Accelerated Start	417,809	1,465,300	0	0	1,883,109
MH/CS	2,473,078	5,250,119	2,755,000	0	10,478,197
MFD	2,905,864	622,000	329,160	0	3,857,024
ASF	1,170,936	0	0	0	1,170,936
Sub-Total	6,967,687	7,337,419	3,084,160	0	17,389,266
Immunization				3,500,000	
Evaluation				180,000	
Audit				50,000	
Contingency/Inflation				880,734	
TOTAL, ALL COSTS:	6,967,687	7,337,419	3,084,160	4,610,734	22,000,000

TABLE F-5: A.I.D. EXPENDITURES BY CURRENCY REQUIREMENT (U.S. $ OR EQUIV.)

DESCRIPTION:	FOREIGN EXCHANGE	LOCAL CURRENCY	TOTAL
I. TECHNICAL ASSISTANCE, ASC COMPONENT			
A. Gray Amendment Firm	262,509	40,300	302,809
B. U.S. Public Health Service	100,000	15,000	115,000
TOTAL, ASC TECHNICAL ASSISTANCE:	362,509	55,300	417,809
II. LONG-TERM TECHNICAL ASSISTANCE			
A. International Staff Salaries	1,081,250		1,081,250
B. Nicaraguan Staff Salaries		1,036,500	1,036,500
C. Allowances for Int'l. Staff	1,183,688		1,183,688
D. Short-Term Consultancies	313,200		313,200
E. Program Coordination and Support		37,500	37,500
F. Overhead and Fees	2,322,741		2,322,741
G. Contract with Advertising Firm	49,500	445,500	495,000
H. U.S. Public Health Service	80,000		80,000
TOTAL, LONG-TERM TECHNICAL ASSISTANCE:	5,030,378	1,519,500	6,549,878
III. COMMODITIES:			
A. For AS/MH/CS Components:			
- 4x4 Vehicles	100,000		100,000
- ORS Packets	500,000		500,000
- Prenatal Vitamins	1,730,000		1,730,000
- Vitamin A Capsules	20,000		20,000
- Growth Monitoring Equipment	20,000		20,000
- Ampicillin	375,000		375,000
- Child Scales	4,000		4,000
- Adult Scales	4,000		4,000
- Stethoscopes	12,500		12,500
- Blood Pressure Cuffs	12,500		12,500
- Ob/Gyn Instruments	50,000		50,000
- Exam Furniture	150,000	150,000	300,000
- Disposable Supplies	312,500	312,500	625,000
- Educational Materials	12,500	50,000	62,500
- Lab Equipment/Supplies	80,000	120,000	200,000
- Office Equipment/Furniture	12,500	50,000	62,500
Sub-Total, AS/MH/CS Commodities:	3,395,500	682,500	4,078,000

TABLE F-5 (CONT.): A.I.D. EXPENDITURES BY CURRENCY REQUIREMENT
(U.S. $ OR EQUIVALENT)

DESCRIPTION:	FOREIGN EXCHANGE	LOCAL CURRENCY	TOTAL
III. COMMODITIES (CONT.)			
B. For MFD Component:	622,000		622,000
C. For Long-Term TA Team:			
- Computer Hardware/Software	25,300		25,300
- Office Furniture		2,000	2,000
- Photocopier	4,000		4,000
- Fax Machine	1,000		1,000
- Audio-Visual Equipment	5,000		5,000
Sub-Total, Commodities for LTTA:	35,300	2,000	37,300
TOTAL, COMMODITIES	4,052,800	684,500	4,737,300
IV. TRAINING	225,000	2,859,160	3,084,160
V. EVALUATION	180,000		180,000
VI. AUDIT	50,000		50,000
TOTAL BASE COSTS:	9,900,687	5,118,460	15,019,147
VII. CONTRACEPTIVES	2,600,119		2,600,119
VIII. IMMUNIZATION:	3,500,000		3,500,000
Contingencies (app. 3% of Base from FY 93)			265,642
Inflation (2.5% beginning FY 1994)			615,093
TOTAL, ALL COSTS:	16,000,806	5,118,460	22,000,000

B. GOVERNMENT OF NICARAGUA CONTRIBUTION

The Government of Nicaragua will make local currency and in-kind contributions equivalent to at least U.S. $7.4 million, or 25.17% of total project costs. As shown in Table F-6, these contributions will include the provision of facilities, either rented or of its own, to be used as offices for project personnel and storage for project provided goods; the full-time salaries of MINSA personnel designated to serve as counterparts to the project-funded long-term technical assistance team; and the salaries of its employees while those employees are participating in project-funded training. The GON contribution will also include a portion of the salaries of certain employees in the five focus SILAIS of the project during the time those employees are participating in project-related activities.[2]

Table F-6 details the entire GON contribution. Table F-7 breaks down this contribution by input category, while Table F-8 divides it among the various project components.

The costs for each category were estimated as follows:

1. Provision of Facilities

The estimated cost of facilities, either rented or provided by the Ministry of Health, was calculated on the basis of the rental costs for:

- An office at the MINSA central building or rented in the vicinity to house six people from the project and four local counterparts. It is estimated that an office with three separate working areas and a reception room will be adequate.

- Offices at each of the five SILAIS to house four people each.

- Storage facilities at the central building and at each of the five SILAIS. The storage area at the central level will have at least 500 square meters and the ones at the SILAIS 300 square meters each.

The unit cost per square meter of storage space (0.14$/m^3)was calculated on the basis of existing MINSA rental contracts. The office costs are based on current Managua rental market prices, $1200 for an office with the characteristics listed above, $600 for the offices at the Managua SILAIS. It was assumed that the

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[2] As shown in Tables F-6 through F-13, the actual GON contribution will be equivalent to $7,439,530. For presentational purposes, the body of this PP will discuss the GON contribution simply as $7.4 million.

costs in Jinotega and Matagalpa are 20% lower than in the capital.

The estimated value of these facilities over the life of the project is summarized in Section I.A of Table F-6.

2. Salaries of Counterpart Personnel

This PP assumes that the GON will designate one full-time MINSA staff member of appropriate rank to serve as counterparts to each of the members of the long-term technical advisors to be fielded by the institutional contractor and to each of the five SILAIS Administrative Assistants to be funded under that contract. As described in Section III.B.3 of this Project Paper, two counterparts each are to provided for the Systems Analyst/Manager and Systems Analyst Programmer. For the Chief of Party, MH/CS Specialist, and SILAIS Administrative Assistant positions, the rank of each counterpart is assumed to be at the Director level, with a salary equivalent to U.S.$ 283.11 per month.[3] For the remaining positions, the counterparts are expected to be at the Ejecutivo Administrativo level, with an average monthly salary equal to $124.75. These counterparts are to begin work in or around January 1994, and are to serve through the PACD of March 31, 1998. Upon the completion of DHS, they will be expected to assume the functions of the contractors to whom they serve as counterparts.

The value of this contribution is calculated in Section I.B of Table F-6.

3. Salaries for Administrative and Operational Support

To compute the cost of the MINSA personnel that will be directly involved in administrative and/or operational support to the different project activities, it was assumed that project-related functions will consume at least a given proportion of the time of the following categories of employees in the five focus SILAIS:

- Directors (15%)
- Sub-Directors (15%)
- Nurses (33%)
- Health Auxiliaries (33%)
- Statistical Technicians (20%
- Other Health Technicians (20%)
- Administrative Personnel (20%)
- Administrative Executives (20%)

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[3] For the purposes of this analysis, the salaries of GON employees are calculated using the official exchange rate of U.S. $1 = C$6.05 as of February 18, 1993.

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The reader will note that this is a conservative calculation of the contribution GON employees will make to DHS. Many of the employees in the above categories will contribute far more than the indicated percentage of their time, and many other employees (e.g., specialists and general practitioners as well as employees from outside the five focus SILAIS) will participate in some form in the project.

Table F-11 summarizes the value per month of each category of employee. In that Table, the average monthly salary of each category of employee is multiplied first by the number of employees in that category in the five focus SILAIS. That figure is then multiplied by the estimated percentage of their total time that these employees will devote to project-related activities to obtain the value of the total monthly contribution from each category to DHS. Section I.C of Table F-6 then calculates the total LOP value of these contributions. It is assumed that GON employees will begin participating in the project in January 1994, and that their participation will continue through the PACD of December 31, 1997.

4. Salaries of Trainees

The LOP cost of the GON's contribution to the salaries of trainees was calculated by multiplying the estimated daily salary of each type of employee expected to participate in a given training course times the number of employees of that category expected in that course. This total was then divided by the total number of trainees expected, thus yielding an average salary cost per person per training day for each type of course. (See Table F-9 for a summary of these calculations.) This average cost per day was then multiplied by the total number of person-days to be trained in each course. This latter calculation is shown in Section II of Table F-6.

Table F-10 depicts the total population of potential project-funded trainees in each of the five focus SILAIS. Additional participants in training associated with the Management and Financial Decentralization component will come from other SILAIS.

C. TOTAL CONTRIBUTIONS TO THE PROJECT

The total value of planned contributions to DHS from both the GON and from USAID is summarized in Tables F-12 and F-13. The former divides these contributions by type of input, while the latter divides them by project component.

TABLE F-6: GOVERNMENT OF NICARAGUA CONTRIBUTION (U.S. $ EQUIVALENT)

Description:	Unit Price	Unit	Year One (1993)	Year Two (1994)	Year Three (1995)	Year Four (1996)	Year Five (1997)	LOP Total	As % of Total
I. TECHNICAL ASSISTANCE									
A. PROVISION OF FACILITIES									
- Office Space									
Central Office	1,200	Mo	8,400	14,400	14,400	14,400	14,400	66,000	
Managua Central	600	Mo	0	7,200	7,200	7,200	7,200	28,800	
Managua Oriental	600	Mo	0	7,200	7,200	7,200	7,200	28,800	
Managua Occidental	600	Mo	0	7,200	7,200	7,200	7,200	28,800	
Matagalpa	480	Mo	0	5,760	5,760	5,760	5,760	23,040	
Jinotega	480	Mo	0	5,760	5,760	5,760	5,760	23,040	
Sub-Total, Office Space			8,400	47,520	47,520	47,520	47,520	198,480	2.67%
- Storage									
Central Office	207	Mo	1,449	2,484	2,484	2,484	2,484	11,385	
Managua Central	207	Mo	0	2,484	2,484	2,484	2,484	9,936	
Managua Oriental	207	Mo	0	2,484	2,484	2,484	2,484	9,936	
Managua Occidental	207	Mo	0	2,484	2,484	2,484	2,484	9,936	
Matagalpa	165	Mo	0	1,980	1,980	1,980	1,980	7,920	
Jinotega	165	Mo	0	1,980	1,980	1,980	1,980	7,920	
Sub-Total, Storage			1,449	13,896	13,896	13,896	13,896	57,033	0.77%
SUB-TOTAL, PROVISION OF FACILITIES			9,849	61,416	61,416	61,416	61,416	255,513	3.43%
B. SALARIES OF COUNTERPARTS									
- To Chief of Party	283.11	Mo	849	3,397	3,397	3,397	3,397	14,439	
- To MH/CS Specialist	283.11	Mo	849	3,397	3,397	3,397	3,397	14,439	
- To Training/Outreach Specialist	124.75	Mo	374	1,497	1,497	1,497	1,497	6,362	
- To Mgt./Financial Specialist	124.75	Mo	374	1,497	1,497	1,497	1,497	6,362	
- To Systems Analyst/Manager (2)	124.75	Mo	749	2,994	2,994	2,994	2,994	12,725	
- To Systems Analyst/Programmer (2)	124.75	Mo	749	2,994	2,994	2,994	2,994	12,725	
- To SILAIS Adm. Asst (5)	283.11	Mo	4,247	16,987	16,987	16,987	16,987	72,193	
SUB-TOTAL, COUNTERPART SALARIES			8,191	32,763	32,763	32,763	32,763	139,244	1.87%
C. OPERATIONAL SUPPORT									
Medicos Directores	2,548	Mo	0	30,576	30,576	30,576	30,576	122,303	
Sub-Directores Medicos	1,402	Mo	0	16,826	16,826	16,826	16,826	67,305	
Enfermeria Professionales	19,721	Mo	0	236,654	236,654	236,654	236,654	946,614	
Auxiliares de Salud	49,081	Mo	0	588,977	588,977	588,977	588,977	2,355,908	
Tecnicos de Estadistica	2,167	Mo	0	26,010	26,010	26,010	26,010	104,039	
Otros Tecnicos Salud	13,727	Mo	0	164,724	164,724	164,724	164,724	658,897	
Personal Administrativo	41,265	Mo	0	495,180	495,180	495,180	495,180	1,980,719	
Ejecutivos Administrativos	4,192	Mo	0	50,300	50,300	50,300	50,300	201,202	
SUB-TOTAL, OPERATIONAL SUPPORT			0	1,609,246	1,609,246	1,609,246	1,609,246	6,436,986	86.52%
TOTAL, TECHNICAL ASSISTANCE			18,040	1,703,426	1,703,426	1,703,426	1,703,426	6,831,743	91.83%

TABLE F-6 (CONT.): GOVERNMENT OF NICARAGUA CONTRIBUTION (U.S. $ EQUIVALENT)

Description:	Unit Price	Unit	Year One (1993)	Year Two (1994)	Year Three (1995)	Year Four (1996)	Year Five (1997)	LOP Total	As % of Total
II. TRAINING									
A. FOR MH/CS COMPONENT:									
- MH/CS Orientation (50 x 2 days ea)	13.48	day	1,348	0	0	0	0	1,348	
- MH/CS TOT (50 x 12 days each)	6.29	day	0	3,773	0	0	0	3,773	
- Health Intervention (5,000 x 12 days)	6.09	day	0	109,553	146,071	109,553	0	365,177	
- HIT Cont. Ed. (500x12 + 4500x2)	6.09	day	0	0	0	45,647	45,647	91,294	
- Counselling Training (2400x5 days)	4.20	day	0	16,816	33,632	0	0	50,448	
- HPT Cont. Ed. (2200*1 + 200x3)	4.20	day	0	0	0	5,886	5,886	11,771	
- ST U.S./3rd Country Training	67.41	wk	0	1,011	3,033	2,022	0	6,067	
SUB-TOTAL, MH/CS TRAINING:			1,348	131,153	182,736	163,108	51,533	529,878	7.12%
B. FOR MFD COMPONENT:									
- MFD Orientation (200 x 2 days ea.)	13.48	day	0	5,393	0	0	0	5,393	
- MFD TOT (12 x 9 days each)	5.94	day	0	642	0	0	0	642	
- GEMS Training (500 x 9 days each)	5.95	day	0	13,377	13,377	0	0	26,755	
- Computer Skills (250x15 days ea.)	3.71	day	0	4,632	9,265	0	0	13,897	
- FMS Training (250 x 10 days each)	4.82	day	0	579	579	5,450	5,450	12,058	
- Specialized MIS Trg. (80x30 days)	3.15	day	0	0	3,777	3,777		7,553	
- MIS User Training	6.65	day	0	0	0	2,658	2,658	5,316	
- Transport/Logistics (200x 0 days)	3.15	day	0	0	6,294	0	0	6,294	
SUB-TOTAL, MFD TRAINING:			0	24,623	33,292	11,885	8,108	77,908	1.05%
TOTAL, TRAINING:			1,348	155,776	216,028	174,993	59,641	607,787	8.17%
TOTAL GON CONTRIBUTION:			19,388	1,859,202	1,919,454	1,878,419	1,763,067	7,439,530	100.00%
ROUNDED TO:								7,400,000	

TABLE F-7: GON EXPENDITURES BY TYPE OF INPUT AND PROJECT YEAR

TYPE OF INPUT:	Year One (1993)	Year Two (1994)	Year Three (1995)	Year Four (1996)	Year Five (1997)	LOP Total	As % of Total:
I. Technical Assistance:	18,040	1,703,426	1,703,426	1,703,426	1,703,426	6,831,743	91.83%
II. Commodities:	0	0	0	0	0	0	0.00%
III. Training:	1,348	155,776	216,028	174,993	59,641	607,787	8.17%
TOTAL GON CONTRIBUTION:	19,388	1,859,202	1,919,454	1,878,419	1,763,067	7,439,530	100.00%
ROUNDED TO:						7,400,000	

TABLE F-8: GON EXPENDITURES BY PROJECT COMPONENT AND YEAR

PROJECT COMPONENT:	Year One (1993)	Year Two (1994)	Year Three (1995)	Year Four (1996)	Year Five (1997)	LOP Total	As % of Total:
II. Maternal Health/Child Survival	14,357	1,046,640	1,098,222	1,078,594	967,019	4,204,832	56.52%
III. Mgt./Fin. Decentralization	4,182	793,364	802,034	780,627	776,850	3,157,057	42.44%
IV. Alternate Sources of Finance	849	19,198	19,198	19,198	19,198	77,641	1.04%
TOTAL GON CONTRIBUTION:	19,388	1,859,202	1,919,454	1,878,419	1,763,067	7,439,530	100.00%
ROUNDED TO:						7,400,000	

TABLE F-9: ESTIMATED GON TRAINING COSTS (US. $ EQUIVALENT):

Type of Training:	# Trainees	Category	Salary/Day	Total Cost/Day	Avg. Cost/ Emp/Day
A. MH/CS Training					
- MH/CS Orientation	50	Directores	13.48	674	13.48
- MH/CS Training of Trainers	50	Enfermeras Prof.	6.29	314	6.29
- Health Intervention (HIT)	60	Directores	13.48	809	6.09
	43	Sub-Directores	10.35	445	
	423	Medicos Esp.	10.92	4,620	
	841	Medicos Gen.	9.61	8,081	
	158	Medicos Int.	5.97	944	
	448	Enfermeras Prof.	6.29	2,817	
	1,890	Auxiliares	3.71	7,012	
	737	Tecnicos Salud	4.43	3,268	
- HIT Continuing Education	4,600	Same as HIT above	See HIT above	See HIT above	6.09
- HPT Counselling Training	448	Enfermeras Prof.	6.29	2,817	4.20
	1,890	Auxiliares	3.71	7,012	
- HPT Continuing Education	2,338	Same as HPT above	See HPT above	See HPT above	4.20
- ST U.S./3rd Country Training	30	Directores	13.48	404	13.48
B. MFD Training:					
- MFD Orientation	50	Directores	13.48	674	13.48
- MFD Training of Trainers	12	Ejecutivos Admin.	5.94	71	5.94
- GEMS Training	60	Directores	13.48	809	5.95
	43	Sub-Directores	10.35	445	
	168	Ejecutivos Admin.	5.94	998	
	229	Personal Admin.	3.15	721	
- Computer Skills	50	Ejecutivos Admin.	5.94	297	3.71
	200	Personal Admin.	3.15	629	
- FMS Training	150	Ejecutivos Admin.	5.94	891	4.82
	100	Personal Admin.	3.15	315	
- Specialized MIS Training	80	Personal Admin.	3.15	252	3.15
- MIS User Training	60	Directores	13.48	809	6.65
	43	Sub-Directores	10.35	445	
	168	Ejecutivos Admin.	5.94	998	
	129	Personal Admin.	3.15	406	
- Transport/Logistics	200	Personal Admin.	3.15	629	3.15

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TABLE F-10: POTENTIAL MH/CS TRAINEE POPULATION, DHS FOCUS SILAIS

SILAIS:

Employment Category:	Managua Occidental	Managua Central	Managua Oriental	Matagalpa	Jinotega	Total
Medicos Directores	19	10	6	13	12	60
Sub-Directores Medicos	16	15	6	6	0	43
Medicos Especialistas	161	173	45	33	11	423
Medicos Generales	307	307	107	83	37	841
Medicos Internos	46	70	0	25	17	158
Enfermeria Professionales	144	157	62	56	29	448
Auxiliares de Salud	620	542	256	294	178	1,890
Tecnicos de Estadistica	47	41	17	20	12	137
Otros Tecnicos Salud	306	168	132	83	48	737
Personal Administrativo	1,275	996	325	472	208	3,276
Ejecutivos Administrativos	64	37	22	29	16	168
Sub-Total Medicos	549	575	164	160	77	1,525
Sub-Total Enfermas, Auxiliares	764	699	318	350	207	2,338
Sub-Total Tecnicos	353	209	149	103	60	874
Sub-Total Administrativos	1,339	1,033	347	501	224	3,444
Total:	3,005	2,516	978	1,114	588	8,181
Total Possible HIT Trainees:	1,666	1,483	631	613	344	4,737
Total Possible HPT Trainees:	764	699	318	350	207	2,338

