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UNCLASSIFIED

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

ROCAP

PROJECT PAPER

ORT, GROWTH MONITORING AND EDUCATION

AID/LAC/P-207

Project Number: 596-0115

UNCLASSIFIED

PROJECT DATA SHEET

1. TRANSACTION CODE

A = Add
 C = Change
 D = Delete

Amendment Number

DOCUMENT CODE

3

2. COUNTRY/ENTITY

ROCAP

3. PROJECT NUMBER

596-0115

4. BUREAU/OFFICE

Latin America and the Caribbean

5. PROJECT TITLE (maximum 40 characters)

ORT, Growth Monitoring and Education

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)

MM DD YY
 1 2 3 1 8 9

7. ESTIMATED DATE OF OBLIGATION
 (Under 'B.' below, enter 1, 2, 3, or 4)

A. Initial FY 8 4 B. Quarter Supp. C. Final FY 8 5

8. COSTS (\$000 OR EQUIVALENT \$1 =)

A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(2,500)	(--)	(2,500)	(8,000)	(--)	(8,000)
(Loan)	()	()	()	()	()	()
Other U.S.						
1.						
2.						
Host Country	--	--	--	--	2,630	2,630
Other Donor(s)						
TOTALS	2,500	--	2,500	8,000	2,630	10,630

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) PH	510	510		--		2,500		8,000	
(2)									
(3)									
(4)									
TOTALS						2,500		8,000	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

300 320 560

11. SECONDARY PURPOSE CODE
310

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code BR BU R/H NUTR PART TNG
 B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

To increase the effective use of Oral Rehydration Therapy, Growth Monitoring and Appropriate Feeding Practices in Central America and Panama.

14. SCHEDULED EVALUATIONS

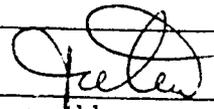
Interim MM YY MM YY Final MM YY
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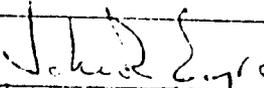
15. SOURCE/ORIGIN OF GOODS AND SERVICES

000 941 Local Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment)

17. APPROVED BY

Signature
 1. 
 Title, Controller
 2. Acting Director

2. 
 Date Signed MM DD YY

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

MM DD YY

Project Authorization

Name of Entity : Nutrition Institute for Central America and
Panama (INCAP)

Name of Project : Oral Rehydration Therapy, Growth Monitoring and
Nutrition Education

Number of Project: 596-0115

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the ORT, Growth Monitoring and Education Project with the Nutrition Institute for Central America and Panama (INCAP), involving planned obligations of not to exceed Eight Million United States Dollars (\$8,000,000) in grant funds ("Grant") over a five-year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the Project.
2. The project ("Project") consists of assistance to INCAP to strengthen the capacities of national and regional organizations in Central America and Panama to develop and implement effective ORT, Growth Monitoring and Appropriate Feeding Practices through a) advisory services, b) training, and c) research.
3. The Project Agreement, which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

a. Source and Origin of Commodities, Nationality of Services

Commodities financed by A.I.D. under the Grant shall have their source and origin in countries which are members of the Central American Common Market ("CACM"), Belize and Panama, or the United States, except as A.I.D. may otherwise agree in writing. Except for ocean shipping, the suppliers of commodities or services shall have countries which are members of

CACM, Belize, Panama, or the United States as their place of nationality, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Grant shall be financed only on flag vessels of the United States, except as A.I.D. may otherwise agree in writing.

b. Conditions Precedent to Disbursement

(1) Prior to the disbursement, or the issuance of any commitment documents, under the Project Agreement to finance activities other than for hiring long-term personnel, INCAP shall, except as A.I.D. may otherwise agree in writing, furnish, in form and substance satisfactory to A.I.D., a detailed time-phased plan setting forth all activities to be completed during the first year of the project.

c. Covenants

INCAP shall covenant that, except as A.I.D. may otherwise agree in writing:

(1) Prior to undertaking project activities for each year after the first year of the Project, INCAP will furnish, in form and substance satisfactory to A.I.D., a consolidated workplan and budget for activities for that year.