TABLE F-11: ESTIMATE OF GON OPERATIONAL SUPPORT (U.S. $ EQUIVALENT)

Employment Category	Number of Employees	Monthly Salary	Total Salaries	% of Time to DHS	Total/Mo. to DHS*
Medicos Directores	60	283.11	16,986.52	15%	2,547.98
Sub-Directores Medicos	43	217.39	9,347.90	15%	1,402.19
Enfermeria Professionales	448	132.06	59,163.39	33%	19,721.13
Auxiliares de Salud	1,890	77.91	147,244.23	33%	49,081.41
Tecnicos de Estadistica	137	79.10	10,837.37	20%	2,167.47
Otros Tecnicos Salud	737	93.13	68,635.08	20%	13,727.02
Personal Administrativo	3,276	62.98	206,324.86	20%	41,264.97
Ejecutivos Administrativos	168	124.75	20,958.53	20%	4,191.71

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TABLE F-12: SUMMARY OF LOP CONTRIBUTIONS BY INPUT AND FUNDING SOURCE

Category:	GON	A.I.D.	Total
Technical Assistance	6,831,743	6,967,687	13,799,430
Commodities		7,337,419	7,337,419
Training	607,787	3,084,160	3,691,947
Evaluation		180,000	180,000
Audit		50,000	50,000
Immunization		3,500,000	3,500,000
Contingency and Inflation		880,734	880,734
TOTALS:	7,439,530	22,000,000	29,439,530

TABLE F-13: SUMMARY OF LOP CONTRIBUTIONS BY COMPONENT AND FUNDING SOURCE

Component:	GON	A.I.D.	Total
Accelerated Start		1,883,109	1,883,109
Maternal Health/Child Survival	4,204,832	10,478,197	14,683,030
Mgt./Fin. Decentralization	3,157,057	3,857,024	7,014,081
Alternate Sources of Finance	77,641	1,170,936	1,248,577
Immunization		3,500,000	3,500,000
Evaluation		180,000	180,000
Audit		50,000	50,000
Contingency and Inflation		880,734	880,734
TOTALS:	7,439,530	22,000,000	29,439,530

ANNEX G: TECHNICAL ANALYSIS OF

MATERNAL HEALTH/CHILD SURVIVAL COMPONENT

I. Introduction

The maternal health and child survival technologies that will be supported by the DHS Project are effective and proven methodologies, having been applied worldwide in numerous programs. The implementation by MINSA of many of these technologies is, in fact, fairly well established at the central level. This project proposes to extend and consolidate these practices in a decentralized fashion in the five focus SILAIS.

II. Project-Funded MH/CS Interventions

The major technical interventions which this project is to promote include (1) control of diarrheal diseases (CDD); (2) control of acute respiratory infection (ARI); (3) an expanded program on immunization (EPI); (4) nutrition, including growth monitoring, breastfeeding, proper weaning practices, and vitamin A supplementation; and, (5) family planning and maternal health, including prenatal and postpartum care, and safe delivery. Each of these interventions is discussed below.

A. Control of Diarrheal Diseases (CDD)

The main cause of infant and child mortality in Nicaragua is diarrheal disease. To address this situation, the project will seek to reduce infant and child mortality caused by diarrheal disease by 25% in the focus SILAIS. Control efforts will include training in and promotion of appropriate management of acute diarrheal disease. Case management of diarrheal disease, termed oral rehydration therapy (ORT), is based on the use of oral rehydration solutions (ORS) and/or appropriate homemade fluids and continued feeding during diarrhea. Prevention of diarrhea through health education efforts to promote breastfeeding, including exclusive breastfeeding during the first 4 to 6 months of life, improving personal hygiene, and improving food handling practices, particularly with regard to weaning foods, will be important components of the CDD program. Thus, the program will promote the use of fluids and foods at home early in the course of a diarrheal episode. The program will also encourage the appropriate referral of children to a health facility for treatment if the diarrhea worsens. Thus, the program will train health professionals and community health workers (CHWs) in the use of ORS and the promotion of ORT and breastfeeding, and increase the availability of ORS.

Since an estimated 50% to 60% of all diarrheal deaths are due to acute episodes of diarrhea and associated dehydration, appropriate and timely rehydration of the child with diarrhea should have a considerable impact on diarrheal mortality. Reductions in diarrheal deaths of up to 50% have been demonstrated in controlled community-based ORT interventions in other countries. In addition, when hospital data from developing countries with CDD programs were compared pre- and post- ORT initiation, case fatality rates for diarrhea decreased by 67% to 95% with a median of 71%.[1] Hospital admission rates for diarrheal diseases in the study countries also decreased by a median of 61%.

Diarrheal control has also been shown to improve child health by curtailing the negative effect diarrhea has on growth and nutritional status. The protective effect of breastfeeding both on the incidence and severity of diarrheal diseases has also been documented in several studies. A prospective study of infant feeding practices in Peru and their relation to infection demonstrated that the incidence and prevalence rates of diarrhea in exclusively breastfed infants less than six months of age were lower than in infants of the same age who received other liquids in addition to breast milk. The authors concluded that universally practiced exclusive breastfeeding for six months would theoretically reduce the incidence of diarrhea by one-third and the prevalence by one-half through the immunological properties of breast milk and by delaying exposure to pathogens in bottled milk, other liquids and solid foods offered to infants, and by improved nutritional status.

This technical analysis points to the importance of diarrheal disease in the morbidity and mortality profile of Nicaragua, and concludes that the CDD program is a feasible intervention and should be supported.

B. Acute Respiratory Infection (ARI) Control

This project will also address the second leading cause of infant and child mortality in Nicaragua, acute respiratory infections (ARI). The project will assist the MINSA in reducing mortality from ARI in the focus SILAIS through a dual strategy.[2] The first aspect of this strategy will involve improved management of

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[1] The Johns Hopkins University, Institute for International Programs. 1990. Child Survival Programs: Issues for the 1990s. Baltimore, Maryland.

[2] Less is known about the incidence and prevalence of ARI in Nicaragua than for diarrheal diseases. However, the Family Health Survey, which is being implemented by PROFAMILIA, should provide valuable data on the epidemiology of this disease in Nicaragua.

ARI in the home. This will be achieved by teaching mothers and other caretakers appropriate treatment measures. For example, continued breastfeeding, recognition of danger signs such as rapid respiration, stridor, intercostal retractions (sunken chest), bluish lips and fever, which indicate the need for referral, and the importance of completing antibiotic treatment in the home once such treatment has been initiated, are three such measures. This will be accomplished largely through mass media reinforced by personal communication at the community and health facility level.

The second part of the strategy is to be accomplished through improved MINSA case management of ARI, i.e., by supplying the MINSA with enough antibiotics to meet the increased demand for treatment in the focus SILAIS that is expected to come from a better educated public, and through in-service education of health facility personnel. DHS will help the MINSA promote the following approach to controlling ARI:

(1) Prevention of life-threatening pneumonias using known techniques such as immunizations, promotion of exclusive breastfeeding of infants, and improved nutrition, including vitamin A supplementation; and

(2) Case management of serious ARI. Case management is not meant to substitute for or replace primary prevention of ARI, but rather to complement the known effective preventive methods (immunizations against measles and pertussis, improved breastfeeding/weaning and maternal and child nutrition).

This strategy will permit mothers/caretakers, non-professional and professional health workers to recognize and treat bacteria-caused pneumonias, the most common life-threatening ARI in children. The "standard case management" strategy comprises three essential elements: (1) identification of pneumonia by the health worker, using a standard protocol developed by the World Health Organization (WHO); (2) treatment of most pneumonia cases at home according to a standard regimen using inexpensive antibiotics (Co-trimoxazole, Amoxicillin, Ampicillin); and (3) referral of young infants and severely ill children to more advanced health facilities.

Competency-based training of health workers and careful, frequent supervision will be critical to the effectiveness of this approach. Other essential elements include a strong communication effort directed at teaching mothers/caretakers to know when and where to seek help for sick children, and an infrastructure for reliable delivery of antibiotics. This approach has been shown to be effective in nine community trials, including one sponsored by A.I.D. In an analysis of six of these

trials, ARI case management was associated with an average 25% mortality rate reduction in children under five years of age.[3]

C. Expanded Program on Immunization (EPI)

The worldwide Expanded Program on Immunization (EPI), directed by the World Health Organization, has had an appreciable impact on child survival and has developed into the strongest of the intervention programs in most countries.[4] More than any other program, EPI has demonstrated that access to the majority of the population can be achieved.

In Nicaragua, the EPI program implemented by MINSA with support from USAID, the Pan American Health Organization (PAHO), and other donors has been relatively successful. Complete vaccination coverage of children under one year of age ranges from 63% for measles to 94% for BCG. With assistance from DHS, MINSA will seek to achieve 80% coverage for each vaccine by 1998. UNICEF considers an 80% coverage level (percentage of children aged 9 to 59 months that are completely immunized against all of the vaccine-preventable diseases) as a minimum indication of having achieved universal immunization or that level required to halt the transmission of immunizable diseases.[5]

Improvements in EPI coverage should be expected to draw people into the health system so that other programs (CDD, ARI, family planning) might gain wider and more frequent exposure. Other indirect effects of a successful EPI program include improved nutritional status due to a lower burden of infectious disease as immunization is an effective means of breaking the vicious cycle and synergy of infection and malnutrition. Additionally, immunization against measles and pertussis protects the child from two major causes of ARI mortality, while measles vaccination alone decreases diarrheal incidence and associated mortality.

This technical analysis confirms that this project should support this important program, but suggests that attention be given to the issues of sustainability. Over the life of this project, the MINSA will be required to assume an increasing percentage of the costs associated with vaccine procurement.

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[3] United States Agency for International Development. 1992. Guidelines for Acute Respiratory Infection Control. Washington, D.C.

[4] Waldman, R., Cutts, F., Steketee, R. and Davis, J. 1991. Child Survival Programs in Africa: Suggestions for an Integrated Approach. Unpublished manuscript. International Health Program Office, Centers for Disease Control. Atlanta, Georgia.

[5] UNICEF. The State of the World's Children.

D. Nutrition

According to UNICEF, malnutrition affects 40% of all children in developing countries and contributes directly or indirectly to an estimated 60% of all child deaths.[6] However, nutrition programs, particularly vitamin A supplementation and encouraging breastfeeding, can reduce morbidity or mortality from most childhood diseases. Reductions in maternal and child mortality can also be expected from longer birth intervals achieved by longer breastfeeding.

Vitamin A supplementation protects the child in three ways. First, it reduces the child's risk of mortality from diarrheal, respiratory, or measles infection. Second, it reduces the risk of blindness. It has long been known that lack of vitamin A causes loss of vision in small children (or Xerophtalmia, the medical term for this condition). Third, vitamin A reduces the risk of growth retardation.

The health benefits of breastfeeding for children in developing countries are well-documented.[7] Breast milk is an appropriate source of infant nutrition, provides the infant with immunological protection, and is generally free of contamination. In an indirect way, breastfeeding promotes improved maternal and child health by lengthening birth intervals. For all of these reasons, breastfeeding is considered an important determinant of child survival.

In addition to vitamin A supplementation and breastfeeding, this project will also promote proper maternal nutritional status during lactation, improved weaning practices, feeding during illness, and growth monitoring. It should be noted, however, that growth monitoring will be effective in preventing childhood malnutrition only to the extent that early detection of growth faltering leads to prompt and appropriate nutritional intervention. Additionally, the community health workers that will implement growth monitoring will need to ensure that this activity results in an interactive session that is beneficial to the mother/caretaker rather than just a mechanical activity of measuring children.

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[6] Grant, J. 1988. The State of the World's Children. Oxford University Press. New York.

[7] Grummer-Strawn, L. 1991. Trends in Breastfeeding Duration in Fifteen Developing Countries. Paper presented at the 119th Annual Meeting of the American Public Health Association, November 10-14, 1991, Atlanta, Georgia.

E. Family Planning and Maternal Health

One of the strongest correlates of infant, child, and maternal mortality and morbidity is untimely and high fertility. This is because the health of both children and their mothers is compromised when:

- The mother is very young. Children born to teenage mothers have a considerably greater risk of early death than do children born to women who have achieved full physical maturity. Such very young mothers are also more likely to suffer maternal morbidity and mortality.

- Spacing between births is too short. Children born at less than two years after a preceding birth are about twice as likely to die in infancy as are children born after a longer interval. Similarly, the child born at the start of a short interval is also at increased risk.

- The mother gives birth to a large number of children. As parity increases beyond the third child, the probability of infant survival decreases.

- The mother gives birth late in her reproductive life. Both infant and maternal morbidity and mortality rise with increasing age after about thirty years.[8]

In short, family planning saves the lives of mothers and their children by reducing the incidence of these high-risk pregnancies. For example, maternal mortality risks rise with increasing birth order, but decrease as the number of occasions upon which the woman is subjected to these risks is reduced. Lowered individual fertility also has an indirect impact on child survival chances and on the health and development of the child. The smaller family allows more resources to be allocated per child, including maternal care and attention, food, schooling, and health care.

Studies conducted in Latin America show that between 30% and 70% of the maternal deaths are due to abortion and abortion-related infection.[9] Family planning services can help reduce these deaths by providing couples with the means to help them have the number of children they want when they want them.

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[8] Hobcraft, J. 1987. Does Family Planning Save Children's Lives? Technical background paper prepared for the International Conference on Better Health for Women and Children Through Family Planning, Nairobi, Kenya, October 5-9, 1987.

[9] International Planned Parenthood Federation Western Hemisphere Region 1990 Annual Report.

Approximately 500,000 women in developing countries die each year from complications associated with pregnancy and childbirth.[10] A large number of these deaths could be prevented by improving access to prenatal and postpartum services and to medically attended deliveries, when warranted. The importance of reasonable access to primary obstetric services cannot be overemphasized. Thus, the major elements of a successful maternal health program would include:

- An effective outreach program that alerts all women to available services and improves accessibility (family planning for non-pregnant women and maternity care for pregnant women).

- Effective community-based maternity care with access to skilled midwives who carry supplies to stabilize women in times of obstetrical emergencies.

- A transport system to a referral site where surgery, blood and essential drugs are available. Although trained community health workers, i.e., traditional birth attendants, can play an important role in bringing about improvements in pregnancy outcomes, they cannot bring about major reductions in maternal and neonatal mortality unless they are supported by well-equipped and well-staffed referral centers.

This analysis points out the importance of this program for the health of women and their children, and strongly recommends that it be supported.

III. Integrated Health Services Delivery

For the sake of simplicity, the preceding technical analysis dealt with the different MH/CS intervention separately. However, it is the intent of this project that these interventions be provided to Nicaraguan mothers and children in an integrated fashion.

During the 1980s, progress has been made towards improving the health and survival of mothers and children in Nicaragua. Nevertheless, Nicaraguan mothers and children continue to die from preventable or treatable illnesses at unacceptable rates. Maternal risk factors such as excessively short birth intervals and inadequate health care during pregnancy frequently lead to the delivery of low birth weight infants who are more susceptible

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[10] Population Reference Bureau. 1991. Planificación Familiar: Salvando las Vidas de Madres y Niños. Washington, D.C.

to severe illness and death due to the most common childhood infections: diarrheal diseases, respiratory infections, and measles.

Mothers remain inadequately informed of ways to prevent or treat their own and their children's illnesses. Even when information regarding proper health care practices and behavior has been widely disseminated and accepted, the existing health care system sometimes imposes difficult obstacles. The negative incentives to mothers who must return repeatedly to often under-staffed clinics, where they must wait for long periods before being offered only a few services and pharmaceutical products, are very great and can act to the detriment of mother, child, and the health system.

It is imperative that more services and services of higher quality be offered if further gains in mortality reduction are to be achieved. However, because of the persistent economic crisis that has led to inadequate budgetary allocations to the health sector, and to the relatively low access of the population to health facilities, there is a need to improve the integration of health services.

This need for improved integration is made more evident when one considers that no matter how well programs are managed at the central level, it is always at the more peripheral levels of the health care system that program implementation must take place. In every clinic, one individual, or a small team, is responsible for all public health programs. It is at the clinic level that constraints of money, personnel, and time are most acutely felt, and it is at this level that the benefits of program integration will be the greatest.

Thus, one of the objectives of this project is the better integration of health interventions, as discussed above, at the peripheral levels of the health care system, combined with the development of strong technical expertise in individual program areas at the central and SILAIS levels. An increasingly integrated strategy is compatible with national management capacity and would allow for a more efficient use of increasingly scarce national and donor financial resources. Finally, a more integrated health care delivery system would allow peripheral health care workers, the crucial contacts between the health system and its target population, to offer regularly more comprehensive services of higher quality, including the promotion of primary health care at the community level, and to respond better to the needs of both mothers and children in a manner which would lead to an accelerated reduction of preventable mortality.

Thus, the provision of health services in a given locality of a focus SILAIS, may appear as follows: a community health worker

would offer a choice of contraceptive methods at the home of each woman, motivate and counsel women for family planning, monitor and manage adverse effects, promote oral rehydration, distribute vitamin A capsules, detect and refer malnourished children, and distribute prenatal vitamins (including iron folate) to pregnant women. In addition, s/he would refer children for EPI vaccines, and refer severely sick mothers and children and women with high risk pregnancies to nearby health facilities. At the health facility level, doctors and nurses (due in large part to the training they will receive under this project) will offer a range of services beyond those which were indicated by the referral. For example, a child referred to a health facility with severe diarrhea would receive, in addition to rehydration therapy, a complete evaluation of his/her health problems and those of the family. Because oral rehydration can take several hours, mothers are relatively captive within the health system until their child is ready for discharge. This time will be used for health education on diarrheal issues, control of ARI, the promotion of breastfeeding and good nutrition, and family planning.

This technical analysis recognizes that a broader concept of health care in Nicaragua needs to be adopted. Although there is clearly a need for strong technical leadership in all intervention areas, health policy makers should recognize that, given the scarcity of resources, the most efficient approach to health care will be to take maximum advantage of common features in developing and implementing the technical interventions.

ANNEX H: SOCIAL SOUNDNESS ANALYSIS

ANNEX H: SOCIAL SOUNDNESS ANALYSIS

I. Introduction

The Decentralized Health Services Project (DHS) seeks to improve the management and increase the effectiveness of and access to Nicaragua's public health resources, and to explore and encourage alternative sources of financing to the sector, thereby improving maternal and child health in Nicaragua. DHS will seek to do so through three principal components: Maternal Health and Child Survival (MH/CS); Management and Financial Decentralization (MFD); and Alternate Sources of Finance (ASF).[1] The objective of this Social Soundness Analysis (SSA) is to examine each project component in terms of social and cultural appropriateness at the lowest levels of the health delivery pyramid and local communities, both urban and rural. Particular attention will be placed on the interphase between the client population and health-care providers, and on how to improve the image of MINSA as an effective and reliable source of quality primary care.

In specific terms, the Project components examined by this SSA include the following:

A. Maternal Health and Child Survival (MH/CS)

The key to the success of this component will be the provision of adequate training of personnel at all levels, including the entire SILAIS medical staff, community health workers (CHWs), and traditional midwives. Once initial training has been completed, an in-service training, supervisory, referral/counter-referral, and supply system must be designed and implemented. Central to this SSA is an analysis of the involvement of CHWs and other community residents in relation to the basic MH/CS interventions: expanded immunization coverage, oral rehydration therapy (ORT), acute respiratory infections (ARI), growth monitoring and child development, and breastfeeding and nutrition education. The critical issues examined include the training and support of health workers and voluntary community health promoters and the role of promoters in an appropriate mix of preventive and curative activities.

B. Management and Financial Decentralization (MFD)

This project component will provide technical assistance and training in management, administrative, financial, and information skills to MINSA personnel in all 19 of Nicaragua's SILAIS in close coordination with other donors sponsoring similar

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[1] For purposes of this analysis, the project's Accelerated Start Component is treated as part of the MH/CS component.

efforts. The primary focus will be on management improvement and training at the SILAIS level, assistance will be provided to MINSA Central only insofar as necessary to further the process of decentralization. DHS-funded training will emphasize local programming, decentralized decision-making, the design and installation of financial management (FMS) and management information (MIS) systems, and logistics.

This SSA examines the extent to which these efforts will better equip the SILAIS to fulfil their role in a decentralized system of health service delivery. It is anticipated the SILAIS will be able to both improve and redesign supervision, financial and management information systems, and the training of personnel. Furthermore, the SILAIS will be in closer administrative contact with the corresponding health centers, medical posts and health posts to create a delivery system more responsive to local needs, problems, and special considerations. In other words, the SILAIS should be able to respond and adapt services to local circumstances. In the past, the highly centralized MINSA has either not responded to local needs or has been extremely slow.

C. Alternate Sources of Financing (ASF)

MINSA provides most care free of charge. Its recurrent cost burden is therefore very high (close to the equivalent of $70 million per year, as shown in Section III.B.4 of the body of this Project Paper). Under current budgetary limitations, however, funding for services and supplies is extremely limited. To help MINSA shoulder its recurrent cost burden and find ways to devote more resources to primary health care, the ASF component will work with MINSA and the SILAIS to identify cost containment and cost recovery methods and to introduce these methods on at least a pilot basis.

Each of these components is examined below in terms of its social feasibility by analyzing the organization, attitudes, activities, and motivation of community residents, MINSA personnel, current socioeconomic conditions, and the recent political history of Nicaragua. The emphasis is on community residents, local leaders, and community health workers.

II. Relevant Background

To put the interventions of the project into the current Nicaraguan context, the socioeconomic conditions of the population must be examined. Events in Nicaragua during the past decade have left the country with high unemployment, low per capita income, and a severely debilitated health care system. This section examines current conditions, but it should be emphasized that it is impossible to generalize about the entire

country: conditions vary considerably from region to region in terms of both income and standards of living.

A. Socioeconomic Conditions in Nicaragua

An examination of the role of community health workers and other residents and their organizational structure in relation to the delivery of quality health care must include an evaluation of the economic status of both rural and urban areas. The concern is whether or not families with children can satisfy minimal needs in terms of housing, sanitary facilities, health, and nutrition. It is assumed that families who are unable to adequately house and feed themselves will be largely unable to divert their scarce financial resources to seek health care outside the public sector, purchase medicines, and provide adequate nutrition for themselves and their children.

1. Extent of Poverty in Nicaragua: Summary Data

Because of the wild fluctuation in the value of the Nicaraguan currency during between 1987 and 1991, multiple sources of family income, networks of family cooperation, production for home consumption, and payment in-kind, it is virtually impossible to determine the nature and extent of poverty using monetary income as a measure. An alternate method is to examine a family's ability to satisfy certain necessities in terms of a basic food basket and the maintenance of adequate nutrition.

The criteria used in recent household surveys to divide families into groups of those who can meet basic needs versus those who to varying degrees cannot are based on a composite indicator, combining the following measures:

- **Inadequate Quality of Housing** is determined by the presence of dirt floors and/or walls and ceilings of tin or waste materials such as paper carton or pieces of wood.

- **Crowding** is based on whether or not four or more people sleep in the same room.

- **Insufficient Services** consist of the lack of potable water and/or a latrine within the confines of the household or surrounding compound.

- **Low Educational Levels** are measured in terms of a household having at least one school-age child who is not attending any kind of school.

- **High Economic Dependence** is defined as households with at least two individuals economically dependent on a head of household who has not completed primary school.

If one or more of these measures apply to a household, it is classified as poor (*pobres*). These families are further divided into the extremely poor (*en extrema pobreza*) if two of the measures apply or in misery (*en miseria*) if three or more of the measures apply. Furthermore, families who do not qualify for any of these measures are considered able to satisfy basic needs (*necesidades básicas satisfechas—NBS*) versus those who cannot based on one or more of the measures (*Necesidades básicas insatisfechas—NBI*).[2]

The deterioration of the quality of life in Nicaragua becomes evident from the 1985 sociodemographic survey which showed that 86% of the rural population and 55% of urban residents could not satisfy their basic needs. Poverty affected 70% of the population. Of these, 23% were in extreme poverty and 16% in misery, 34% lived in crowded houses, 47% did not have access to potable water, and 25% of the school age population were not enrolled in school.

Between 1986 and 1990, the situation deteriorated considerably because of the worsening economic conditions, the effects of the war, natural disasters, high population growth, and increased rural to urban migration. By 1990, the under 16 cohort of the population was at 50% of the total, and there was an estimated 400,000 unit housing deficit which was increasing rapidly due to the creation of 20,000 new "family" units each year. Currently, some 63.2% of the total population does not have adequate housing, 55% of the homes in urban areas have only one room, and in rural regions one room homes comprise 67% of the total.

According to a Household Survey completed in March and December 1989, about 35% of the population consists of children under 10. Of these, 75% live in poverty. About 46% of all homes are classified as poor. The majority of these household heads are unemployed, and those who do work receive low wages, have little education, and work as unskilled laborers, partake in informal sector activities, agricultural wage labor, or are in the armed forces. A significant decline in the size of the army has occurred since 1990, but decommissioned soldiers form a significant portion of the un- and under-employed sectors of the population (see below for more details).

The table below shows a comparison between 1985 and the two surveys completed in 1989. In 1985, sociodemographic survey data showed that 43% of the households in Managua should be classified

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[2] "Características de los Jefes de Hogares y La Pobreza en la Ciudad de Managua," Dirección General Nivel de Vida, Secretaría de Planificación y Presupuesto, Ministerio de la Presidencia y el Fondo de las Naciones Unidas para Actividades de Población (FNUAP), Managua, Agosto 1990.

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as poor. By the end of 1989 the rate had increased to 45.7%. The table below shows the total distribution of those who can satisfy basic needs in relation to those who cannot, and a breakdown by female versus male heads of household. It should be noted that the percentage of poor households is significantly higher for those headed by females.

Table H-1: Poverty Levels in Managua from 1985 to 1989 (percent of families)

	1985			March 1989			December 1989		
Poverty Indicators	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**
Can Satisfy Needs	57.0	58.7	53.1	54.3	56.0	50.0	54.5	59.4	45.1
Cannot Satisfy Needs	43.0	41.3	46.9	45.7	44.0	50.0	45.5	40.6	54.9

Of the families in poverty in 1985, 12.7% were classified as in extreme poverty and 3.6% as in misery. In 1989, the level of extreme poverty had not changed significantly, but the level of misery had nearly doubled to 6.6%. In terms of the specific indicators making up the composite NBI index, the number of families with inadequate living quarters and insufficient services increased, while the degree of crowding decreased, educational levels improved slightly, and the degree of economic dependence remained constant. Furthermore, the distribution of poverty became more extreme in certain regions of the country. In contrast to the national poverty level of 70%, levels have reached 85% in Zona Especial I/II, 82% in Region I, 81% in Region VI, 76% in Region V, 74% in Region II, and 73% in Zona Especial II.

More than three years have passed since the surveys discussed above were carried out. In the meantime, the economy has continued to decline. There is no way of knowing exactly how much poverty levels have increased, but by 1990, more than 70% of the Nicaraguan population was estimated to be in varying degrees of poverty. Nicaragua is considered to be the third poorest country in Latin America.

2. Extent of Malnutrition in Nicaragua

In general terms, the caloric and protein intake of the Nicaraguan population has declined substantially since 1986, the last year when the average consumption met minimal standards. Table H-2 on the following page shows the decline from 1986 to 1989.

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Table H-2: Calorie and Protein Consumption from 1986 to 1989

Nutrients:	1986	1987	1988	1989
Calories (kcal.)	2,160	1,932	1,610	1,591
% of Daily Requirements	116.7	104.4	87.0	86.0
Protein (grams)	49.8	44.7	38.9	37.5
% of Daily Requirements	99.0	89.2	77.6	74.9

Source: SPP 1990

The implication of the increasing protein-calorie deficiency in the general population is that a significant portion is suffering from some degree of malnutrition or is at risk of becoming malnourished. The groups most likely to suffer more severe effects are children and pregnant or lactating women who have higher nutritional requirements. When higher nutritional needs are considered in conjunction with the current levels of poverty, the size of the protein-calorie deficits are, in fact, much higher for a large proportion of the Nicaraguan population. Furthermore, some regions of the country are more affected than others.

Severe malnutrition or wasting is not a major problem in the school-age population, although almost one-quarter of the of the 6-9 year olds are at risk. The rate of low weight for age is under 20% for all three age groups, but the most severe nutritional problem among Nicaraguan school-children is stunting.[3] The rates of stunting are highest for 13-14 year old males at 43.4% of the sample and almost 10% lower for females. When those at risk of becoming stunted are added to the percent of stunted children, the percentages are alarmingly high: all are 50% with some at or very close to three-quarters of the oldest age cohort.

High rates of malnutrition are a strong indicator of the deteriorating economic circumstances in which most Nicaragua families live. Stunting is the principal nutritional problem, affecting 30-35% of the children in marginal and poor areas of the country. The educational consequences of stunted growth in school-age children include poor cognitive abilities, decreased aerobic activities, and significant reduction in alertness. Important health effects are increased morbidity and mortality rates, a 30% increase in time needed to recuperate from frequent

[3] As indicated by the large percentage of children who are short for their age, indicating deficient skeletal development.

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diarrheal episodes, and increased chances that acute respiratory infections will turn into pneumonia. The percentage of children who are underweight or suffering from physical wasting as a consequence of malnutrition is not particularly high. As a result, the vast majority of Nicaraguan children do not appear malnourished, and it is only when height for age is measured that the extremely high rates of stunting become apparent.

B. Political Organization

Virtually all communities visited by this investigator during March of 1991 were characterized by some degree of political division, ranging from rather mild factionalism to extreme polarization. The degree of division was generally a function of what party had won recent municipal elections and the degree of cooperation that could be negotiated with the other party. For example, the city of Estelí can be characterized as the most polarized community encountered in all six regions.

The political conditions in Estelí are most certainly not representative of the rest of the country, but they do point to instability and volatility. In smaller communities a remarkable degree of co-existence was found between the opposing political camps. For example, San Pedro is a small rural community about 10 kilometers north of Estelí where both Sandinista National Liberation Front (FSLN) and National Opposition Union (UNO) members have organized and carried out community and school projects, working successfully as one unified group.

It was not unusual to hear a member of UNO criticize the FSLN and vice versa. At the same time, however, it became apparent that most people, regardless of political affiliation, want to get on with their lives and try to improve living conditions in their communities. This includes improving the quality of health care as well as the educational environment where their children attend school. According to information provided by both parents and teachers, the levels of political animosity have peaked, and conditions have begun to stabilize. Most people are more concerned with making a living and having enough to eat rather than spending time fighting political battles. Although political factors can be an impediment to health care delivery, most political party organizations, municipal governments, MINSA facilities, schools, and parental organizations are more concerned with confronting the problems of scarce resources rather than political in-fighting.

C. Community Organization

1. General Observations

All Nicaraguan communities, both urban and rural, are administratively part of a *municipio* (municipality), the lowest level of political organization. A *municipio* can correspond to a single community or small city or include a central town with a varying number of subsidiary communities. Structurally, the *municipio* is led by an elected *alcalde* (mayor) who coordinates tax collection, administrative activities, and local development projects.

During the ten years of FSLN administration, *municipios* and local communities (*comarcas*) were organized into *Comités de Defensa Sandinista (CDS)*, reaching to the lowest local levels of urban neighborhoods and small rural towns. Essentially, the local CDS organizations formed part of hierarchy tied to the party in power, but with a large degree of local autonomy, especially on the *municipio* level. One of the main functions of the CDS was to identify and carry out development projects with varying degrees of outside assistance. Many of the projects were designed to improve school infrastructure, provide nutritional supplements, and increase school attendance.

In addition to the CDS, local communities and urban neighborhoods also organized *Movimientos Communales* to carry out specific project and to support the goals of the revolution. The *brigadistas* were a product of such local action groups and have become well known for their work in immunization campaigns and other health related activities. Today, there are an estimated 15,000 *brigadistas* still active in their communities or local urban neighborhoods. Of this total, about 10,000 are associated with the *Movimientos Comunales* and the remaining 5,000 are associated with Catholic Action groups and other non-governmental organizations.

The change in government from the FSLN to UNO has resulted in a number of alterations at the community level. These changes vary by *municipio* and individual communities within *municipios*, and are very much related to what party holds the mayor's office. One trend that was observed virtually everywhere visited was that the *Comité de Defensa Sandinista* had been transformed to an arm of the local office of the FSLN and a new organization, the *Comité Comarcal*, has taken its place. In terms of the community and the local school, the *Comité Comarcal* appears to have taken over the design and implementation of school projects. Very much like the CDS, the role of the *Comité Comarcal* is to identify community needs and to propose local development projects. On several occasions, it was found that municipios would negotiate directly with donors to obtain financial aid for their projects,

the actual execution of which was accomplished using local volunteer labor.

Another organization which exists in some communities is the *Consejo Popular de Salud*, consisting of representatives from the Movimiento Communal, school directors, a representative from the *Alcaldía*, and personnel from the local health or medical post. This group meets at irregular intervals to evaluate health care and prevention activities and to plan new programs. Some communities also have *Juntas Vecinales* composed of residents from specific neighborhoods. This is most probably the lowest organizational level. These groups are often referred to as *Organizaciones de Masas* and are very much a product of the revolution and ten years of Sandinista rule emphasizing grassroots organizational development. Although the initial purpose of many such groups was both political as well as to provide a means for solving problems, most are now concerned exclusively with improving socioeconomic conditions, including health and education.

2. Qualitative Case Studies

The nature of municipio projects and the levels of community involvement can best be illustrated by examples from Mateares -- an urban community on the outskirts of Managua, Río Grande -- a rural community south of Rivas, and community mobilization during immunization and cholera prevention campaigns in Grenada.

a. Mateares:

Mateares is a *municipio* of about 20,000 located on the western shore of Lake Managua. It is divided into four barrios, each with an organized group of residents willing to contribute time and labor to projects administered by the Comité Comarcal. In May of 1990, the municipio's Director de Proyectos negotiated an agreement with a Canadian organization to finance 85% of the cost of installing lighting in the Escuela Pancasán. The municipio was to pay the rest, and the residents of the Barrio Brasil were to provide the labor. Included in the labor force were tradesmen with the skills to install wiring and metal grids to prevent theft of neon fixtures, fuse boxes, and the electric meter; the total cost of the project was $15,000. The lighting was needed to facilitate late afternoon and evening classes for both adult education and accelerated primary school for adults.

During the summer of 1990, another project was completed in Mateares. It consisted of the construction of two classrooms and an office as an addition to the existing school to be used for a pre-school in the Barrio Alfonso González. The total cost of $7,000 was met in-part by the French, the rest was raised by the municipio from local tax revenues, and the requisite skills and labor were provided by neighborhood residents.

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Community participation was high for both projects. The Director the Proyectos estimated that about 80% of the neighborhood residents had participated to some degree, but added that Mateares residents were more motivated and willing to work than those living elsewhere. He felt that as long a financing could be found for materials, the community is organized to contribute skilled as well as manual labor.

b. Río Grande:

The situation encountered in Río Grande, a rural community about 15 kilometers southwest of Rivas near the border with Costa Rica, was in sharp contrast to that found in Mateares. Originally, the school in Río Grande consisted of two wooden buildings with cement floors and sheet metal roofs, housing four classrooms. The staff is made up of five teachers and one director, offering pre-school through grade six to a total of 204 students in a community of about 80 families. About a week before the beginning of the school year, one of the buildings had collapsed, reducing the number of usable classrooms to two. As a result, the upper grades were being taught in a private home and in the church until the collapsed building can be reconstructed.

The school director, who is a member of the community, has been able to obtain 4,000 bricks and 40 sacks of cement to rebuild the school, and the community is donating the necessary wood. However, the price of the carpenters and bricklayers, even when these individuals have agreed to donate a day's work each week, is prohibitive. There is also the necessity of paying for a building license in a community whose economic situation was characterized by one resident as "Aqui no hay ni para morder."[4]

c. Grenada SILAIS:

The Grenada SILAIS has had the largest number of cholera cases in Nicaragua and has been at the forefront of MINSA educational campaigns to retard the spread of this virulent disease. Other activities involving massive mobilization of personnel were the two immunization campaigns (February 22-23 and May 16-17, 1992). Both cholera prevention and the immunization campaigns involved community residents, their organizations, and community health workers, and serve to illustrate the level of participation to be expected in future health interventions requiring large-scale mobilization.

The CHWs were considered key to community involvement in the first immunization campaign to assure high coverage, especially for children under one. Unfortunately, many of the them had not participated in any health activities for several years and did

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[4] "Here there is nothing to chew on."

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not respond as first anticipated. As a result, the campaign missed many children. The second campaign, however, was quite different, and most of the CHWs helped identify children to be immunized. As a consequence, coverage rates were much high, about 80%. This experience suggests that community health workers should have relatively frequent contact with the health delivery system in order to be effective community mobilizers.

The CHWs proved invaluable during the cholera emergency declared in Grenada on May 10, 1992. In order to educate residents on cholera prevention and to distribute sanicloro and ORS packets, teams of CHWs had to visit all homes in the communities and urban neighborhoods as part of a campaign known as *Operación Barrido*. Without help from the CHWs in notifying residents of the dangers from cholera and making sure that everyone received the necessary information and supplies, the coverage of the campaign would have been considerably reduced.

The SILAIS staff have also used community health workers in two neighborhoods to deliver cholera advice and supplies and to immunize children at the same time. Furthermore, local health workers have reported that the CHWs have been quite effective in referring patients to the appropriate health care facilities, complete with a hand-written referral slip. Many community health workers have expressed a desire for more training and want to learn more about curative procedures, especially how to do injections; at present, they can only administer oral polio vaccines. The SILAIS is planning to provide more extensive training for the CHWs; training to perform injections is contemplated, but the emphasis will continue to be on preventive activities. The SILAIS director feels that being able to inject will allow the CHWs to administer immunizations more frequently and reduce the reliance on periodic campaigns.

d. Tipitapa SILAIS:

In Tipitapa, visits were made to the Municipal Health Center and SILAIS Headquarters, Puesto Medico El Barrio, Puesto Medico Sendeno, and Puesto Medico Maderas. The health center, Centro de Salud con Camas "Yolanda Mayorga," consisted of a maternity unit with a labor room, a delivery room with two incubators, and a post-partum room with five beds; an emergency room; a cholera unit where all patients with diarrhea were seen; a dental unit; and maternal/child health facilities with an oral rehydration unit, immunization unit, and growth monitoring facilities. This observer was given a tour of all the facilities and noted the general lack of equipment and sufficient space to provide adequate services.

The Puesto Medico El Barrio is located in an urban sector of the city of Tipitapa and is staffed by a single physician and an assistant who has no formal training. The doctor works closely

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with the CHWs in the community. There are about 30 CHWs, 20 of whom are very active. (The rest participate in vaccination campaigns and cholera prevention activities.) About 60% of the CHWs are young (mostly female); the rest are housewives. They have been very helpful convincing residents to build latrines and to properly dispose of household garbage. The neighborhood has about 5,000 residents and the doctor estimated that about 60% come to the puesto. The most common illness is some form of acute respiratory distress, followed by diarrhea and urinary infections; about 40% of children under 5 are either at risk or are malnourished.