(2) INCAP will coordinate project activities with USAID missions in each country which participates in this project and will collaborate with bilateral USAIDs in the development of projects designed to expand the use of oral rehydration therapy, growth monitoring and related education. INCAP will also coordinate project activities with Ministries of Health in each participating country and with the Pan American Health Organization and its representatives in accordance with the INCAP Basic Agreement.



John R. Eyre
Acting Director

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Oral Rehydration Therapy, Growth Monitoring and
Nutrition Education
596-0115

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List of Acronyms

- AFP - Appropriate Feeding Practices
- APHA - American Public Health Association
- CA/P - Central America and Panama
- CDC - Center for Disease Control, Atlanta
- GM - Growth Monitoring
- ICDDR/B - International Center for Diarrheal Disease
Research, Bangladesh
- ICAP - Central American Institute for Public Administration
- IMR - Infant Mortality Rate
- INCAP - Nutrition Institute for Central America and Panama
- KAP - Knowledge, Attitudes and Practices
- LBW - Low Birth Weight
- MCH - Maternal Child Health
- NBCCA - National Bipartisan Commission on Central America
- OR - Operations Research
- ORS - Oral Rehydration Salts
- ORT - Oral Rehydration Therapy
- PAHO - Pan American Health Health Organization
- PASCCAP - Community Health Training Program for Central
America and Panama
- PEM - Protein Energy Malnutrition
- PVO - Private Voluntary Organization
- ROCAP - Regional Office for Central America and Panama - AID
- WHO - World Health Organization

I. PROJECT SUMMARY AND RECOMMENDATIONS

A. Recommendations

The Project Development Committee recommends that an \$8.0 million grant be authorized to implement the Oral Rehydration Therapy, Growth Monitoring and Nutrition Education project.

B. Summary Description

1. Goal and Purpose

The goal of the project is to reduce infant and child mortality and severe malnutrition in Central America and Panama. The purpose of the project is to increase the effective use of Oral Rehydration Therapy (ORT), Growth Monitoring (GM) and Appropriate Feeding Practices (AFP). The purpose will be accomplished by relying on technologies that are generally well developed and are now being used, to a limited degree, in Central America and Panama (CA/P) and in other developing countries. The project responds to AID's world-wide ORT initiatives and specifically to the National Bipartisan Commission on Central America (NBCCA) report's recommendations. Funds for the project were included in the Administration's request for an FY 1984 supplemental appropriation which was approved by Congress.

2. Background and Project Activities

A linkage between malnutrition (which exists in one form or another in approximately 60% of the children under age five in the region) and infection, causing a deterioration in nutritional status, increased susceptibility to more acute infections and, finally, severe malnutrition and often death is well documented in the CA/P region. One of the most common infections involved in this cycle is diarrheal diseases, which should be relatively easy to treat but, in fact, is a leading cause of infant death in the region.

ORT can reduce infant mortality caused by dehydration and GM can be used to identify children with a high risk of becoming malnourished and, therefore, susceptible to the malnutrition infection cycle. In most countries in the region, however, individuals ranging from health professionals to affected mothers have not been adequately introduced to these technologies and appropriate feeding practices are not widely used as part of the treatment of diarrheal diseases. In addition, knowledge gaps exist on the use of these technologies and in the development of educational packages needed to achieve their widespread dissemination.

The principal focus of the project will be to make appropriate treatments available to children under age five and pregnant women throughout the Region. Appropriate treatments are defined as adequate utilization of oral rehydration solutions and nutritional treatment of diarrheal cases, both during and after episodes of diarrhea, and prompt identification and nutritional treatment of protein-energy malnutrition.

The Nutrition Institute for Central America and Panama (INCAP), augmented with U.S. and Central American managerial and technical assistance, will carry out the project using a three-phase implementation methodology adopted from the lactation component of the Regional Nutrition Technical Outreach project (596-0104), which demonstrated its effectiveness for promoting national participation, planning and technology transfer.

Phase I: Promotion and Planning - The first twelve months of the project includes activities designed to improve national strategies and plans. Promotional visits will identify key institutions and leaders, planning guidelines will be developed, and specific studies will be carried out to provide the analytical base for the planning process. These activities will culminate in a regional seminar and national seminars at which implementation plans for the individual countries will be reviewed and agreed upon. In addition to carrying out a series of studies at the national level needed for planning purposes, INCAP will be increasing its ability to provide effective technology transfer by augmenting its staff, developing educational materials, expanding an information clearing house, and starting research activities.