A visit was also made to a *Casa Base* maintained by one of the community health workers. This house serves a center for advice and, if necessary, referrals to the puesto or center in Tipitapa. This volunteer worker has received training in the form of two brief workshops supported by the social security institute. Most of her activities are preventive: she gives advice on the importance of breastfeeding and tells people when they should go to the doctor. The only medicines she dispenses are ORS, aspirin, and cloro for cholera prevention. The worker expressed a strong desire for more training, especially in first-aid procedures and anything else to better help the doctor at the puesto medico.

The puesto medico in Orante Sendeno is located in a small room which is part of a private home. The owner has lent the room free of charge. When it rains, patients are allowed to wait in the living room. The puesto is attended by a young physician who has been working there for about two months. He is assisted by two CHWs who between them are present whenever the puesto is open. Both CHWs are in secondary school and have been trained by the doctor. The reason he uses CHWs is that no auxiliary nurse has been assigned by MINSA to this puesto, but he seemed very satisfied with the work done by the two young women.

The only rural puesto medico visited is located in the Centro Comarcal Maderas, a part of the municipio of San Benito. This post is also attended by a young physician who has been working there for three months; he has also trained a community health worker to be his assistant. The community has 23 CHWs. Each operates a *casa base* where they identify children for growth monitoring and mothers for pre-natal check-ups; they also evaluate the nutritional status of community residents. There are also six *parteras* (traditional midwives) in the community who are most often the first resource that women seek when pregnant. These *parteras* refer such patients to the puesto for pre-natal exams.

The doctor in this puesto asks each patient for a voluntary contribution of three Cordobas but only if they can truly afford it. He takes in somewhere between 100 to 200 Cordobas per week

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and sees about 180 patients weekly; about one-third of the patients make contributions. The money is used for his own meals, transport, cleaning of the puesto, supplies, and a modest stipend for the CHWs. Since his coverage area includes numerous remote rural communities, the income is essential for making weekly visits for educational talks on disease prevention and environmental sanitation.

In summary, the organizational structure in many communities, both urban and rural, is highly varied and undergoing a period of change and subsequent restructuring. The most basic organizational features consist of a community development organization as part of the mayor's office and a parents' organization associated with each school which is re-established at the beginning of every school year. The degree of cooperation between health care personnel, the school, community residents and the *municipio* is highly variable and must be examined on a *municipio* by *municipio* basis.

D. Family Structure

No reliable information on the nationwide distribution of family size and composition was found for this SSA. Due to the reincorporation of the former resistance fighters ("contras") combined with a general demobilization of the army, data from the early and middle 1980s are of limited utility. The overall concern of this section is therefore to make a broad estimate of the relative proportion of families with both parents co-resident versus only the mother and her children, and to relate the variation in family structure to the special needs of the most marginal sectors of Nicaraguan society, single-parent families. The only available data based on a large-scale survey are from a study[5] of the population of metropolitan Managua. When combined with observations from visits to urban and rural communities in all six regions, a fairly comprehensive picture does emerge.

Based on data from the study cited above, there is a striking difference between the structure of families able to meet their basic necessities versus those that cannot. The number of female headed households is significantly higher for the poor. That number increased significantly between 1985 and March of 1989, and even more during the eight month period between March and December of 1989 as shown in Table H-3 on the following page.

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[5] "Caracteristicas de los Jefes de Hogares y La Pobreza en la Ciudad de Managua," Dirección General Nivel de Vida, Secretaría de Planificación y Presupuesto, Ministerio de la Presidencia y el Fondo de las Naciones Unidas para Actividades de Población (FNUAP), Managua, Agosto 1990.

Table H-3: Percent Male and Female Heads of Households: 1985-1989

	1985			March 1989			December 1989		
Sex:	Total	SBN[6]	Poor	Total	SBN	Poor	Total	SBN	Poor
Men:	69.2	71.3	66.4	71.1	73.4	68.4	65.8	71.7	58.8
Women:	30.8	28.7	33.6	28.9	26.6	31.6	34.2	28.3	41.2

Source: SPP 1990

In 1985, the proportion of male- in relation to female-headed households was approximately two-thirds versus one third, respectively. The number of female-headed households was only slightly higher among those classified as poor. By March 1989, the number of female-headed households in the general population had decreased to 28.9%; for the poor it had decreased to 31.6%. However, a startling increase in female-headed households took place between March and December of 1989 when the percentage rose to 34.2% for the total and a high of 41.2% for those classified as poor. There is no way of knowing if this trend has continued at the same rate, decreased or increased since then, but if the deteriorating economic situation can be considered as a factor leading to greater family instability, then the current percentage is most likely higher. On the other hand, returning contras and demobilized soldiers could possibly reduce the number of matrifocal families somewhat.

The data discussed above are only from Managua, where about one-third of the Nicaraguan population lives. But visits to both urban and rural communities in other parts of the country support the hypothesis that the number of female heads of households is quite widespread and, in all probability, is increasing in most regions. For example, in a meeting with 75 mothers in the city of Juigalpa, about one-half indicated that they were single mothers struggling to work and maintain their households. A number of mothers said that the fathers of their children were forced to leave in the search of jobs but had promised to return. Few, however, expressed much confidence that they would come back any time in the near future.

Another case in point comes from a visit to a rural community named Las Mercedes, located about half-way between León and Chinandega where a meeting with 18 mothers was held. These mothers also indicated that at least one-third of the households in their community were headed by single females ("madres-padres"). The president of the local *Consejo Consultiva de*

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[6] "SBN" is the percentage of households able to satisfy basic needs as defined above.

Padres de Familia thought the number was even higher. At a rural school in Río Grande, near Rivas, five of the mothers present said they were madres-padres; a teacher at the school indicated that the number was in reality much higher. Many of the single mothers may have been reluctant to identify themselves.

Clearly, both the 1989 survey of Managua households and the ethnographic data indicate that the number of matrifocal families in Nicaragua comprises a large portion of the total number of households, and that this percentage is increasing. Only a new nation-wide socio-demographic survey or a full-scale national census will be able to show the distribution of matrifocal households with any degree of statistical validity.

E. Indigenous Peoples and Special Populations

Special populations consist of two major groups. The first are the indigenous peoples and minority ethnic groups who live in the eastern part of Nicaragua and along the Atlantic Coast. The second includes the large numbers of demobilized contra and Sandinista soldiers and their families and an unknown number of refugees who are returning to their homes. Most of the second group have settled in the northeast areas of the country around Matagalpa and a little farther south in Juigalpa. The two groups have different problems and health service demands.

1. Eastern Nicaragua and the Atlantic Coast

Nicaragua's indigenous and minority populations live mainly in the eastern two-thirds of the country, especially along the Atlantic coast and in the Río San Juan and Río Coco regions. The exact number of each of the ethnically and linguistically distinct populations is unknown, but experts who are familiar with the region make the following estimate:

Table H-4: Indigenous and Minority Populations

Linguistic Group	Estimated Population Size
Miskito	75,000
Creole	6-9,000
Sumo	27,000
Rama	5-800
Garífona	under 500

Source: Programa Educativo Bilingue Intercultural (PEBI)

These figures should only be seen as a very broad and speculative estimate. This region, more than any other in Nicaragua, has

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undergone extensive displacement of large populations as a result of the war and unknown rates of migration for both economic and other reasons. Many refugees have returned, but no accurate count exists, and attempts to estimate the size of the current population are complicated by high birth rates. An estimate of about 125,000 would represent approximately 3% of Nicaragua's population, but it would not be unreasonable to conclude that these figures are low.

The political history of the Atlantic coast has been one of turbulence and alienation from the rest of Nicaragua. Movements for both limited and complete autonomy go back to the end of the 19th century. Events over the past decade have reinforced the separatist organizations, and the region continues to make demands that would lead to even greater autonomy.

2. Demobilized Soldiers and Returning Refugees

According to CEPAD, a total of 47,842 soldiers had been demobilized from the Sandinista army as of May 1992, while 19,720 contras and 53,349 family members (including a large number of school-age children) had been repatriated. In addition, there were 389,000 families who were displaced from areas of intense fighting now in the process of returning to their homes. The total number amounts to 509,000 individuals, representing about 13% of the Nicaraguan population. These families are being resettled mostly in the northern and eastern sections of the country. In addition to land and employment opportunities, they are also demanding education for their children.

Ministry of Education (MED) regional personnel in both Matagalpa and Juigalpa reported that their primary school enrollment had increased drastically as a result large number of new families. New neighborhoods have sprung up on the outskirts of both cities, many rural communities have expanded, and a number of new settlements have been established. No one could give an exact number of new residents in cities or countryside, but they were painfully aware of the increased pressure on their educational facilities and staff.

In Juigalpa, the total school enrollment in 1990 was about 50,000. For 1991, the total wanting to register for school was up to 90,000. The limitation imposed by the number and size of schools, the number of teachers, and the availability of textbooks only allowed for an increase of 5,000 students across all grades. The largest demand, however, was for the lower primary grades. Many parents in both rural and urban areas are expressing their dissatisfaction through their community leaders who, in turn, make frequent visits to both regional and municipal MED offices. Overall, the situation is tense and the demands are becoming increasingly vocal. They could become violent at any time.

3. Health and Special Populations

The indigenous groups encompass a very small percentage of the Nicaraguan population and live highly dispersed in remote areas of the Atlantic coast. This population is served by other A.I.D. projects and by projects funded by other donors; it will not be directly served by the MH/CS component of the Decentralized Health Services Project, although it will benefit from the Management and Financial Decentralization and Alternate Sources of Finance components.

Former soldiers and their families and returned refugees, on the other hand, comprise large portions of the populations in the central and northern portions of the country. These groups are demanding not only agricultural land but also access to education and health services. It would be very prudent for the DHS Project to make concerted efforts to address the health problems of these populations. Clearly, any effort to address their needs will be viewed as an attempt by the current government to provide services which that were expected when hostilities ended.

III. Project Components: The Social Consequences

This section examines the planned project interventions in terms of how community residents, both urban and rural, will benefit from decentralized health administration, integrated service delivery and efforts to contain and recover costs. The analysis is based on field visits described above as well as the current social and economic conditions in Nicaragua.

A. Maternal Health and Child Survival Activities

The highest priorities of this component of the project should be to train SILAIS personnel, especially at the lowest service delivery levels, and to involve community organizations and residents as much as possible. Previous projects in other countries as well as Nicaragua have paid lip-service to community involvement, but because of highly centralized structure, have not been able to involve community residents in any substantial and meaningful manner. With the relative autonomy of the SILAIS, it is expected that local communities will become active participants in the identification and prioritization of health needs and be involved in both training and implementation of project activities.

The most important community resource as far as community-level service delivery and health promotion is concerned is the community health worker. As stated elsewhere, Nicaragua has some 15,000 CHWs working in both urban and rural areas. The case studies described above indicate that, for the most part, the CHW is an invaluable resource already involved in immunization

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campaigns, cholera prevention, and other promotional activities. All the CHWs interviewed for this SSA expressed strong desires for additional training and continued involvement in health care. Consequently, it should not be problematic in any way to provide further training for the CHWs and, in a sense, convert them into health promoters.

In addition to the community health worker, the traditional birth attendant (TBA) or *partera* is another important local resource to be trained and involved in the project. According to a recent study by UNFPA, estimates are that the *parteras* attend approximately 65% of births, and that they are also the first health care resource sought by pregnant women. The *parteras* are generally older women who train their daughters to follow in their footsteps, but a few men also enter the practice of midwifery. Less is know about midwives than about CHWs, but anecdotal accounts indicate that as a group they are interested in receiving additional training and want to collaborate with MINSA services and personnel.

In the past, the community health workers have been closely associated with the FSLN and have, in effect, been selected and supported by the *Movimientos Comunales*. After the change in government, a substantial number of CHWs opted not to cooperate with the new MINSA and municipal authorities. But as the case studies have shown, the passage of time and the enormity of health problems have persuaded a large, but undetermined, number that it is best for everyone to cooperate and work together, regardless of political affiliations. Anecdotal accounts by SILAIS personnel strongly support this view, leading to the conclusion that the CHWs should receive additional training and be an integral part of this project's stated goal of strong community coordination and involvement.

1. Training: Auxiliary Nurses, CHWs, and Traditional Birth Attendants

During the project design team's visits to Grenada and Tipitapa, it was apparent that many Health and Medical Posts lacked auxiliary nurses. This deficiency was made up, in part, by volunteer community health workers trained by the attending physician. The nature of the training varied according to the individual view and priorities of the doctors, particularly in terms of the scope of the curative-preventive mix and the level of autonomy and responsibility given to the CHWs. Clearly, the project, in collaboration with MINSA, needs to establish norms stating the nature and range of activities and services to be provided by auxiliaries and CHWs. Once norms have been agreed upon, it is crucial that training materials such as manuals, posters and pamphlets be designed to take into consideration the relatively low level of literacy in these groups, and that training seminars be carried out by personnel experienced in

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providing appropriate and practical training to auxiliaries and CHWs.

In addition to the specific medical and promotional content, the training courses should include a section on traditional medical beliefs and treatments in Nicaragua. These beliefs and practices are widespread, and often determine whether or not a mother will seek modern medical attention, will administer her own folk remedy or seek out the services of a traditional healer. Folk diseases prevalent in Nicaragua include empacho, caída de mollera and calor, to mention only a few. For example, mothers who feel their children are afflicted by one of these diseases quite often believe that modern medicine cannot be used as a treatment but that traditional remedies are the most appropriate.

The inclusion of folk medicine in the training curriculum will allow auxiliaries and CHWs to integrate both modern and more traditional beliefs and make credible explanations to local residents. This is especially important with respect to beliefs about the nature of diarrhea and upper respiratory infections. Furthermore, there are a large number of traditional treatment which are not harmful, but do, in fact, provide benefits (e.g. giving herbal teas to children with diarrhea).

A number of recent studies have been made of folk medicine in Nicaragua to identify beliefs and practices in different regions of the country. Their focus has been to identify beliefs about diarrheal disease, acute upper respiratory infections, and malnutrition in children under six. The study has been carried out by the *Centro Nacional de la Medicina Popular Tradicional* (CNMPT) in communities surrounding Granada and Rivas. Project staff should review the findings of this study as well as others and incorporate relevant concepts into the training curricula. Local SILAIS personnel, in conjunction with CHWs and parteras, should help identify which beliefs and practices are prevalent in their service areas. Training curricula should then be adapted to suit local variants.

Another issue bearing on training and the use of community health workers and midwives is the process of selection. Clearly, not all CHWs and midwives will want to receive training, and perhaps not all who do want to participate should be included in the group. Criteria for selection should be developed to insure minimal levels of literacy and a willingness to adhere to specific project objectives. It should not be difficult for Health Center and Medical Post personnel to review all candidates and determine who should be invited to participate. Every effort should be made to emphasize the promotional and educational functions of the project and to make clear that there is no political agenda, overt or hidden.

2. Information, Education, and Communication (IEC)

The IEC subcomponent of the project will be one of the most important, but also most difficult to implement and evaluate. Its objective should be to provide appropriate and understandable messages that will increase knowledge about disease prevention and stimulate appropriate behaviors when someone is ill. The challenge will be to design meaningful and credible messages that will result in changes in behavior, and to select the most effective channels of communication.

Generally, means of communication are divided into the use of mass media -- radio, TV, and print media -- and interpersonal channels such as home visits, local assemblies, and promotional talks at health care facilities and in schools. The best strategy is generally believed to be a combination of mass media and interpersonal channels. Radio and TV often are often kept on continuously and form part of the general background noise, and people only pay attention when programs of special interest are being broadcast. Consequently, the effective use of mass media for health education is dependent on having data on listening habits and the time of day that particular programs are broadcast. In other words, if a media campaign is going to be used as part of this project, these data should be obtained first. The ongoing Family Health Survey will provide useful information on viewing and listening patterns.

For this project, the best communication and education strategy is to have community health workers visit homes on a regular basis and address existing community organizations such as mother's clubs, *Consejos Consultivos de Padres de Familia* (parent teacher organizations), and other neighborhood and community organizations. The site visits gave a strong indication that the CHWs are well respected and that residents give a considerable amount of credence to what they say. Also, the CHWs should be trained in how to assemble specific groups of residents for certain kinds of health education, e.g., immunization reactions and what to do when they occur.

The educational messages should focus on basic concepts such as the danger signs indicating moderate to severe dehydration from diarrhea and the significance of fast breathing and chest-in-drawing when young children are have acute respiratory distress. Educational programs should take into account the fact that people simply may not know what dehydration is and that the criteria for fast breathing may vary considerably from region to region. The design of health education should take into account what is known about local beliefs, and if specific information is lacking, efforts should be made to collect the relevant data.

Promotional messages which use local terminology and idiomatic expressions are much more useful than those fraught with

generalities that do not call attention to something very specific to local culture and linguistic expression. People will listen and will likely internalize and learn more effectively if they can identify with the subject matter that is being communicated. Phrasing health promotion and disease prevention in terms of local beliefs, practices and vocabulary will help achieve this. Selected CHWs and *parteras* should be consulted in the design of educational strategies and in formulating messages that will be readily understood and believed.

3. Community Participation

The experience of most communities in Latin America and elsewhere has been that outside "experts" decide what their health needs are and then proceed to provide the necessary services. Local residents rarely have meaningful input at any stage of the process. This approach has frequently resulted in alienation and, at times, open hostility. Since community participation is an objective of this project, community members must be involved from the very outset of activities.

The first stage of involvement should be in the assessment of needs and priorities and the selection of interventions. The Italian Development Agency, Cooperación Italiana, has considerable experience in establishing what they call a *mapa de riesgo* (risk map). This is prepared through a cooperative effort between residents and agency personnel to map all aspects of community infrastructure, resources, and behavior patterns that weigh on the quality of life. This methodology seems to have been quite successful and should be adapted for use in the implementation of this project.

Community leaders should be involved in the selection of community health workers and parteras to be trained by the project, and attempts should be made to maintain a political balance in communities or neighborhoods with significant factionalism. Under-representation of any one group could lead to a portion of the population not receiving their share of services and promotional messages.

Communities that have played an active role in design and implementation can also be counted on to help identify problems and to make necessary modification to overcome difficulties, particularly when it comes to health workers or *parteras* who are not performing adequately. Also, involved communities will be forthcoming when the quality and effectiveness of services and promotional efforts are to be evaluated. Local residents and their leaders will tend to be more forthcoming and honest when it comes to constructively criticizing something they have helped create and would very much like to see succeed. Of course, there is always the possibility that significant problems will be

overlooked when trying to put the best possible light on their own role and participation.

B. Management and Financial Decentralization

The most important aspect of MINSA's ongoing decentralization of its administration and services is that each individual SILAIS will, in theory, be more responsive the perceived conditions and needs in its service area than was the former regional structure. The delivery of services, both curative and preventive, will be planned and implemented by the local SILAIS staff in conjunction with input from their Health Centers and Posts. This will allow each SILAIS to have the decision-making power to improve efficiency at the local level, analyze the health status of its service area, and design an implementation plan based on the prioritized needs and demands of the local population.

From an administrative viewpoint, the first activity that must be carried out by each SILAIS is a study to determine the nature and extent of the population at risk and to allocate available resources. To do this, each SILAIS must be able to collect, process, analyze, and interpret basic demographic data, specific morbidity patterns, and the demand for specific services. Since there are not enough resources and personnel to address all problems, priorities must be established and plans made to provide personnel training, health education, and integrated intervention strategies. The project focus on MH/CS will cover a major portion of the current demand for health services.

The analysis of the conditions in each SILAIS will involve not only the determination of epidemiological profiles but also an examination of economic conditions, social and political organization, and the human resources available in each community. This effort should identify the following:

- community organizations -- *comités comarcales, juntas vecinales, movimiento comunal*, etc.;
- religious organizations -- *comunidades eclesiásticas, cristianas de base, adventistas, evangélicas, moravas*, etc;
- business enterprises and union organizations -- professional organizations, health-worker unions, business associations, cattle ranchers, and agriculturalists;
- non-governmental organizations, international, and national organizations working in the SILAIS service area;
- other state institutions -- the Ministry of Education, the National Social Security Institute, the Nicaraguan Water Supply Institute, the Nicaraguan Energy Institute, the

National Agricultural Research Institute, the Ministry of Agriculture and Livestock municipal governments, etc.;

- productive enterprises—public, private, and cooperative;
- political parties and autonomous institutions -- schools, universities, training organizations.