Phase II: Implementation - This phase will take place during the remaining forty-eight months of the project. Activities will be designed to resolve specific constraints at the national level and provide the technology needed to carry out the national programs. While the relative emphasis will vary from country to country, activities will: (1) strengthen health service delivery systems and related information systems for evaluation and monitoring; (2) improve the technical knowledge and skills of the providers of health care through mass media programs; (3) expand the availability and improve the distribution of Oral Rehydration Salts (ORS); (4) provide scientific and technical information; and (5) increase research required to deal effectively with diarrheal disease and its nutritional consequences.

Phase III: Evaluation - This phase will take place simultaneously with the final six months of implementation under Phase II. National level programs will be evaluated to see if the overall purpose of the regional project to increase the use of ORT, GM, and AFP was achieved. The results will be discussed at a regional seminar and a final report will recommend future courses of action in dealing with the problems of diarrheal disease and malnutrition.

Within the context of the implementation methodology, the project components will constitute a coordinated and broad-based approach to ORT, GM and AFP by transferring technical knowledge and skills to the majority of professionals and households in the region.

Project Components

The project is composed of the following five components:

a. Promotion of Effective National Strategies and Plans

This component will a) mobilize support for extending the use of ORT, GM and AFP in the countries of the region; b) help INCAP focus and channel its efforts on the key national level decision-makers, institutions and constraints; and c) increase private sector involvement and improve donor coordination. INCAP will assist the countries to develop and/or improve their strategies and plans for increasing the use of ORT, GM and AFP by supporting a number of related specific activities. Planning guidelines for national strategies and plans will be developed and Knowledge, Attitudes and Practices (KAP) studies will be carried out to provide the required analysis on the target populations and providers of assistance. Specific studies will also be carried out on a national basis to examine program management, ORS production and logistic systems, financial management and budgetary requirements, approaches for increasing commercial sales and making mass communications programs more effective. The strategies and plans will be discussed, refined and promoted at both regional and national level seminars.

b. Strengthening Health Service Delivery and Information Systems

This component will help implement the recommendations of the general management and other studies carried out as part of the effort to promote and develop effective national strategies and plans and address the key institutional constraints identified in the specific national plans. This component will also strengthen the capability of national health information systems to monitor and evaluate the child mortality, diarrheal disease and malnutrition situation and the progress of national programs to increase the use of ORT, GM and AFP. Regional and national workshops will be held on several of these topics and technical assistance and training will be provided by INCAP staff and consultants as needed.

c. Improving Professional, Paraprofessional, and Community Worker Skills and Public Education

This component will help implement the recommendations of the KAP "Provider Study" by using INCAP staff and consultants to carry out training courses and provide related training materials to improve ORT, GM and AFP skills among physicians, nurses, pharmacists, nutritionists, paraprofessionals and community workers currently in practice. Basic training for community

workers will be provided during their study years. This component will also use INCAP staff and consultants to help the countries to improve/develop their mass media programs and will draw on the information and recommendations contained in the KAP "community study".

d. Increasing the Availability of Scientific and Technical Information

This component will disseminate the information needed to improve the effective use of ORT, GM and AFP in the region and carry out related research. A regional clearing-house will provide services such as a quarterly newsletter, materials for seminars, workshops and conferences, mailings of selected materials to targeted users, etc. Research activities will examine ways to extend the use of known ORT and related technologies as widely as possible and to develop additional practical technologies, case management techniques and educational packages required to deal effectively with diarrheal diseases and their nutritional consequences.

e. Increasing Availability and Improving Distribution of ORS

This component will deal with the increased demand and distribution problems for ORS that are expected to result from the other project components. Project consultants will help the countries in procurement planning, resolution of specific production and packaging problems and increasing commercial sales of ORS.

3. Summary Financial Plan (\$000)

<u>Project Component</u>	<u>ROCAP</u>	<u>INCAP</u>	<u>HOST COUNTRY COUNTERPART</u>	<u>TOTAL</u>
Management & Evaluation	1,298	650	---	1,948
Promotion & Training	1,403	---	730	2,133
Technical Assistance (Non-U.S.)	1,000	---	250	1,250
Technical Information and Dissemination	217	---	---	217
Operations & Eval. Studies	719	---	550	1,269
Research	916	200	---	1,116
Overhead	<u>1,666</u>	<u>250</u>	<u>---</u>	<u>1,916</u>
Sub-Total	7,219	1,100	1,530	9,849
U.S. Technical Assist.	<u>781</u>	<u>---</u>	<u>---</u>	<u>781</u>
TOTAL	8,000	1,100	1,530	10,630

C. Summary Findings

The Project Committee has reviewed all aspects of the proposed ORT, Growth Monitoring and Nutrition Education Project and finds that it is technically, financially, socially and economically sound, and consistent with the objectives set forth in ROCAP's CDSS strategy. The Committee has further found that INCAP is institutionally capable of administering the project.

D. Composition of Project Development Committee

ROCAP

Elena Brineman
Kevin Kelly
Thomas Totino
Edward Nadeau
Michael Deal
Victor Miron

INCAP

Hernan Delgado
Magdalena Fisher
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Victor Valverde
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Consultants

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Elizabeth Booth
Cathrine Crone Coburn
Maggie Huff
Marty Makinen
Rodrigo Arce

II. PROJECT BACKGROUND AND RATIONALE

A. Background

Although there are disparities in health and nutrition conditions among the seven countries in the Central America and Panama (CA/P) region (Costa Rica and Panama generally exhibit much higher and improved standards), a number of common problems exist which affect the ability of all the countries to achieve and sustain equitable growth. For example, poor socioeconomic conditions, inadequate health care systems and limited water and sanitation services result in infant and child mortality rates and incidence of severe malnutrition which are among the worst in Latin America and the Caribbean (Annex II.1 contains a series of tables which provide basic socioeconomic data for the region as well as information on specific indicators important to the health and nutrition sector).

Throughout the region, health and nutrition problems are more severe in rural areas, yet most available services are urban oriented. For instance, in Guatemala, with an overall Infant Mortality Rate (IMR) of 86 per 1,000 (see Table 1), the estimated IMR among the 60% of population living in rural areas is over 120, while for the 40% urban population the IMR may be as low as 40. The underserved rural communities of CA/P countries appear to have mortality rates far closer to the world developing country average of 120, than Table I implies.

TABLE 1
Infant Mortality and Malnutrition
in Central America

<u>Country</u>	<u>Infant Mortality Rate</u>	<u>1-4 Mortality Rate</u>	<u>Severe a/ Growth Retardation</u>
Belize	27 (1980)	2.2 (1980)	N.A.
Costa Rica	19 (1980)	1.1 (1980)	7.0 (1978)
El Salvador	85 (1980)	6.9 (1980)	10.4 (1978)
Guatemala	86 (1980)	12.4 (1980)	29.5 (1979/80)
Honduras	87 (1981)	4.3 (1979)	29.5 (1966)
Nicaragua	102 (1980)	3.6 (1977)	15.0 (1966)
Panama	21 (1981)	2.1 (1981)	11.6 (1980)

a/ 75% of median weight for age.

Public sector health budgets tend to be low and often are consumed by maintenance and administrative costs or by institutionalized medical attention and custodial services. Adequately trained personnel in the rural areas (particularly paraprofessionals) are scarce in several countries, as are facilities with proper and sufficient supplies. Consequently, access to basic

health care is limited, particularly in Honduras, Guatemala and El Salvador, where 75% of the Central American population lives.

Available data on infant and age 1-4 mortality rates, age 0-4 deaths as a percent of total deaths, and the probability of a rural child dying before age two suggest that the CA/P countries are divided into low (Costa Rica, Panama and Belize) and high (Guatemala, Honduras, Nicaragua and El Salvador) infant and child mortality groups. (Table I and Annex II.1 Table 2). The data also indicate that the average diet in the region is deficient in calories and proteins. Deficient maternal diets are a major factor contributing to low birth weights (LBW.) occurring in up to 30% of rural populations.

For children under the age of five in CA/P countries, recent studies on growth retardation have estimated that approximately 60% suffer from mild, moderate or severe malnutrition. The prevalence of moderate and severe malnutrition -- defined as weight for age below 75% of the standard median weight for the respective age and sex -- ranges from a low of 7% in Costa Rica to a high of 29.5% in Guatemala and Honduras (see Table I, above, and Annex II.1, Table 4). In Panama, where recent efforts at extending health services have helped reduce infant mortality, preschool malnutrition remains a major problem affecting one third of the children.