Once the principal actors and organizations have been identified, planning meetings should be held with all interested parties to explore how each could contribute and assist in the diagnostic assessment. It would not be unreasonable to expect these organizations and/or groups to provide any relevant information they already have, financial contributions for assessment implementation, and personnel to help complete planned activities. Once these meetings have been held and resources committed, a concrete and detailed plan can be made to assess the health needs and conditions within the SILAIS.

The case studies presented above and the background analyses of political and community organization indicate that, in spite of some political factionalism, there is an adequate institutional infrastructure at the municipal, urban neighborhood, and rural community levels to provide extensive support to the SILAIS administration and their activities. Moreover, timely involvement of local organizations would be instrumental in formalizing the involvement of relevant sectors in the delivery of MH/CS services, promotional and educational activities, and in the initiation of cost containment and recovery mechanisms.

Administrative decentralization of MINSA, and the subsequent autonomy of each SILAIS, will be essential for the tailoring of specific services and interventions to the particular needs and special circumstances encountered in different parts of Nicaragua. A single vertical approach administered from MINSA in Managua could not respond to local variations, especially in areas with severe medical and economic problems involving large numbers of decommissioned soldiers, recently returned refugees and their families with young children.

C. Alternate Sources of Financing

At first sight, the depressed Nicaraguan economy, malnutrition, and high percentage of the population living in poverty would seem to preclude any attempts at cost recovery for the provision of health care. In addition, MINSA is prohibited from charging fees for its services, and any contemplated changes in this practice would, under the current political conditions, be potentially explosive. One merely needs to look to the Ministry of Education and the tenuous balance between the Minister and the Sandinista-led teachers' union to conclude that the FSLN will openly attack anything that can be interpreted as an erosion of

the people's "inherent" right to free education and health care. Even a small fee charged for textbooks initially caused protests by parents and Sandinista-affiliated unions.[7]

Regardless of poverty levels, people do devote a significant part of their scarce resources to purchase medical services and medicines. The relative amount, however, is not known. In Nicaragua most people go directly to pharmacies, describe their symptoms, purchase one or two doses of a medicine, keep taking it until the symptoms are gone, and then stop. This is clearly an inadequate solution. Frequently, it leads to recurrence of the disease or to other problems if improper medication was used. Moreover, most pharmacies are not staffed by trained personnel and are primarily motivated by profit.

In the public sector, one Medical Post was (as described above) observed requesting voluntary contributions for services, and about one-third of the patients did contribute. Officially, this violates MINSA regulations, but it responds to a chronic lack of funds for even the most basic services and equipment to operate a Medical Post. The willingness of patients to contribute indicates that introducing fees for services should be explored.

Prior to the experimental institution of any fee structure, complete with the corresponding changes in the legal codes, an extensive study should be made of the demand for health services to determine actual expenditure patterns in relation to relative socioeconomic status. Data should also be collected on the hierarchy of resort in terms of where and in what sequence people seek medical care for a wide range of diseases. Studies in Mexico have shown that most people, even in the lowest classes, display rational decision-making when seeking health care. Factors that weigh most heavily on decisions are perceived seriousness, time away from work to seek treatment, cost, and the relative status or prestige of the health-care provider. Cost and seriousness appear the be the most significant determinants.

The Family Health Survey now underway should provide some of the needed data, but additional studies are necessary to get a more complete picture of demand. The following section discusses a number of methodological issues relevant to demand and other research issues.

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[7] Nonetheless, a considerable amount has been collected and is being used to buy more textbooks.

IV. Assessments, Diagnostic Studies and Research: Methodological and Human Resource Issues

Numerous components of the Decentralized Health Services Project need additional data in order to design training materials, health education strategies, and to explore means of cost containment and cost recovery. Prior to beginning any research or assessments, efforts should be made to determine exactly what kind of data are needed, how the data can be shared for planning, implementation, and evaluation, and what methodologies would be the most appropriate and cost-effective.

In recent years, large-scale surveys have become very popular and have been used to provide a wide range of baseline information; knowledge, attitudes and practices surveys (KAP) have been the most widely used. As a word of caution, surveys very often do not give reliable data on real attitudes and behaviors, but instead gather information the respondents think the interviewers would like to hear. Moreover, there are extensive problems of design, sampling, questionnaire construction, and analysis which make quantitative surveys a long and costly process. On the other hand, qualitative methods using focus-group techniques, in-depth interviews, and semi-structured protocols can gather more reliable data in much less time at a fraction of the cost of a survey.

Qualitative methods would be ideal for investigating health care behavior and the specific beliefs people have about important concepts such as dehydration, immunization reactions, fast breathing, and illness classification. Qualitative studies can be done by a small number of trained investigators who spend 4-5 days in a community or urban neighborhood doing in-depth interviews with mothers, midwives, community health workers, and community leaders. The key to successful qualitative research is the use of well trained personnel who can gain the confidence of local residents, perform in-depth interviews, take accurate and detailed notes, and with some technical assistance perform content analyses to create data reduction matrices. Such matrices facilitate showing variation in beliefs and practices with and between communities.

Gathering data on forms of speech and local idioms lends is ideal for qualitative ethnographic methods. Carefully prepared interview protocols allow all investigators to gather data on local illness terminologies and idiomatic expressions used to discuss symptoms, beliefs, and appropriate treatment behaviors. Information from different communities can then be tabulated and examined to identify the range of linguistic variation to facilitate the design of promotional messages.

Qualitative techniques can also be used to measure the impact of project intervention on small populations, such as a rural

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community or an urban neighborhood. Community health workers can be trained to conduct relatively brief interviews of residents' most recent illness episodes and to fill out checklists to quantify medicines purchased, ORS used, and a wide range of other activities. It should be the responsibility of the local Medical or Health Post to gather this data on a timely basis and to assist with tabulation. This would provide an inexpensive and rapid method of assessing specific project interventions. For example, mother's understanding of breathing rates could be investigated after ARI promotional efforts have been made.

Prior to deciding on a specific mix of research methodologies, the literature on research methods in development and the social sciences should be examined. Short-term technical assistance on the selection and training in the use of specific methods would help prevent unnecessary, costly, time consuming and redundant research efforts.

V. Project Benefits for Females

Households headed by single females are increasing at a rapid but unknown rate in Nicaragua. These women not only have to perform household duties but also most provide an income to sustain themselves and their children. In all likelihood, these households are the poorest, and the most affected by malnutrition and high morbidity rates due to acute respiratory infections, diarrheal disease, and a host of other illnesses.

Children living in matrifocal households are often left in the care of relatives and older siblings while mothers are out working. Data from other Latin American countries indicate that many mothers in depressed economies participate in market activities taking them away from the home for days at a time. Children in these households probably form a significant part of the population that does not actively seek modern health care. DHS should make special efforts to identify these high risk households.

Community health workers and *parteras* should be trained to identify matrifocal households and make sure that pregnant women come to health care facilities for prenatal exams and tetanus immunizations, and that children from such households receive growth monitoring and nutritional evaluations. Careful records should be kept of these households and repeated home visits should be made to make sure that both mothers and children are seen at the local MINSA facility.

It would not be unreasonable for the project to assign to one member the responsibility for all efforts regarding female access to health care services and promotional activities. It is a simple matter to make stipulations in the planning stages of a

project such as this, but during the long implementation process, gender issues could easily be forgotten. Mandatory activity reports would alert the Chief of Party of the long-term TA team and his/her MINSA counterpart to potential problems needing of alternative or corrective action.

VI. Social Consequences and Benefit Incidence

As the Decentralized Health Services Project is implemented the following objectives are to be reached: reduction of diarrheal disease, malnutrition, perinatal mortality and acute respiratory infection; increased immunization coverage, contraceptive prevalence, and use of preventive services; and the maintenance of breastfeeding to six months of age in both urban and rural areas.

The cumulative consequences and benefits of a healthier population are obvious, but one of the most important is that healthier children will increase school enrollments, reduce drop-out rates, and improve achievement. As noted above, stunting is a serious nutritional problem in the school-age population, resulting in inability to concentrate and decreased aerobic activities; a reduction in stunting should increase the number of primary school graduates, and these graduates should have higher achievement levels. Under ideal conditions, more of these graduates will go on to secondary and specialized trade education. This will eventually result in a better educated and more skilled Nicaraguan labor force.

Assuming that the current decade will bring economic growth to Nicaragua, the healthier and better educated population will become part of and continue to sustain growth, particularly in terms of greater labor productivity. The overall effects would be improved rural and urban incomes and living standards.

ANNEX I: ENVIRONMENTAL ANALYSIS

INITIAL ENVIRONMENTAL EXAMINATION

Project Location	:	Nicaragua
Project Title	:	Decentralized Health Services Project
Project Number	:	524-0327
Funding	:	$22,000,000
Life of Project	:	5 years (FYs 1992-1997)
IEE Prepared by	:	Leon S. Waskin Project Development Officer USAID/Nicaragua

Recommended Threshold Decision:

A. Project Description:

The purpose of this project is to improve the management and increase the effectiveness of Nicaragua's public health resources, and to explore and encourage alternative financing to the sector. To achieve the purpose, the project will provide technical assistance, training, and medical and administrative support equipment to the Government of Nicaragua's Ministry of Health (MINSA).

Since project activities are limited to these inputs, they will not directly affect the environment. They consequently qualify for a categorical exclusion according to Section 22 CFR 216.2 (c) (2) (viii), "Programs involving nutrition, health care or population and family planning services except to the extent designed to include activities directly affecting the environment (such as construction of facilities, waste water treatment, etc.)".

B. Recommendation:

As assistance to MINSA in the areas planned will not directly affect the environment, it is recommended that no further environmental study be undertaken and that a "Categorical Exclusion" be approved.

Concurrence: Mark I. Silverman
Acting Director,
USAID/Nicaragua

Date: 9/4/92

Drafted: PDIS:LSWaskin:
Cleared: PDIS:LOdle:
GDO:LAyalde: (draft)
ARDO:RConley:
A/DDIR:RLayton:

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U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

LAC-IEE-92-52

REQUEST FOR CATEGORICAL EXCLUSION

Project Location	:	Nicaragua
Project Title	:	Decentralized Health Services
Project Number	:	524-0327
Funding	:	$22 million
Life of Project	:	5 years (FY 92-97)
IEE Prepared by	:	Leon Waskin, USAID/Nicaragua
Recommended Threshold Decision	:	Categorical Exclusion
Bureau Threshold Decision	:	Concur with Recommendation
Comments	:	None
Copy to	:	Janet Ballantyne, Director USAID/Nicaragua
Copy to	:	Leon Waskin, USAID/Nicaragua
Copy to	:	Ralph Conley, USAID/Nicaragua
Copy to	:	Liliana Ayalde, USAID/Nicaragua
Copy to	:	Lawrence Odle, USAID/Nicaragua
Copy to	:	Jim Hradsky, LAC/DR/CEN
Copy to	:	Wayne Williams, REA/CEN ROCAP
Copy to	:	Diane Ponasik, LAC/CEN
Copy to	:	IEE File

James S. Hester Date SEP 10 1992

James S. Hester
Chief Environmental Officer
Bureau for Latin America
and the Caribbean

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ANNEX J: NPD APPROVAL MESSAGE

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR/LAC

FROM: LAC/CEN, Stacy Rhodes

SUBJECT: Review of FY 1993-94 Action Plan for Nicaragua

Action Requested: Approval of the Nicaragua Action Plan for 1993-1994

Discussion: The FY 1993-94 Action Plan Review for Nicaragua was chaired by AA/LAC James Michel on January 21, 1992. The Mission was represented by Director Janet Ballantyne and Program Officer Todd Amani. AA/LAC opened the review with strong words of praise both for the extraordinary performance of Nicaragua during its first year of economic stabilization, and for the excellent support the Mission has provided for these achievements under the leadership of Director Ballantyne. AA/LAC underlined the challenge and frustration of working with this newly democratic country of the verge of economic growth at a time when foreign aid resources are shrinking within the region. The consensus of the review was that A.I.D. must continue to support Nicaragua's efforts toward economic growth while recognizing the reality of today's foreign assistance budget.

ISSUE: Is it appropriate for USAID/Nicaragua to be working towards seven strategic objectives as described in the Action Plan? Given possible cuts from planned funding levels, what priorities should be applied to budgetary decisions relative to the new starts/amendments programmed for FYS 1992-94 (particularly those funded with ESF)?

DECISION: The Mission should not include increased participation in the economy as a separate strategic objective but rather track performance under this theme within the context of increased competitiveness and diversification of the economy. While A.I.D. would like to see Missions focusing scarce resources on fewer objectives, the Bureau recognizes the special circumstances of this new and very visible program and therefore approves six strategic objectives for the Nicaragua program. The AA/LAC expressed disappointment with the low level of multilateral and other bilateral donor support that appeared available at this point in time. As U.S.G. resources appear to be declining in the region, additional IFI funds will be needed to sustain the stabilization process. LAC/DPP will work with STATE/ARA/ECP to review overall levels of IFI resources going to Central America in general and to focus attention on the need to increase flows to Nicaragua. Washington agencies have been asked to help in the process of donor mobilization. In this regard the recent

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Consultative Group meeting on Nicaragua represented a very positive effort at increasing other donor flows to Nicaragua.

ISSUE: Is LAC'S country performance rating of Nicaragua an accurate assessment of the progress achieved by the GON?

DECISION: The LAC Bureau will refine the rating process to ensure that Missions have sufficient opportunity to provide what they consider to be accurate and timely data for the decision making process. Application of the performance rating system will be linked more closely to real time budgets rather than considering current performance to determine DA levels two years down the line. The Mission is encouraged to work with DPP to ensure that the most current and accurate performance information is available for consideration.

ISSUE: Can the current planning levels for the FY 1993-94 PL-480 Title III Program ($17 million annually) be increased to meet balance-of-payments and food security needs as defined by the Mission ($25-30 million per year)?

DECISION: The LAC Bureau recommends that the commodity mix be made as inclusive and expansive as is possible; FHA informs us that currently there are no policy restrictions on including non-food commodities in the mix, and tallow has specifically been included in another program. When the Mission submits its proposal for Title III, it must make the linkage to food security regardless of commodity type. Regarding tallow specifically, FHA cannot guarantee its availability for FY 93 as the FY 93 docket will not be determined until the beginning of the fiscal year.

ISSUE: Will there be a continuing need for OAS/CIAV activities in Nicaragua? If so, what should these activities include and how will these activities be funded?

DECISION: The LAC Bureau agreed with the Mission that there may still be a need for the protection and verification services offered by CIAV after the present expiration date of June 1992. We understand an additional $3.1 million is being made available for the reduced program this fiscal year. If the GON would like to see CIAV/OAS broaden its scope beyond verification and protection services and to extend activities beyond June 1992, we believe it should explore the possibility of locating other donor funding for those efforts. Indeed, the time for a multi-donor effort at funding OAS activities is upon us and we should support a more appropriate division of burdensharing for these local programs.

PORTFOLIO REVIEW:

A. FY 1992 PROJECTS

1). Employment Generation sub-project (0301.03): Mission is granted programmatic concurrence to develop this amendment and

the Mission Director is delegated authority to approve final documentation. It is understood that this amendment is a bridge to GON/other donor financing and represents the final phase of this sub-project.

2). Decentralized Health Services (0327): Mission is granted programmatic concurrence to develop this six-year project and authority to approve final documentation is delegated to Mission Director. Project design should address the commitment of MINSA to decentralize and the possible role regions will play in the decentralization process. To avoid overlap and strengthen donor cooperation in this sector, the Mission is encouraged to coordinate closely with other donors in the health sector.

3). Public Sector Financial Management Reform Project (0330): LAC grants programmatic concurrence to the Mission to develop this three-year project.

B. FY 1993 PROJECTS

1). Economic Recovery and Development (0333): LAC agrees with the overall intent and focus of the proposal. Issues relating to policy reform agenda and implementation modalities will be revisited next fiscal year when Mission Concept Paper is reviewed. The Mission's proposal will be expected to be consistent with overall agency policy at that time.

2). Economic Policy Analysis (0339): Programmatic concurrence to develop this five-year project was granted. It is understood that INCAE will be eligible to compete for contracts under this project or other USAID activities.

3). Private Sector Support Amendment (0317): Programmatic concurrence to develop this two-year amendment was granted. It is understood that the Mission will not target micro-enterprises under this amendment, but efforts will be made to extend COSEP's membership to include smaller enterprises.

4). Legal and Regulatory Judicial Reform (0340): After completing the Judiciary System Assessment, the Mission will review the design and consider ways of supporting a transparent judicial process while clearly separating the judicial from the trade and investment agenda. Recognizing limitations on Mission staff, LAC/DI will assist Mission in project design. The Mission should consider drawing on expertise in the region wherever possible to work within a regional approach. When ready, the Mission will provide LAC with a reporting cable on its proposed design and request program concurrence from AID/W.

5). Strengthening Municipal Institutions (0341): Based on the scheduled Municipal Sector Assessment, the Mission will submit a revised NPD for AID/W review. It is understood that any Cordoba resources provided to municipalities in conjunction with this project will not be associated with A.I.D.'S ESF programs.

6). Natural Resources Non-Project Assistance (0336): Programmatic concurrence to develop this NPA activity was granted. However, due to the need to define performance conditionality more fully, and define uses of dollar and local currency resources and NPA mechanisms, a Concept Paper will be submitted for AID/W review.

7). P.L. 480 Title III Food for Development: The Mission should develop this program. The Mission was informed that local currency generated from this program may be used for budgetary support to the GON if Cordobas promote policy reforms related to food security, including nutritional issues, and agriculture sector privatization. The Mission was advised to emphasize GON/USAID efforts to design and implement a food security plan when it submits its Title III proposal to AID/W for review.

C. FY 1994 PROJECTS

1). Economic Recovery and Development II (0342): See comments under ERD I. The program will be included in the FY 1994 ABS.

2). Private Agricultural Services Amendment (0315): This amendment will be included in the FY 1994 ABS.

3). Health Care Financing NPA (0337): This NPA will be included in the FY 1994 ABS.

CLARIFICATIONS:

Clarification 1: Timing for submission of baseline data on performance indicators. The Mission will be expected to begin reporting on available baseline data and performance targets in the FY 94-95 Action Plan. At present data are still scarce in Nicaragua but the IFIs are expected to begin generating reports this year. The Mission was requested to work closely with the IFIs to avoid duplication of effort and to assess what assistance it can or should provide to the GON to aid in development of baseline data.

Clarification 2: Regional cooperation and support of regional and centrally funded projects to Mission objectives. Given the scarcity of ESF and DA and the probability that these levels will be decreasing throughout the Bureau, USAID/Nicaragua should continue to avail itself fully of any appropriate centrally funded, or regionally funded activities which support the strategic objectives of the program. Wherever possible the Mission should work to leverage other bilateral and multilateral funds as well.

Clarification 3: Reduced paperwork for project design and decentralization of authorization authority. The LAC Bureau anticipates that Handbooks 1-4 will be rewritten to reduce design paperwork. LAC will allow Missions to move directly from the NPD to the PP if the Mission Director determines that sufficient design and analytical work has been accomplished. Until DOA No.

752 is rewritten, the authority to authorize new and amended projects that have LOP funding in excess of $20 million and $30 million respectively will continue to be delegated to Mission Directors on an ad hoc basis.

Clarification 4: Mission proposes to use $2.5 million of local currency from its OE trust fund in FY 1992 to exercise a purchase option on the building it currently leases. The LAC Bureau supports this proposal. While we understand that FA/B also supports the substance of this proposal, it appears that the additional trust fund cap needed for this purpose during FY 92 will not be available. We suggest the Mission include a write-up on this in the FY 94 ABS, with emphasis on cost/benefit.

Clarification 5: USAID/Nicaragua's Internal Control Assessment noted several areas of management control vulnerability caused by lack of experience FSN staff. The Bureau encourages the Mission to continue seeking good local staff and to keep up its on-the-job and other training programs to improve their skills. Given the high priority of this program and the fact that the Mission is in a first phase of project development and implementation, the LAC Bureau has agreed to maintain USAID/Nicaragua FTES at their present level during FY 93, and will do its best to maintain that level in FY 94.

Clarification 6: USAID assistance to the Atlantic Coast region. While activities specifically targeted at the Atlantic Coast are scheduled to phase out in FY 94, USAID will continue to consider this region in all project design along with other areas of the country as appropriate.

OTHER ISSUES RAISED:

A. Democratic Initiatives: At present the Mission portfolio is aimed primarily at strengthening governance and municipal institutions. In the interests of keeping development of all institutions at an equal pace, the Mission should explore ways to deepen its democracy initiative through establishing an Administration of Justice program concurrently with these other activities. The Mission should look for ways to engage regional institutions, such as ILANUD, in this process.

Recommendation: That you approve the Nicaragua 1993-94 Action Plan review as described above.

Approved: JHM

Disapproved: _____

Date: 5/29/92

LAC/CEN:DSPonasik:5/29/92:ACTPLN.MEM

Clearances:
LAC/CEN:TC-Wagner (draft)
LAC/DR/CEN:MSilverman (draft)
LAC/DR:PBloom (draft)
LAC/DPP:EZallman (draft)
LAC/GC:GWinter (draft)
OPS/PRC:LRogers (draft)
ARA/CEN:TSmith (draft)
DAA/LAC:ASWilliams (draft)
SA-AA/LAC:KHarbert (draft)

ANNEX K:

SUMMARY OF ACTIVITIES OF OTHER DONORS

ANNEX K: Summary of Activities of Other Donors

Donor/ Activity	A.I.D.	Sweden	World Bank	IDB	Spain	Italy	Denmark	Germany
Primary Care/Child Survival	Managua Occidental & Central & Region VI	Regions I, II, & RAAS	Regions IV, V, & RAAN			Grenada & Ometepe	Rio San Juan	Managua Oriental
MIS	X			X				
HIS					X			
Administration/ Management	X	X		X				
Fees for Services	X		X	X				
Privatization of Services	X			X				
Human Resources			X					
Family Planning	X		X					
Pharmaceutical Management			X				X	
Infrastructure (FISE)	X[1]		X	X				

[1] USAID/Nicaragua's contribution to FISE, which began in FY 1990, is scheduled to be completed in FY 1993.

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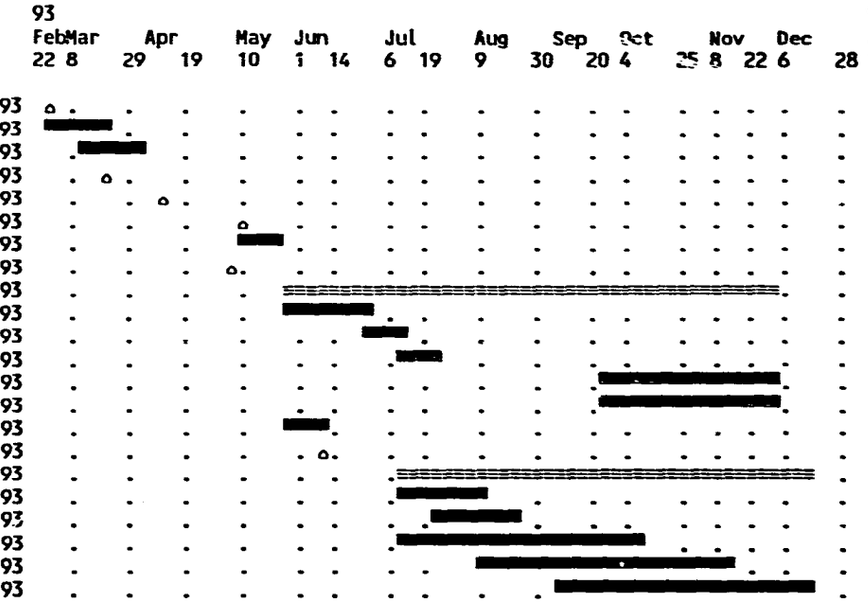
ANNEX L:

DETAILED IMPLEMENTATION SCHEDULES

Schedule Name : Accelerated Start Component
Responsible :
As-of Date : 12-Feb-93 Schedule File : ASC

Task Name	Start Date	End Date
Pro Ag Signed	26-Feb-93	26-Feb-93
PIO/T for Gray Firm	26-Feb-93	19-Mar-93
PIO/T for USPHS PASA	12-Mar-93	2-Apr-93
GON Meets Initial CPs	19-Mar-93	19-Mar-93
Issue RFP to Gray Firms	9-Apr-93	9-Apr-93
Responses to RFP	11-May-93	11-May-93
Review Responses to RFP	11-May-93	25-May-93
Sign PASA with USPHS	4-May-93	4-May-93
TA from U.S. PHS	25-May-93	1-Dec-93
Survey Commodity & TA Ne	25-May-93	25-Jun-93
Complete Commodity Lists	25-Jun-93	12-Jul-93
Place Commodity Orders	12-Jul-93	26-Jul-93
Receive Commodities	27-Sep-93	1-Dec-93
Training in Commodity Us	27-Sep-93	1-Dec-93
Negotiate with Gray Firm	25-May-93	9-Jun-93
Contract with Gray Firm	9-Jun-93	9-Jun-93
TA from Gray Firm	8-Jul-93	15-Dec-93
Survey Other Donor Activ	8-Jul-93	9-Aug-93
Human Resources Assessme	22-Jul-93	23-Aug-93
Baseline Data Study	8-Jul-93	12-Oct-93
Analyze Cost Containment	9-Aug-93	12-Nov-93
Design Fee Schedule	9-Sep-93	15-Dec-93



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Progress shows Percent Achieved on Actual ▵ Milestone
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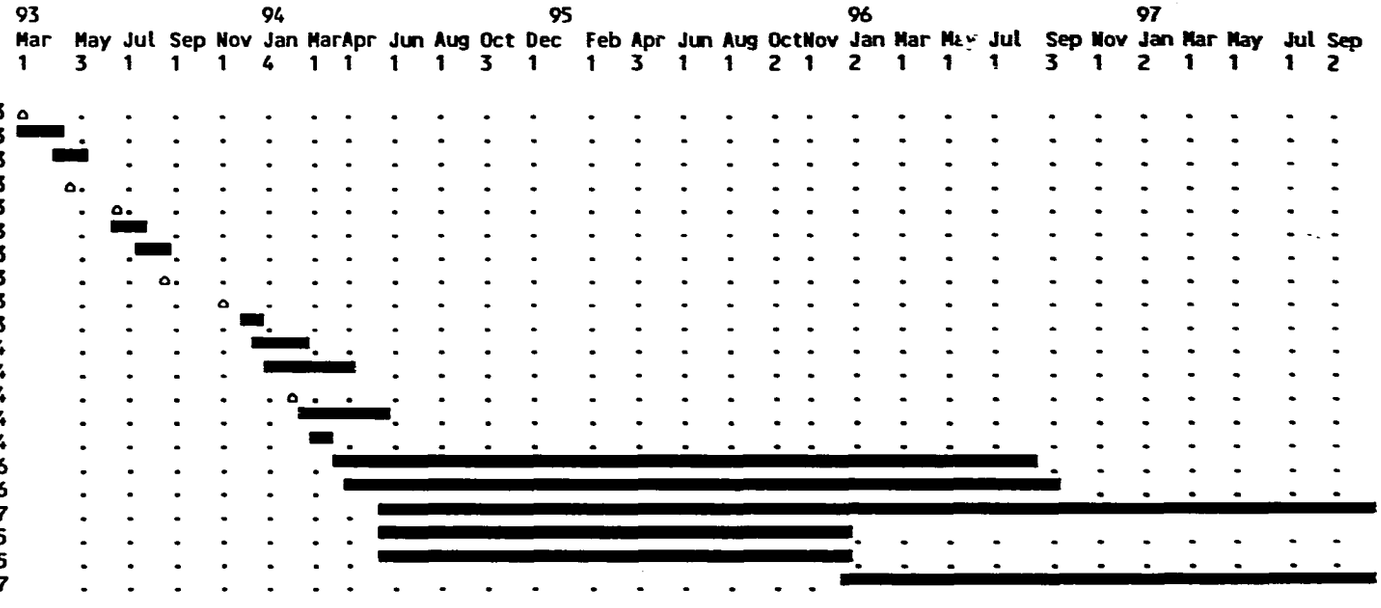
TIME LINE Gantt Chart Report, Strip 1

Schedule Name : Maternal Health and Child Survival Implementation Plan
Responsible :
As-of Date : 4-Feb-93 Schedule File : MHCS

Task Name	Start Date	End Date
Sign Project Agreement	26-Feb-93	26-Feb-93
Issue PIO/T for LT TA	26-Feb-93	9-Apr-93
Prepare and Issue RFP	9-Apr-93	7-May-93
Publish CBD Announcement	30-Apr-93	30-Apr-93
Receive Offers	28-Jun-93	28-Jun-93
Technical Review	28-Jun-93	20-Jul-93
Negotiate Contract	20-Jul-93	19-Aug-93
Award Contract	19-Aug-93	19-Aug-93
LT TA Team Arrives	22-Oct-93	22-Oct-93
MH/CS Orientation	24-Nov-93	16-Dec-93
Develop MH/CS Training Plan	16-Dec-93	14-Feb-94
Identify US Courses	4-Jan-94	7-Apr-94
Subcontract with Ad Firm	28-Jan-94	28-Jan-94
Design IEC Campaign	14-Feb-94	18-May-94
Training of Trainers	22-Feb-94	10-Mar-94
HIT Sessions for SILAIS Sta	24-Mar-94	8-Aug-96
Short-term Training in U.S.	7-Apr-94	16-Sep-96
Conduct IEC Campaign	18-May-94	16-Dec-97
HPT Sessions for Counselors	25-May-94	28-Dec-95
HPT Sessions for CHWs	25-May-94	28-Dec-95
Refresher Training	28-Dec-95	30-Dec-97



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(Slack) ≡≡≡— (Slack) Resource delay
Progress shows Percent Achieved on Actual ▵ Milestone
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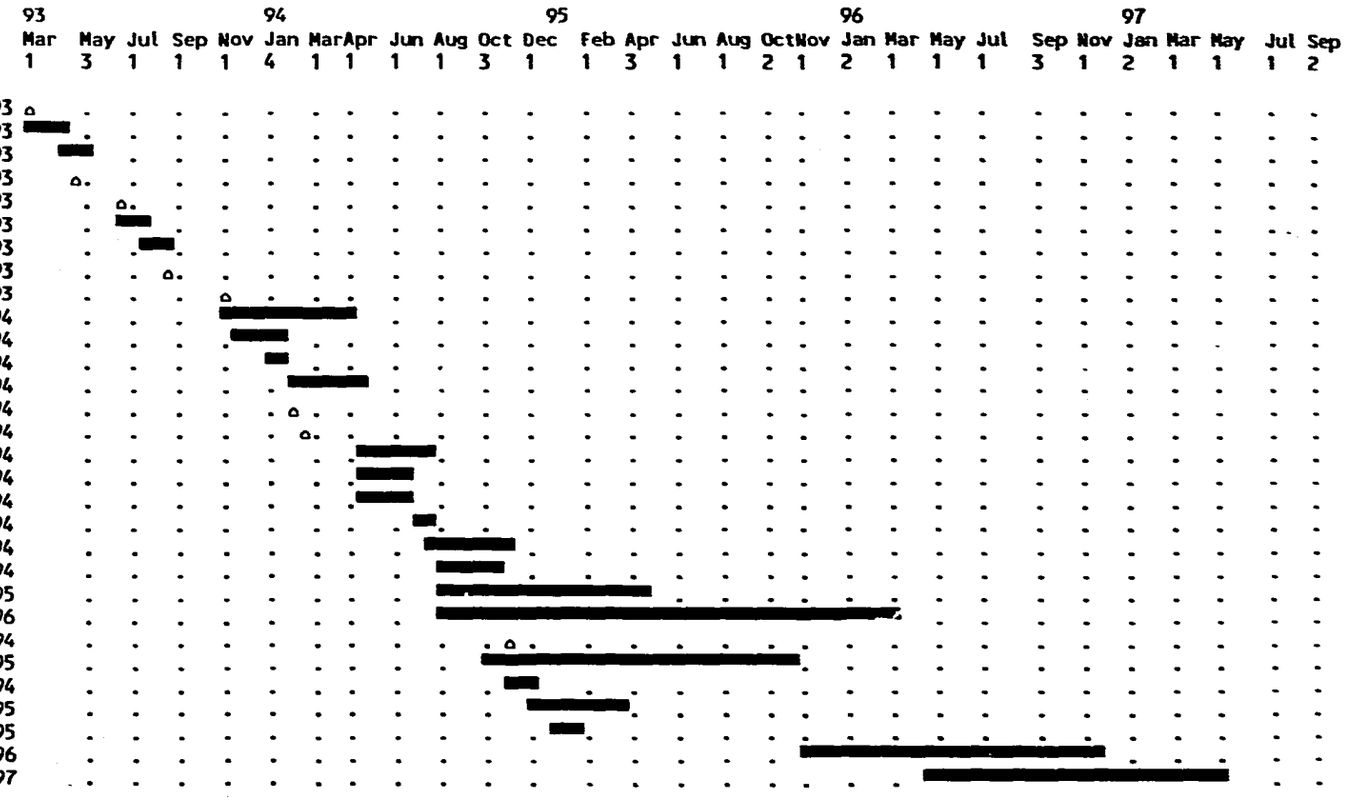
TIME LINE Gantt Chart Report, Strip 1

Schedule Name : Implementation Plan for MFD Component
Responsible :
As-of Date : 3-Feb-93 Schedule File : MFD

Task Name	Start Date	End Date
Sign Project Agreement	26-Feb-93	26-Feb-93
Issue PIO/T for LT TA	26-Feb-93	9-Apr-93
Prepare and Issue RFP	9-Apr-93	7-May-93
Publish CBD Announcement	30-Apr-93	30-Apr-93
Receive Offers	28-Jun-93	28-Jun-93
Technical Review	28-Jun-93	20-Jul-93
Negotiate Contract	20-Jul-93	19-Aug-93
Award Contract	19-Aug-93	19-Aug-93
LT TA Team Arrives	22-Oct-93	22-Oct-93
Establish MINSA ISU	22-Oct-93	15-Apr-94
Inventory SILAIS Structure	5-Nov-93	12-Jan-94
MFD Orientation	28-Dec-93	19-Jan-94
Design FMS	26-Jan-94	21-Apr-94
Subcontract for MFD Trainin	28-Jan-94	28-Jan-94
Issue New SILAIS Decree	11-Feb-94	11-Feb-94
Establish Information Plan	15-Apr-94	20-Jul-94
Design GEMS Training	21-Apr-94	17-Jun-94
Develop FMS Curriculum	21-Apr-94	23-Jun-94
GEMS TOT	1-Jul-94	20-Jul-94
Design MIS	20-Jul-94	21-Oct-94
FMS Training in 1 SILAIS	26-Jul-94	20-Oct-94
GEMS Training	3-Aug-94	17-Apr-95
General Computer Training	3-Aug-94	1-Mar-96
FMS Established in 1 SILAIS	20-Oct-94	20-Oct-94
Transport/Logistics Trainin	3-Oct-94	20-Oct-95
Design MIS Imp. Plan	21-Oct-94	21-Nov-94
Train in MIS in 1 SILAIS	21-Nov-94	29-Mar-95
Mid-Term Evaluation	3-Jan-95	31-Jan-95
Extend FMS to All 19 SILAIS	7-Nov-95	25-Nov-96
Extend MIS to All 19 SILAIS	15-Apr-96	30-Apr-97



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Progress shows Percent Achieved on Actual ▵ Milestone
Scale: 2 weeks per character

TIME LINE Gantt Chart Report, Strip 1

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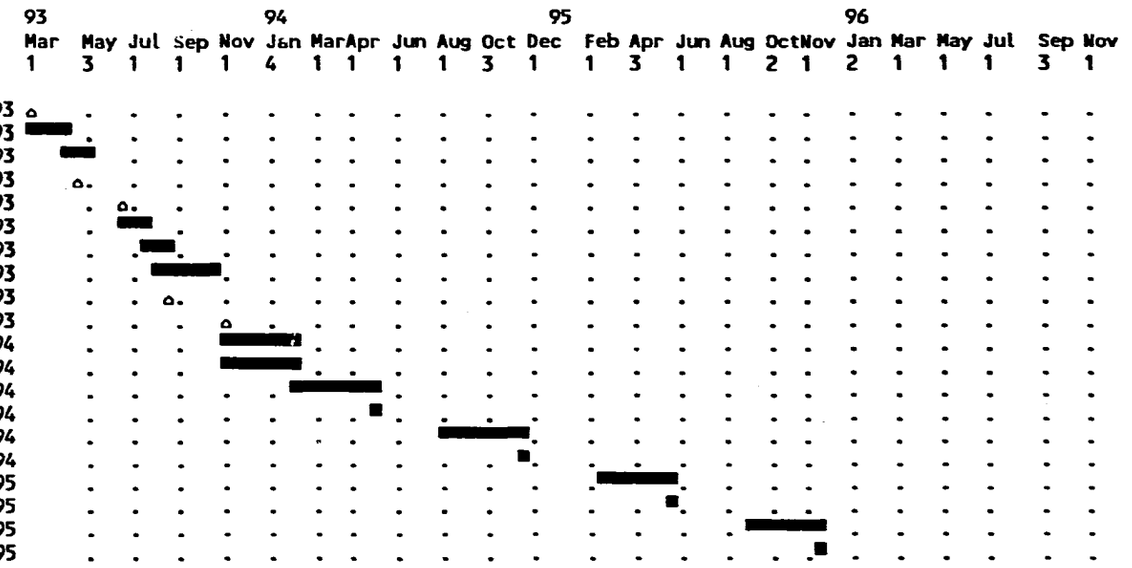
Schedule Name : Alternate Sources of Finance Implementation Plan
Responsible :
As-of Date : 4-Feb-93 Schedule File : ASF

Task Name	Start Date	End Date
Sign Project Agreement	26-Feb-93	26-Feb-93
Issue PIO/T for LT TA	26-Feb-93	9-Apr-93
Prepare and Issue RFP	9-Apr-93	7-May-93
Publish CBD Announcement	30-Apr-93	30-Apr-93
Receive Offers	28-Jun-93	28-Jun-93
Technical Review	28-Jun-93	20-Jul-93
Negotiate Contract	20-Jul-93	19-Aug-93
Demand Study (Gray Firm)	9-Aug-93	12-Oct-93
Award Contract	19-Aug-93	19-Aug-93
LT TA Team Arrives	22-Oct-93	22-Oct-93
Analyze Cost Containment Al	22-Oct-93	28-Jan-94
Design Fee Schedule	22-Oct-93	28-Jan-94
1st Study of Alt. Inc. Sour	28-Jan-94	3-May-94
1st Policy Seminar	3-May-94	4-May-94
2nd Study of Alt. Inc. Sour	5-Aug-94	9-Nov-94
2nd Policy Seminar	9-Nov-94	10-Nov-94
3rd Study of Alt. Fin. Sour	15-Feb-95	19-May-95
3rd Policy Seminar	19-May-95	22-May-95
4th Study of Alt. Fin. Sour	23-Aug-95	29-Nov-95
4th Policy Seminar	29-Nov-95	30-Nov-95



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Progress shows Percent Achieved on Actual △ Milestone
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TIME LINE Gantt Chart Report, Strip 1

ANNEX M: INFORMATION TECHNOLOGY

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ANNEX M: INFORMATION TECHNOLOGY

I. Background

To decentralize and modernize the management of delivery of health services to the most needy, the Nicaraguan Ministry of Health (MINSA) has created the *Sistemas Locales de Atención Integral en Salud* (SILAIS). These organizations are expected to alleviate many of the management and health delivery problems at MINSA. Yet a lack of information technology resources and modern management tools prevents MINSA and the SILAIS from efficiently managing their various health programs, from appropriately allocating medical supplies and personnel, and from accurately controlling and monitoring expenditures and costs. Available information systems (whether manual or automated) are not responding to their critical needs of MINSA and the SILAIS.