Malnutrition not only affects children's health but also their physical development, and it may impair learning ability. It also makes a child more susceptible to infections and reduces the natural ability to fight them off. For example, gastrointestinal and respiratory illnesses (i.e., influenza and pneumonia) are the leading reported causes of death, particularly in children, in most CA/P countries (Costa Rica and Panama being the exceptions).

Diarrheal disease is reported as the number one cause of infant death in Belize, El Salvador and Guatemala, and is believed to be the leading cause of infant death in Honduras. In Panama, it is the fourth most common cause of infant death. Only in Costa Rica is diarrhea a minor problem (see Table I and Annex II, Table 3). Of 101,000 annual deaths among children 0-5 years old, 21,000 are conservatively attributed to diarrhea (from 9% to 35% of infant deaths and 8% to 31% of recorded childhood deaths). This heavy toll from diarrhea takes no account of the contribution made by diarrhea to undernutrition, affecting up to 30% of children in some countries and contributing to some two thirds of all childhood deaths. An effective attack on diarrhea, reducing both fatality and nutritional consequences, will offer a major improvement in child survival and quality of life in the region.

B. The Problem: Malnutrition Infection Disease Cycle

The chain of events set in motion by the interaction of mild malnutrition and infection, resulting in deteriorating nutritional status and increased susceptibility to infections, followed by more acute infections

which finally result in severe malnutrition and often death is well documented in Central America. INCAP studies have demonstrated the important synergism of infection and malnutrition, with diarrheal illness the major contributor to resulting undernutrition and death. In up to one third of children, repeated episodes of diarrhea lead to severe protein energy malnutrition (PEM) and chronic diarrhea which are extremely difficult to treat. Studies done in Guatemala showed that children with LBW had a greater tendency to contract diarrhea and suffered greater nutritional consequences from a given episode. The cycle of LBW, diarrhea, PEM and further illness resulted in death for many. The infections most often involved in this downward spiral are diarrhea, respiratory infections and measles. Death is most often attributed to dehydration resulting from gastrointestinal disease or to an acute respiratory infection, but malnutrition, more often than not, has been a complicating factor. The natural negative trend in the malnutrition-infection pattern is further aggravated by the custom of withholding food during and immediately after diarrhea which is widely adhered to by both the medical community and mothers not only in CA/P countries, but in much of the rest of the world as well.

The interactions between growth retardation, chronic malnutrition and chronic diarrhea are as yet unclear. In fact, chronic diarrhea, its etiology and its impact on health is poorly understood. Furthermore, adequate methods of treating or managing cases of chronic diarrhea have not been established. Since chronic malnutrition in both women and children is by far the most common nutritional problem found in the region, there is an urgent need to clarify the interactions between these conditions, to establish adequate means for dealing with chronic diarrhea and most importantly, to intervene with early drug and dietary treatment to prevent its development. Practical interventions could then be transferred to the region's medical and public health community.

C. ORT, Growth Monitoring and Nutrition Education as a Response to the Problem

Several relatively simple primary health care technologies have been shown to have the potential for rapidly reducing infant mortality and severe malnutrition when they can be properly delivered and utilized at the community and household levels. Oral rehydration therapy, growth monitoring and related health and nutrition education stand out among these technologies.

It has been well documented that the use of ORT -- the concept of treating dehydration with orally administered fluids -- can prevent most deaths due to acute diarrhea in infants and young children. However, the sugar/salt solutions most often recommended for use in ORT do little toward resolving the resulting negative nutritional consequences of diarrheal disease. The role of oral rehydration salts (ORS) in the treatment or prevention of chronic diarrhea is also unclear. Although rehydration salts may prevent death from acute dehydration in severely undernourished children,

these same children are very likely to succumb to some other infectious agent at a later date. Thus, it is insufficient to try to markedly reduce mortality with the use of oral rehydration salts alone in areas where severe malnutrition is an important contributing factor to infant and young child mortality.