In view of this, the SILAIS will not be able to assume fully their new management responsibilities without first obtaining and putting into use computerized management information systems and modern information technology methodologies. As part of its effort to improve the capacity of these SILAIS to assume their new management responsibilities, the Information Technology Subcomponent of the Decentralized Health Services Project (DHS) will help provide MINSA and the SILAIS with these systems and methodologies. The tools that this subcomponent will help develop will give SILAIS management the ability to not only manage and control the resources allocated from MINSA, but also the ability to design and implement solutions unique to their particular requirements.

II. Information Technology Objectives

The information technology interventions to be funded through DHS are designed to provide MINSA and the SILAIS with the resources necessary to support the efficient management of the decentralization process, the management of the decentralized organizations (SILAIS), and the management of ongoing health service delivery activities.

In keeping with the project's focus on decentralization, the majority of information technology assistance will be provided to the SILAIS. Nevertheless, efforts will be made to coordinate computerization activities at the SILAIS with computerization activities elsewhere within MINSA and (in coordination with the USAID Public Sector Financial Management Project) to satisfy Ministry of Finance (MiFin) reporting requirements. Furthermore, particular emphasis will be placed on integrating DHS assistance with ongoing and planned computerization efforts supported by other donors, and with existing MINSA and SILAIS information technology resources.

The objectives of the project's information technology inputs are to provide MINSA and the SILAIS with the appropriate resources and expertise to facilitate efficient management of the information pertaining to their financial, human, and commodity resources. A particular objective will be to create within MINSA and the SILAIS the management, technical, and organizational capabilities to support and efficiently utilize its information technology resources for the long-term benefit of Nicaragua's health sector.

Furthermore, the long-term objective of the introduction and implementation of information technology throughout MINSA and the SILAIS will be the institutionalization and general acceptance of this technology as a tool with which to manage and implement the reform of Nicaragua's health sector. Failure to achieve positive long-term results in the area of information technology would largely negate the success other areas of project involvement might achieve.

III. Information Technology Organizational Analysis

Nicaragua's health delivery systems have critical information technology needs in three areas. The first is for information technology commodities (hardware, software) to be procured and installed within MINSA and the SILAIS. The second area is for application software that will allow MINSA and the SILAIS to efficiently manage resources and ongoing health service delivery activities. The third area is to identify and train the human resources that will manage and utilize the hardware and software. Satisfying their needs in these three critical areas will give MINSA and the SILAIS the appropriate technical tools, and the management capability, to support the decentralization process and the provision of efficient health services to the population.

USAID/Nicaragua has recently completed procurement and delivery to MINSA of 22 microcomputers, printers, and general office automation software packages. These commodities, which were financed by USAID's Public Sector Commodity Support Project, are being used throughout MINSA. Not all the SILAIS, however, received microcomputers when the Regions were disbanded. In addition, other donors have contributed microcomputers, software, peripherals, and other resources to some of the MINSA organizational units. The most complex computer installation within MINSA is a six-workstation Novell network being used to process health statistics. Thus, the level of information technology resources available at any given MINSA organizational unit varies considerably.

At the same time, the function of information systems within MINSA is very disorganized. There are various ongoing computerization initiatives being conducted within MINSA's

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organizational units. Such efforts are underway in the areas of financial management, human resources, supplies/inventory, health information systems (HIS), and epidemiology. Since MINSA is being assisted by various donor organizations, project implementors should expect that other computerization efforts will emerge during the life of DHS. Coordination of these efforts will be among the responsibilities of the Comisión Nacional de SILAIS (CNS), which will coordinate all donor inputs to the health sector.[1]

MINSA's health delivery problems are amplified by the lack of appropriate management information systems. Even though there are scattered efforts being undertaken by donors and by individual organizations within MINSA, the lack of cohesive information technology policies and resources hinders MINSA and other health delivery organizations in implementing and managing the necessary reforms.

Computer knowledge and expertise at both MINSA Central and the SILAIS is limited. MINSA personnel are presently using microcomputers in a variety of efforts. Most efforts at the central level involve the use of word processing, spreadsheets, and other microcomputer software packages. There are, however, some software development efforts underway in the area of health statistics on the Novell local area network (LAN) operating system using FoxBase and Clipper. In contrast, computer expertise at the SILAIS is limited or non-existent. With the present computer expertise, any project to implement information technology within the SILAIS will inherently be a complex endeavor. Therefore, any program of introduction and institutionalization of such technology must be coupled with a comprehensive computer training program.

IV. Recommended Actions Under Information Technology Subcomponent

A. Establishment of MINSA Information Systems Unit (ISU)

Although the project's focus will be on the SILAIS, this subcomponent will -- of necessity -- help organize the overall information systems function within MINSA.[2] The DHS-funded long-term technical assistance team will coordinate with MINSA senior

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[1] As an example of activity proliferation, MiFin is helping hospitals develop computerized systems for tracking budget allocations and medical supplies.

[2] It would not be desirable, nor even truly possible, for individual SILAIS to use Management Information System(s) different from those being used in other SILAIS or at MINSA Central.

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management and, through the CNS, with other donors, to create a central Information Systems Unit (ISU) within MINSA.

Currently, MINSA's Planning Unit is responsible for information systems coordination. However, few coordination activities are apparent. The ISU should play a key role in bringing them about. The head of the Unit should be a senior MINSA manager. The Unit will be designed to be the central management and coordination point for all information technology issues. The primary roles of the ISU will be to set information technology policies, standards, and priorities, and to advise on the allocation of resources. Furthermore, a very important function of the ISU will be that of providing services, technical support, and information management products to the other MINSA units and to the SILAIS. The ISU will report to the Information Management Subcommittee of the CNS on issues involving coordination of donor efforts in the information management field.

B. Development of Information Technology Strategic Plan

Once the information system has been reorganized and strengthened, it will be critical to design and develop a health sector (MINSA and SILAIS) Information Technology Strategic Plan. The strategic plan should:

- Identify all MINSA and SILAIS goals and objectives.
- Define the indicators that will demonstrate achievement of those goals and objectives.
- Identify all of the available information technology resources and initiatives.
- Determine what information technology is critically required for achievement of the goals and objectives.
- Identify the gap between the information technology resources that are available and the level of such resources that is required.
- Determine priorities for satisfying the critical requirements.

The plan should make clear that the information technology function within MINSA and the SILAIS is critical to allowing them to achieve their goals and objectives in terms of health service delivery.

MINSA's Information Technology Strategic Plan will have to be designed and formulated with the full participation of senior MINSA and SILAIS management. If these key personnel do not participate, the plan will likely fail to identify critical

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requirements. MINSA, in turn, would subsequently fail to adhere to the strategic plan.

C. Design and Establishment of a Management Information System (MIS)

Upon completion and approval of the Strategic Plan, the technical assistance team should work with the ISU to develop and put into place a Management Information System (MIS). The MIS will provide information on all MINSA's administrative and financial management requirements. Among the areas included in the MIS will be:

- Accounting
- Budgeting
- Human Resources
- Payroll
- Inventory Management
- General Office Automation
- Facilities Management

The steps needed to establish and begin to operate the MIS will include the following.

1. Requirements and Functional Analysis

The DHS Project's long-term technical assistance team, which will be funded through an institutional contract with a U.S. firm, will include (as described below) two long-term positions related to the Information Technology sub-component: a Senior Systems Analyst/Manager and a Systems Analyst/Programmer. These experts are to help MINSA conduct a detailed requirements and functional analysis at MINSA and at each SILAIS. The resulting report will detail current information management procedures (and assess the efficiency and effectiveness of those procedures), physical infrastructure, information technology resources, staff computer capabilities, volumes of information collected and processed, information flows and formats, and other indicators. The report will also include a detailed list of and specifications for hardware, packaged software (e.g. Lotus 123, Wordperfect, etc.), application software (off-the-shelf packages for specific functions such as accounting, human resources management, etc.) and peripheral requirements.

The two specialists will then include these specifications in the procurement documents that the U.S. Public Health Service (USPHS) will prepare for procurement of DHS-funded commodities.[3] USAID

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[3] Other than contraceptives (which will be purchased separately through A.I.D.'s Central Contraceptive Procurement Project).

and MINSA expect that all requirements will be met with microcomputers and microcomputer-based software, and that it will not be necessary for MINSA or the technical assistance team to develop project-specific software.

2. Conceptual Systems Design

Based on the detailed requirements and functional analysis, the Senior Systems Analyst/Manager and the Systems Analyst/Programmer will prepare a conceptual systems design. The conceptual systems design will highlight vertical (SILAIS/MINSA) and horizontal (SILAIS/SILAIS) integration as well as the required integration with other ministries (such as MiFin), data standards, operating procedures, information flows (vertical), etc. A critical objective of the systems design effort will be to standardize systems, policies, and information management procedures throughout MINSA and the SILAIS.

The systems design effort will require thorough coordination among all donors. This must take place through the Comisión Nacional de SILAIS, which all major donors to the health sector will be invited to join. Failure to identify and resolve data integration issues, or duplication of effort during systems design, will undoubtedly lead to problems during the implementation phase. The conceptual systems design will be reviewed and approved by both MINSA and USAID/Nicaragua.

3. Detailed Workplan

Upon approval of the conceptual systems design, the Senior Systems Analyst/Manager and the Systems Analyst/Programmer will develop an implementation plan. This plan will include detailed implementation schedules, project milestones, training plans and staffing requirements, management plans, expected equipment delivery schedules, projected coordination efforts among MINSA, the SILAIS, MiFin, and other donors through the CNS. The implementation plan should place particular emphasis on the priorities set forth in the health sector's Information Technology Strategic Plan. This plan will be reviewed and approved by both MINSA and USAID/Nicaragua.

The SILAIS are expected to be the area where most of the information and data is collected, aggregated, and processed. Nonetheless, it is expected that aggregated and summarized data will be forwarded to the central MINSA information systems unit for consolidation and dissemination. These key data and information integration processes and procedures must have been identified and/or defined in the requirements analysis phase.

4. System Description

While a complete description of the MINSA MIS must await completion of the steps described above, the following is a description of the general nature of the systems that USAID and MINSA expect will be installed at each SILAIS. The detailed system configuration will vary according to actual requirements. However, the basic microcomputer hardware and software backbone configuration listed and described herein is expected to be maintained.

A system at a SILAIS will include a file server and five workstations linked via the Novell LAN operating system. Each workstation will be equipped with word processing and spreadsheet software. In addition, the SILAIS system will have software capabilities for telecommunications (modem and communication software), graphics, desktop publishing, statistics, and utilities. All workstations will have access to a laser printer and a dot matrix printer connected via the LAN. The entire LAN will be connected to a UPS for protection from sudden power surges and outages. Once the application software packages have been identified, adapted, and implemented, they are expected to reside on the LAN file server, from which users will access them via previously designed procedures. As stated above, the system at the central MINSA information systems unit will consist of a similar configuration, but with ten workstations. At the project's inception, data and information interchange and transfer between the SILAIS, MINSA, and MiFin are expected to be implemented via magnetic media (diskettes), rather than sophisticated telecommunications that would add complexities. As Nicaragua's telecommunications systems improve, it is expected to become possible to exchange data via modem.

The implementation of a LAN at the SILAIS is expected to increase system complexities in locations where staff computer expertise is limited or non-existent. Nonetheless, the LAN should provide each SILAIS organization with the capabilities for "sharing" all available resources. Since information technology resources will be limited, sharing of available resources will be a critical factor when attempting to satisfy MIS information processing requirements. Furthermore, the MINSA initiative (supported by Spain) in the Health Information System (HIS) area is currently being implemented in a Novell LAN, which will facilitate the implementation of the LAN at MINSA.

5. Commodity Requirements

The Nicaraguan health sector's information technology requirements can be met with hardware and software resources currently commercially available. Therefore, the project-funded technical assistance (TA) team should work with MINSA to identify solutions to its requirements that adhere to the simple "do not

re-invent the wheel" principle. Efforts should be made to identify existing off-the-shelf solutions, and/or to identify applications previously developed and implemented in similar institutions in the region, as well as applications available from international and other health organizations (e.g., the Pan American Health Organization [PAHO] and the Centers for Disease Control [CDC]).

Table M-1 below sets forth a list of the commodities that will be required to establish this MIS at each of MINSA's 19 SILAIS and at the central level. At present, the assumption is that all SILAIS collect and process roughly the same volume and type of information. It is expected that DHS will provide similar information technology resources to all SILAIS and to the central information systems unit. This assumption will verified and the exact number of workstations and other items to procure will be revised if necessary during the requirements and functional analysis phase described above. The exact number of items within a SILAIS is expected to vary according to the number of users at the particular SILAIS, and the volume of information processed. The exact number of items at MINSA Central can remain as planned (a ten-workstation LAN) since other resources already exist. The list below can be used for budgeting purposes and represents what will be required at each SILAIS. The central MINSA information systems unit is expected to receive a similar configuration, but with ten workstations, rather than the five at each SILAIS.

To facilitate vertical integration of the information systems and resources at the SILAIS with those at MINSA Central, the DHS technical assistance team should take care to include similar systems within the MINSA's ISU. These systems will have to be similarly configured, and used for information consolidation and dissemination purposes. The strategy should be to use the project's equipment as processing and operational systems, while utilizing existing equipment for data entry, training, software testing, and software development and production requirements.

TABLE M-1: Information Technologies Commodity List [Per SILAIS]

Microcomputers:

486/33 Mhz — Qty = 1
- 8 MB RAM
- 300 MB HD
- 3.5 & 5.25 FD
- VGA Color Monitor
- Mouse
- DOS 5.0
- Windows 3.1
- Ethernet Network card
- 150 MB Tape Backup Unit

TABLE M-1: Information Technology Commodity List (cont.)
[Per SILAIS]

386/33 Mhz - 4 MB RAM - 150 MB HD - 3.5 & 5.25 FD - VGA Color Monitor - Mouse - DOS 5.0 - Windows 3.1 - Ethernet Network Card	Qty = 5

Printers:

Laser printer - 2 MB RAM - Font Cartridge	Qty = 1
Dot Matrix Printer - 300 CPS Minimum - 24 Pin - Wide Carriage	Qty = 1

Other Peripherals:

Modem - 2400 Baud	Qty = 1
UPS - 3.0 KVA - Stabilizer Capabilities - Minimum 10 Minute Backup	Qty = 1

Software:

Novell Netware (10 users)	Qty = 1
Clipper	Qty = 1
WordPerfect 5.1 LAN (Spanish)	Qty = 1
WordPerfect 5.1 Node (Spanish)	Qty = 5
Lotus 123 LAN (Spanish)	Qty = 1
Lotus 123 Node (Spanish)	Qty = 5
Communication Software	Qty = 1
Desktop Publishing Software	Qty = 1
Statistics Software	Qty = 1
Graphics Software	Qty = 1
Utilities Software	Qty = 1
Anti-Virus Software	Qty = 1

Note: If available, all software packages and accompanying documentation must be obtained in Spanish.

TABLE M-1: Information Technology Commodity List (cont.)
[Per SILAIS]

Application Software:

Financial Management Software Qty = 1
(Expected to include accounting, budgeting, costing, etc. Actual requirements to be defined during requirements analysis stage.)

Human Resources Management Software Qty = 1
(Actual requirements to be defined during requirements analysis stage.)

Inventory Management Software Qty = 1
(Actual requirements to be defined during requirements analysis stage.)

As stated earlier, the application software identified and described above is based on an assumption of requirements obtained through visits to MINSA headquarters, discussion with MINSA officials there, and review of secondary documents. The detailed requirements and functional analysis will verify these estimates. Overlaps between application software requirements must be identified and resolved. Particular efforts must be made to coordinate the vertical (SILAIS/MINSA) data exchange procedures, and the horizontal (SILAIS/SILAIS) standardization of processes and procedures. In addition, reporting and data exchange requirements between MINSA and MiFin need to be identified and resolved.

Efforts should be made to obtain off-the-shelf application software packages with either Spanish versions, or with capabilities for translating the package's main features (screens, menus, documentation, etc.) into Spanish.

Procurement of the information technology commodities should begin in the second Project Year DHS (1994) as soon as possible following arrival of the long-term technical assistance team. This will allow these commodities to begin to arrive early in the project's third year.[4] The long-term TA team will supervise installation and initial training. The pace of subsequent commodity procurement should be adjusted to match the pace of expansion of the MIS into all 19 SILAIS. As described in the body of the Project Paper, these commodities will be procured by the U.S. Public Health Service.

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[4] Since USAID/Nicaragua recently delivered a variety of microcomputers and related commodities to MINSA, there is no need to include procurement of information technology commodities in the Accelerated Start Component to be launched in FY 1993.

Any delivery of information technology resources to MINSA and the SILAIS must be conditioned on the provision of appropriate sites for system installation. The long-term technical assistance team should certify that all sites scheduled to receive equipment are adequately conditioned (i.e. with electrical outlets of sufficient capacity) and provide facilities with adequate security to ensure the equipment will be appropriately housed and utilized. No equipment should be delivered unless proper safeguards are in place. Information developed under the Emergency Employment Generation Project that USAID is carrying out with the GON's Emergency Social Investment Fund (FISE) should be utilized to help verify adequacy of facilities. Further, the long-term technical assistants should help MINSA and SILAIS managers determine what the minimum physical requirements are. MINSA and the SILAIS are, however, expected to provide the adequately conditioned sites.

V. Training Requirements for Information Technology

The effective and efficient implementation and institutionalization of information technology resources within environments where none have been used previously is an inherently risky endeavor. It will demand substantial planning, analysis, and consensus building among the involved parties. It is therefore critical to the long-term success of this technology that the resources be introduced and implemented according to established approaches such as the ones described below. These methodologies will parallel the project's other financial, management, and health services delivery initiatives.

Personnel training will be a critical to this process. Since there are currently various computerization initiatives within MINSA, some technical capabilities and skills exist. The appropriateness and depth of the existing skills and knowledge base, however, is not readily apparent. At the SILAIS in particular, computer expertise is either very limited or non-existent. Therefore, the identification, training, and nurturing of a technically skilled, computer literate staff at the SILAIS will be a major project objective. The following are three areas of training to be supported by DHS; other areas may emerge as project implementation proceeds.

A. Systems Management/Administration Training

This area should encompass all training to the individuals identified as the potential systems managers/administrators. The long-term technical assistance team, together with SILAIS management, should identify at least two individuals at each SILAIS to become the system managers/administrators. These individuals should then be trained in areas such as technical resources management, LAN administration (Novell Netware as well

as generic networking concepts), computer center management, software installation and troubleshooting, simple telecommunications concepts, basic computer programming concepts, and other areas to be identified. Since training resources will be limited, emphasis should be placed on on-the-job training in addition to the training programs to be administered.

B. Technical Staff Training

This area should encompass training to individuals identified as potential systems analysts/programmers. The technical assistance team should work with SILAIS management to identify at least two individuals at each SILAIS to become the systems analysts/programmers there. Training for these individuals should be in-depth, and should include areas such as microcomputer concepts (diagnosis, troubleshooting, and routine maintenance), microcomputer software packages (Lotus, WordPerfect, Clipper, utilities, etc.), LAN concepts, telecommunication concepts, database management systems, basic computer programming concepts, and any other areas deemed necessary for the proper utilization of all SILAIS information technology resources. Since training resources will be limited, emphasis should be placed on on-the-job training in addition to the training programs to be administered.

C. General User Training

This area should encompass training of all individuals within a SILAIS that will have access to the information technology resources (i.e. secretaries, data entry clerks, medical personnel, etc.). The user community of a particular SILAIS should be primarily trained in the appropriate use of microcomputers, microcomputer software packages (Lotus, WordPerfect, etc). Training should also be provided in the application software packages to be implemented. Since training resources will be limited, emphasis should be placed on on-the-job training in addition to the training programs to be administered.