Recent research suggests that the use of traditional soups, drinks and other fluids as the means for administering the sugar/salt solutions may make ORT more culturally acceptable. They may also hold the key for a whole spectrum of food-based ORT interventions that could address both the problems of nutritional losses during diarrhea and, at the same time, make ORT more effective. Preliminary research results show that a combination of starches, sugars and amino acids may increase the amount of salt and water the intestines can absorb, thus decreasing the volume of diarrhea, something current ORT does not do. This phenomenon could be extremely important in convincing mothers and health care providers to use ORT, while the added nutrients would help address the nutritional problems which accompany acute bouts of diarrheal disease.

Evidence exists that early use of oral rehydration salts (ORS) at the community level, combined with education on simple actions which can be taken to improve environmental sanitation and personal hygiene, can have a positive effect on the nutritional status of young children. In addition, the positive effect of continued lactation in both preventing diarrhea or reducing its severity in young infants is well documented.

In Central America, the weaning period when new foods are introduced to an exclusively breastfed child is a particularly critical period, whether it takes place during the first month or at four to eight months of life. At this point new intestinal pathogens are introduced to the infant at the same time that the quantities of breastmilk being provided to the child are usually beginning to be inadequate to sustain optimum growth. Educating the health care community, both formal and informal, and particularly the mother on the management of the child through this critical period with a combined package that includes promotion of continued breastfeeding, dietary guidelines for weaning, treatment of diarrhea including dietary management during and after the diarrheal episode and simple sanitation measures holds substantial promise for reducing deaths and the development of severe malnutrition in Central American infants.

When used properly, with active participation of mothers, monitoring growth of newborn infants and preschool children can be a useful educational tool as well as serving as an effective means of detecting children who either are or are becoming malnourished and who are subject to an increased risk of severe illness or death. Often mothers in Central America do not recognize that a child is not thriving until it has contracted an acute illness such as diarrhea, measles or a severe respiratory disease. Early detection of faltering growth in infants and children may help avoid the onset of the

malnutrition infection interactions. Continued monitoring of infant or young child growth also can serve as a measure for defining recovery from acute illness and its after effects, assuring that a child who has been ill receives the extra care it needs until it is fully recovered.

Low birthweight infants are four times more likely to die than normal birthweight children in Central America, most dying in the first year of life. INCAP data suggest that the mother's nutritional status as well as her health during pregnancy are related to the production of LBW infants in poor rural populations. The establishment of early risk indicators for mothers who are likely to produce LBW infants, monitoring of maternal health, nutritional status and fetal growth during pregnancy; and the establishment and implementation of practical interventions or case management protocols for mothers who have a high risk of producing a LBW infant could substantially reduce infant mortality in the area. Examples of maternal interventions include educational packages, supplementary feeding or early detection and treatment of illnesses during pregnancy.

Methodologies for growth monitoring and identification of high risk infants and children are well established for Central America and need only be transferred to public health workers, the medical community and to mothers themselves in a clear and orderly fashion. However, the methodologies for establishing risk in mothers, fetuses and newborns and appropriate responses to offset these risks still need work before they are ready for widespread use by the health community.

Knowledge of ORT, growth monitoring, and related health-nutrition education technologies exists in Central America, however, in most countries one or more of these technologies have not been presented to the health community and to the public in an organized, systematic way. Nor, despite the substantial number of health professionals working with the technologies, have ORT and appropriate feeding practices been combined in the management of diarrheal diseases. In addition, knowledge gaps still exist on the use of some of these technologies, in carrying out required case management follow-up activities and in the appropriate content of accompanying educational packages. Also, with the possible exception of Costa Rica, there are major constraints in the systems which are supposed to deliver ORT, growth monitoring (infant and prenatal) and education to communities and households in each country.

D. Country Responses to the Problem and Constraints in Applications of Technologies

In most of the countries of the Central American isthmus, both government and non-government institutions play important roles in delivering health services. In spite of this, adequate health service coverage by the formal sector is low in Honduras, Guatemala and El Salvador where over 75% of the population of Central America lives. Coverage is also inadequate for

substantial portions of the populations of Nicaragua, Panama and Belize, despite recent advances in extending coverage in those countries.