Since, as stated above, the computer skills and expertise of current MINSA and SILAIS staff are limited, the DHS technical assistance team should ensure that the personnel identified and trained will be capable of becoming the future "trainers". Furthermore, since trained personnel are expected to turn over somewhat once they acquire marketable computer skills, training programs should take place periodically throughout the life of the project.

VI. Technical Assistance Requirements

The information technology subcomponent is expected to require on-site technical assistance throughout the life of the project. Two full-time specialists will be required:

- Senior Systems Analyst/Manager: This individual should be charged with the management of all information technology initiatives within the scope of the project. S/he should be the critical player within the long-term TA team for assisting in and coordinating the formulation of the Information Technology Strategic Plan, managing the requirements and functional analysis effort, managing the conceptual design phase, monitoring and controlling all training activities, and managing the overall implementation of the information technology subcomponent at the SILAIS and central levels. Furthermore, the Senior Systems Analyst should be the focal point for coordination between USAID and other donors, and between the SILAIS, MINSA, and MiFin. The position must be filled by an individual with at least an undergraduate technical degree (computer science, mathematics, etc.), a masters degree in management of information systems, and substantial experience in the management of service- and support-oriented computer centers in the health sector. Spanish language capability at a minimum FSI 3-3 level will be required. It is expected that this position will be filled by an expatriate.

- Systems Analyst/Programmer: The second perceived need is for a very technically competent systems analyst/programmer. This individual should be charged with providing the project with the necessary technical expertise and knowledge for coordinating and conducting personnel training, coordinating and participating in the installation and implementation of hardware and software, troubleshooting technical issues, conducting research and analysis of off-the-shelf application software, and determining and resolving technical issues. The position must be filled by an individual with at least an undergraduate degree in a technical field (computer science, mathematics, etc.) and extensive experience in microcomputers, microcomputer software packages (Lotus, WordPerfect, Clipper, etc.), LANs, telecommunications, administrative (accounting, finance, human resources, inventory management, etc.) application software packages, and general technical support functions within a service and support oriented computer center. This position is expected to be filled by a Nicaraguan citizen.

VII. Relationship to Other Donor Programs

As is stressed throughout this Project Paper, coordination with other donor programs within MINSA and the SILAIS will be crucial to the long-term success of the information technology efforts funded under DHS. This coordination will take place principally through the Comisión Nacional de SILAIS and MINSA's Office of External Cooperation. Particular attention should be paid to efforts of the Spanish Development Agency/Centro de Investigación y Estudios de Salud (CIES) under their SIS-NICA information systems project. SIS-NICA is working closely with MINSA's Planning Unit in the formulation of a diagnostic of the existing health statistics information system. This effort is expected to be very useful for DHS's initiatives. Project implementors should expect other agencies to become involved in similar information technology efforts during the life of the project.

ANNEX N: JUSTIFICATIONS

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Amemb. Managua USAID
Unit 2712 Box 9
APO AA 34021

AGENCIA INTERNACIONAL PARA EL DESARROLLO

Plata Sub Urbana
Apartado Postal C-167, Managua
ZP 13

ACTION MEMORANDUM FOR THE MISSION CONTRACTS OFFICER

DATE : March 10, 1993

THROUGH : L. Odle, PDIS

FROM : L.S. Waskin, PDIS

SUBJECT : Justification for Use of Gray Amendment Contracting Procedures, Decentralized Health Services Project (DHS, 524-0327)

PROBLEM: Your approval is required to authorize other than full and open competition in the selection of a firm to provide short-term technical assistance to subject project.

BACKGROUND: The Decentralized Health Services Project (DHS) will be a $29.4 million, five-year effort to improve the management and increase the effectiveness of and access to Nicaragua's public health resources, and to explore and encourage alternative financing to the sector. To facilitate the timely provision of assistance to a sector in which Nicaragua's needs are crucial, the project design includes an Accelerated Start Component (ASC). Through the ASC, DHS will fund short-term technical assistance to help the Government of Nicaragua's (GON's) Ministry of Health (MINSA):

- Conduct a human resources assessment of personnel actually or potentially available at both the central level and in the five SILAIS (health districts) on which MINSA will focus the maternal health and child survival (MH/CS) efforts supported by DHS.

- Survey ongoing and proposed activities of other donors in the sector.

- Review MINSA's plans for the introduction of cost containment and cost recovery measures, and work with MINSA, other cognizant GON institutions, and USAID to devise specific, written policies to put these plans into action.

- Design a methodology for gathering, and then work with MINSA to collect, baseline data on the indicators that will measure the success of the Project.

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674028, 674029, 674030

Facsimile: 75711

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All these activities are to be launched within three months of the project's authorization, and are to be completed within the first project year.

PROPOSAL: Given the urgent need to begin assistance to MINSA, the USAID Project Committee (in consultation with MINSA) has recommended that the technical expertise needed to carry out the tasks summarized above be obtained from a small disadvantaged business or other small disadvantaged institution as defined in AIDAR 726.101 (i.e., from a "Gray Amendment" institution). This firm would provide short-term personnel as summarized in the following table:

Table I: **Short-Term Positions, Gray Firm Technical Assistance to ASC Component**

Position	Person-Months:	Task:
International:		
Human Resources Specialist	1	Human Resources Assess.
Health Management Specialist	1	Other Donor Survey
Health Policy Specialist	2	Policy Reforms
Pharmaceutical Mgt. Spec.	2	Policy Reforms
Health Care Financing Spec.	2	Policy Reforms
Statistical Analyst	3	Baseline Data Collection
Nicaraguan:		
Data Gatherers (5)	3 each	Baseline Data Collection

The estimated total value of this proposed contract is $303,000. Its duration would be from on or about June 1, 1993 through the end of the calendar year.

To locate a qualified firm to provide these services, USAID proposes to issue a Request for Proposals (RFP) to some six to eight firms believed to have the required expertise. A Technical Review Panel will evaluate and rank the responses to this RFP; the USAID Contracts Officer will then begin negotiations with the firm that presents the most advantageous offer.

DISCUSSION: AIDAR 706.302-71, "Small Disadvantaged Businesses," states in pertinent part that:

> "AID is authorized to use other than full and open competition to award contracts to small business concerns owned and controlled by socially and economically disadvantaged individuals..., historically black colleges and

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universities, colleges and universities having a student body of which more than 40 percent of the students are Hispanic American, and private voluntary organizations which are controlled by individuals who are socially and economically disadvantaged."

The section goes on to state that "(t)his authority may only be used if the Agency determines in accordance with AIDAR 726.103 that:

"(1) The acquisition is to be funded from amounts referred to in paragraph (a)(2) of this section [these amounts include development assistance funds];

(2) Award of the acquisition to an eligible organization is appropriate to meet the requirement in paragraph (a)(2) of this section [which states that at least ten percent of the funds from the listed accounts, including development assistance funds, be used only for activities of disadvantage enterprises].

(3) After considering whether the acquisition can be made under the authority of Section 8(a), award under Section 8(a) is not practicable."

The only limitations on this authority are that:

(1) Offers shall be requested form as many potential offerors as is practicable under the circumstances.

(2) The contract file must include a certification by the contracting officer that the procurement is being made pursuant to 706.302-71 and that the application requirements and limitations of 706.302-71 have been complied with.

The proposed acquisition meets all the above tests:

- This procurement is to be funded from Development Assistance accounts (specifically, Child Survival and/or Health).

- The organizations to which the RFP will be sent will all be eligible organizations under the terms of this section; i.e., they will all be Gray Amendment institutions.

- The Project Committee considered, and rejected, the option of acquiring these services from an 8(a) when it reviewed and approved a draft Project Paper on August 27, 1992. The Committee decided that USAID's experience with the 8(a) mechanism, which has on occasion entailed lags of over four months from the issuance of the relevant PIO/T and the receipt of approval from the Small Business Administration to *begin* negotiations with the firm judged most qualified, suggests that

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this mechanism would be too cumbersome to respond to the urgent needs of the Nicaraguan health sector.

- Offers will be requested from a reasonable number of potential contractors (at least six). This is comparable to the number of bids (seven) received from U.S. firms during full and open competition in late 1991 for a significantly more expensive long-term technical assistance contract funded by the PVO Co-Financing Project, USAID/Nicaragua's other bilateral project activity in the health sector.

- By your signature of this Action Memorandum, and in accordance with AIDAR 726.103, you will certify that this procurement is being made pursuant to 706.302-71, and that it complies with the application requirements and limitations of 706.302-71. The list of Gray entities to which the RFP will be sent was obtained from the Office of Small and Disadvantaged Business (OSDBU), and OSDBU has reviewed a Scope of Work for this procurement and endorsed USAID's use of this contracting mechanism.

RECOMMENDATION: That, by signing below, you approve other than full and open competition in the selection of a firm to provide short-term technical assistance to the Accelerated Start Component of the Decentralized Health Services Project.

Approved: _____

By : James E. Corley
Title : Contracts Officer

Date : 3/11/93

Drafted:PDIS:LSWaskin:2/18/93

Cleared:GDO:LAyalde: _____ Date: 3/10/93
PEPS:TAmani: _____ Date: 3/10/93
LA:MVelázquez: (draft) Date: 3-4-93

(and in accordance with AIDAR 726.103)

to *begin* negotiations with the firm judged most qualified, suggests that this mechanism would be too cumbersome to respond to the urgent needs of the Nicaraguan health sector.

- Offers will be requested from a reasonable number of potential contractors (at least six). This is comparable to the number of bids (seven) received from U.S. firms during full and open competition in late 1991 for a significantly more expensive long-term technical assistance contract funded by the PVO Co-Financing Project, USAID/Nicaragua's other bilateral project activity in the health sector.

OK

- By his clearance of this Action Memorandum, the USAID Contracts Officer has certified that this procurement is being [redacted] pursuant to 706.302-71, and that it complies with the application requirements and limitations of 706.302-71. The list of Gray entities to which the RFP will be sent was obtained from OSDIBU, and OSDIBU has reviewed a Scope of Work for this procurement and endorsed USAID's use of this contracting mechanism.

Spell out

OK

AUTHORITY: Pursuant to AIDAR 706.501, you are the Competition Advocate for this activity. As set forth in FAR 6.304, you as the Competition advocate have authority to approve other than full and open competition for acquisitions whose estimated value is greater than $100,000 and not more than $1 million. The estimated value of this acquisition is $290,000.

[redacted]

OK

RECOMMENDATION: That, by signing below, you approve other than full and open competition in the selection of a firm to provide short-term technical assistance to the Accelerated Start Component of the Decentralized Health Services Project.

Approved: _____

By : Mark Silverman

Title : Deputy Director

Date : _____

Drafted:PDIS:LSWaskin:2/18/93

Cleared:PDIS:LOdle: _____ Date: _____
GDO:LAyalde: _____ Date: _____
PEPS:TAmani: _____ Date: _____
LA:MVelázquez: _____ Date: 3/4/93
CO:JECorley: _____ Date: _____

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U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Amemb. Managua USAID
Unit 2712 Box 9
APO AA 34021

AGENCIA INTERNACIONAL PARA EL DESARROLLO

Plaza Sub Urbana
Apartado Postal C-167, Managua
ZP 13

ACTION MEMORANDUM FOR THE ACTING MISSION DIRECTOR

DATE : March 10, 1993

THROUGH : L. Odle, PDIS

FROM : L.S. Waskin, PDIS

SUBJECT : Justification for Use of a Federal Agency to Procure Health-Related Commodities, Decentralized Health Services Project (DHS, 524-0327)

PROBLEM: Your approval is required to authorize the negotiation of a Participating Agency Service Agreement with the U.S. Public Health Service to procure commodities for subject project.

BACKGROUND: The Decentralized Health Services Project (DHS) will be a $29.4 million, five-year effort to improve the management and increase the effectiveness of and access to Nicaragua's public health resources, and to explore and encourage alternative financing to the sector. To facilitate the timely provision of assistance to a sector in which Nicaragua's needs are crucial, the project design includes an Accelerated Start Component (ASC). Through the ASC, DHS will fund short-term technical assistance to help the Government of Nicaragua's (GON's) Ministry of Health (MINSA) carry out various tasks related to project mobilization and to the gathering of baseline data on the sector.

The ASC will also help MINSA procure urgently-needed commodities required to carry out various maternal health and child survival (MH/CS) interventions that the DHS Project will support. These commodities are to include oral rehydration salts, growth monitoring equipment, obstetrical-gynecological equipment, vitamins, antibiotics, and contraceptives. By ordering these commodities early in the first project year, well before the arrival of the planned long-term technical assistance team, the ASC is intended to give MINSA an important head start on improving the provision of primary health care services in the five SILAIS (health districts) on which DHS will focus.

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PROPOSAL: Given Nicaragua's urgent health needs, particularly in the area of primary care, the Project Committee (in consultation with MINSA) has recommended that USAID execute a Participating Agency Service Agreement (PASA) with the U.S. Public Health Service (USPHS) to procure all project-funded commodities.[1] Under this PASA, the USPHS is to:

- Conduct site visits to verify and update the commodity requirements identified for the five focus SILAIS during project design, and propose such modifications as may be necessary to this list;

- Order on MINSA's behalf those commodities needed to launch MH/CS efforts in the five focus SILAIS; and

- Identify any training or technical assistance that may be needed to help MINSA use these commodities effectively, and arrange for or carry out with its own personnel any such training or assistance.

The initiation of any procurement or training actions would, of course, be subject to prior approval by both MINSA and USAID.

USPHS is to begin these efforts within three months of the project's authorization. Procurement of a one-year stock of MH/CS commodities, and of sufficient replacement stocks, is to be completed within the first project year. In subsequent years, the USPHS will repeat this process in consultation with MINSA, the long-term technical assistance contractor, and USAID. To help MINSA and the contractor estimate commodity needs, place orders, and train staff, the PASA will contain funds for up to one person-month per year of on-site technical assistance from the USPHS during Project Years Two through Five.

The value of pharmaceutical and medical supplies to be procured by the USPHS is expected to approximate $4,078,000, or more than 84% of the total value of project-funded commodities (other than contraceptives). Other commodities (such as vehicles, computers, software, and associated office supplies) are budgeted for $745,000. Given this, the Project Committee has also recommended that the USPHS, rather than a separate Procurement Services Agent (PSA), purchase these other commodities. In the Committee's view, it would be more costly, more time-consuming, and less efficient to work through a PSA rather than to buy these other commodities through USPHS. The Committee recommends that USAID limit the number of implementing agents through which DHS is carried out, and that the mission and MINSA deal with only one entity for all project-funded commodity procurement.

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[1] Other than contraceptives, which will be procured through an OYB transfer to A.I.D.'s central Contraceptive Procurement Project.

DISCUSSION: A.I.D. Handbook 12, Chapter 1, Section B.3.b, Paragraph (1) states that:

> "Section 621(a) authorizes A.I.D. in providing technical assistance under the [Foreign Assistance] Act to utilize the resources of other Federal agencies, particularly in the fields of education, health, housing, or agriculture, when these resources: (1) are particularly or uniquely suitable for such technical assistance, (2) are not competitive with private enterprise, and (3) can be made available without undue interference with domestic programs."

This paragraph goes on to explain that A.I.D. "takes the position [that] Section 621(a) operates as a statutory exception to OMB Circular A-76..." That Circular sets forth more stringent limitations on the use of services or products of one Federal agency by another.

Paragraph (2) of the same section then analyzes the circumstances in which use of a Participating Agency (PA) is appropriate:

- The services desired from another Federal Agency must be for technical assistance;
- The furnishing of services or commodities to A.I.D. must not unduly interfere with the Federal agency's domestic program; and
- The other Federal Agency must be uniquely or particularly suited to carry out the technical assistance activity (i.e., in a better position than A.I.D., the private sector, or another Federal agency to fulfill the requirement).

The proposed use of USPHS meets all these tests:

- The services desired are for technical assistance, defined in this context as the "on-site provision of assistance to developing countries and the various support services and activities which directly facilitate such assistance activities, whether performed overseas or in the U.S."
- The furnishing of these commodities and services would not unduly interfere with the domestic programs of USPHS. The USPHS has expressed to USAID its willingness and ability to participate in this project; indeed, the USPHS maintains an Office of International Health in part to provide precisely these types of services.
- The USPHS is particularly suited to carry out this technical assistance activity. As defined by Handbook 12, Section B.3.b, "particular suitability" means that "(T)he proposed PA must have a clear and substantial superiority to other sources, both private and public. The preponderance of resources available for application to the target project must be much broader in scope and be demonstrably more readily available from the PA than from other sources..." The USPHS enjoys this clear and substantial superiority by virtue of (1), its extensive stocks of pharmaceutical and

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medical supplies already in stock for domestic and international use; (2) its experience in, and proven mechanisms for, procuring supplies not in stock; and (3), its successful prior experience in identifying, purchasing, and shipping pharmaceutical and medical commodities for Nicaragua under the recently-completed Pharmaceutical Medical Supplies Project. All these factors combine to give the USPHS an extensive familiarity with, and preponderant capability to meet on a timely basis, the unique procurement needs of the Nicaraguan health sector.

AUTHORITY: Handbook 12, Chapter 1, Section B.1.b(1) explains that all requests for PA technical assistance must be made on a PIO/T form. Furthermore, a determination that the requirements of Section 621(a) have been met and the accompanying 621(a) Justification and Determination must be signed by the cognizant Mission Director or his/her Deputy. Additionally, A.I.D. Delegation of Authority 752, as revised, delegated to the principal officers of most LAC Bureau field posts, including Nicaragua, the authority "to sign statements that proposed PASA or RSSA agreements are exempt from OMB Circular A-76." Per USAID Mission Notice Number 92-058 of September 28, 1992, the USAID/Nicaragua Mission Director has redelegated this authority to you. You therefore have authority to approve this justification.

RECOMMENDATION: That, by signing below, you approve the above 621(a) Justification and Determination and the negotiation of a Participating Agency Service Agreement with the U.S. Public Health Service to procure commodities for the Decentralized Health Services Project.

Approved: Mark I. Silverman

By : Mark I. Silverman
Title : Acting Director
Date : 3/12/93

Drafted:PDIS:LSWaskin:3/02/93

Cleared:GDO:LAyalde: (draft) Date: 3-10-93
GC:MFittipaldi: (phone) Date: 3-11-93
CO:JECorley: (draft) Date: 3-11-93

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medical supplies already in stock for domestic and international use; (2) its experience in, and proven mechanisms for, procuring supplies not in stock; and (3), its successful prior experience in identifying, purchasing, and shipping pharmaceutical and medical commodities for Nicaragua under the recently-completed Pharmaceutical Medical Supplies Project. All these factors combine to give the USPHS an extensive familiarity with, and preponderant capability to meet on a timely basis, the unique procurement needs of the Nicaraguan health sector.

AUTHORITY: Handbook 12, Chapter One, Section B.1.b explains that all requests for PA services must be made on a PIO/T form accompanied by a determination that the requirements of Section 621(a) have been met. The Handbook states that this justification must be signed by the cognizant Mission Director or his/her Deputy. Additionally, A.I.D. Delegation of Authority 752, as revised, delegated to the principal officers of most LAC Bureau field posts, including Nicaragua, the authority "to sign statements that proposed PASA or RSSA agreements are exempt from OMB Circular A-76." Per USAID Mission Notice Number 92-058 of September 28, 1992, the USAID/Nicaragua Mission Director has redelegated this authority to you. You therefore have authority to approve this justification.

RECOMMENDATION: That, by signing below, you authorize the negotiation of a Participating Agency Service Agreement with the U.S. Public Health Service to procure commodities for the Decentralized Health Services Project.

Approved: _____

By : Mark I. Silverman
Title : Acting Director

Date : _____

Drafted:PDIS:LSWaskin:3/02/93

Cleared:GDO:LAyalde: Ayalde Date: 3/10/93
LA:MVelázquez: _____ Date: _____
CO:JECorley: _____ Date: 3/10/93

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