Under the coordination of the Panamerican Health Organization (PAHO) and at the request of the Contadora Group for Peace in Central America, each of the Central American countries has recently reviewed and restated their priorities in the health sector. This exercise, which is known as the Puente de Paz (Peace Bridge), was undertaken to help the Central American countries define and find financing to meet their most pressing health needs.

At the Sept. 24-Oct. 1, 1984 meeting of the Pan American Health Organization's Directing Council, a coordinated health plan was endorsed by the Ministers of Health of Central America and Panama. While supporting the proposed plan, the council also recommended the inclusion of Belize, with Guatemala agreeing.

Under the coordinated health plan, all of the countries have made the extension of health services using a primary health care strategy a government priority. Within this context, they have also placed support for child survival strategies among their top priorities. These strategies generally include prevention and control of diarrheal diseases; growth monitoring; promotion of breastfeeding and improved infant feeding practices; food, nutrition and environmental sanitation education; immunizations; management of acute respiratory diseases, improved prenatal care and family planning. As part of the Puente de Paz initiative each country has developed an initial child survival plan, including individual project profiles for submission to donor agencies, with assistance from PAHO, UNICEF and INCAP staff (see Annex II.3 and II.4 for individual country programs and goals for extending use of ORT and growth monitoring under the child survival plans).

The Puente de Paz exercise has served to reaffirm the priority that most governments in the area already have given to many of the programs that make up their child survival plans, including control of diarrheal diseases, health and nutrition education and maternal-child health with prenatal and infant growth monitoring. All of the Central American countries currently have diarrheal control programs which include the use of ORT, although there is considerable variability in degree of organization, coverage and effectiveness of these programs. The strongest is in Costa Rica and the weakest in Guatemala. None of the programs effectively deal with the problem of dietary management during or following diarrheal disease episodes.

Principal constraints to the use of ORT are generally organizational, management and logistics problems. Distribution of salts is a major problem almost everywhere, but Costa Rica. Because of inadequate management information systems and program evaluation, most country directors do not have a clear idea of potential needs or current coverage, much less effectiveness of their ORT programs. These information gaps lead to real problems in program planning and management.

Technical norms and guidelines as well as program organization, information and logistics systems, are generally weak or often lacking. Training of health care delivery personnel in growth monitoring and educational techniques has usually not been well organized or systematic. Appropriate training and educational methods and materials are generally not available or are not integrated into the health care delivery systems. Educational activities which are supposed to complement ORT programs are also generally weak. Many health professionals and paraprofessionals are not yet trained in the use of ORT, much less in the dietary management of diarrhea. Local production and commercial distribution of salts by the private sector or by semi-autonomous government affiliated institutions would be possible at reasonable cost in all countries if sufficient demand existed. However, effective mass communications and public education programs and/or government purchase and distribution is necessary to initially raise effective demand.

A major technical gap constrains the application of the concept of identification of high risk mothers who are likely to produce LBW babies. There is currently no reliable means of measuring nutritional status of pregnant women who are seen only once or twice during their pregnancies, a common occurrence in Central America. In addition, interventions for high risk mothers are as yet ill defined.

The development of educational, prenatal risk identification and growth monitoring programs from both a technical as well as a management/delivery perspective lag behind delivery of ORS. Because of the close natural link which exists between educational activities, prevention and treatment of malnutrition and control of diarrheal diseases these weaknesses have a negative impact on the effectiveness of programs which try to use ORT in diarrhea control and to reduce infant and young child mortality. (Tables 2-4 contain summary tables on current status and major constraints of country ORT, Growth and Education programs).

TABLE 2
Status and Constraints of ORT Programs in Central America

	<u>BELIZE</u>	<u>COSTA RICA</u>	<u>EL SALVADOR</u>	<u>GUATEMALA</u>	<u>HONDURAS</u>	<u>NICARAGUA</u>	<u>PANAMA</u>
Types of Programs/Coverage							
-Public Sector	Urban areas	National	50%	2 departments	National	National	National
-Private Sector	--	National	National	Main urban areas	Main urban areas	--	Main urban areas
-PVOs	--	--	Partial	No	No	--	--
Norms in Health Sector Programs							
-Exist	Yes	Yes	Yes	In preparation	Yes	Yes	Yes
-Applied	Partial	Yes	Partial	No	Partial	Yes	Yes
Adequate Program Organization (MOH/SS)	Partial	Yes	Partial	No	Yes	Yes	Yes
Adequate Information System on DDC (MOH/SS)	No	Yes	Partial	No	Partial	Partial	Partial
Adequate Logistics (MOH/SS)	No	Yes	No	No	No	No	No
ORS Availability							
-Donated	100%	0	75%	100%	50-75%	100%	100%
-Public Sector Production	0	0	--	--	25-50%	0	0
-Private Sector Production	0	100%	25%	--	-	0	0
Use of ORS in Hospitals							
-% of Public Hospitals	100%	100%	50%	10%	75%	100%	100%
-% of Private Hospitals	--	?	?	?	?	--	?
Training (MOH/SS) have received some training in ORT							
-Public Sector	100%	100%	50%	Physicians	100%	100%	100%
-Private Sector	--	100%	--	--	0	--	--
Educational Activities (MOH/SS) (Program exists or existed at some point of time)							
-Mass Communications	No	Yes	No	No	Yes	Yes	No
-Personal Communications	Yes	Yes	Yes	No	Yes	Yes	Yes
-Printed Material	Yes	Yes	Yes	No	Yes	Yes	Yes
Availability of Knowledge and Salts at Household Level	20-30%	60%	10-20%	5%	30-40%	75%	20-30%
Use of Special Dietary Treatment During and After Diarrhea/Adequate Dietary Management of Diarrhea	No	No	No	No	No	No	No

TABLE 3

Status and Constraints of Growth Monitoring Programs in Central America

	<u>BELIZE</u>	<u>COSTA RICA</u>	<u>EL SALVADOR</u>	<u>GUATEMALA</u>	<u>HONDURAS</u>	<u>NICARAGUA</u>	<u>PANAMA</u>
Types of Public Sector Programs/Coverage							
0-5 Anthropometry	Being implemented	Yes	Partial	No	No	No	Yes
Birthweight	Yes/?	Yes-95%	Hospitals	Hospitals	Hospitals	Hospitals	Yes/90%
Prenatal care (one or more contracts)	Yes/?	Yes-90%	Yes-40%	Yes-25%	Yes-25%	Yes/?	Yes/90%
Management of severe malnutrition	Yes	Yes	No	Some Private Sect.	No	Yes	Yes
Existence of Norms (MOH/SS)							
Exist (all programs)	Yes	Yes	In preparation	In preparation	In preparation	Yes	Yes
Applied (all programs)	Partial	Yes	No	No	No	Partial	Partial
Adequate Program Organization (MOH/SS)	Partial	Yes	Partial	No	No	Partial	Yes
Adequate Information System (MOH/SS)	Partial	Partial	Partial	No	No	Partial	Yes
Use Anthropometry for Growth Monitoring	No	Partial	No	No	No	No	No
Use Growth Monitoring as an Educational Tool	No	No	No	No	No	No	No
Use Maternal Anthropometry to Predict Risk	NO	No	No	No	No	No	No

TABLE 4

Status and Constraints of Health and Education*
in Central America and Panama

	<u>COSTA RICA</u>	<u>EL SALVADOR</u>	<u>GUATEMALA</u>	<u>HONDURAS</u>	<u>NICARAGUA</u>	<u>PANAMA</u>
Type of Program/Coverage						
- Public	Yes	Partial	No	No	Yes	Partial
- Private/PVO's	no	Partial	Partial	Partial	No	No
Existence of Education Norms in Health Sector Programs						
- Existing	Yes	Yes	No	No	Yes	Partial
- Applied	Yes	Partial	No	No	Yes	Partial
Adequate Program Organization (MOH/SS)	Partial	Partial	No	Partial	Partial	Partial
Adequate Information System (MOH/SS) to support Education Programs	Partial	Partial	No	Partial	Partial	Partial
Training (Training activities in health/nutrition education currently exist						
- Public Sector	Partial	Yes	Partial	Partial	Yes	Partial
- Private Sector	No	No	Partial	No	No	No
Educational Activities (MOH/SS) (Program exists or existed)						
- Mass Communication	Partial	No	No	Partial	Partial	No
- Personal Communication	Partial	Partial	Partial	Partial	Partial	Partial
- Printed Material	Partial	Partial	Partial	Partial	Partial	Partial
*Topics related to:						
Feeding of Child						
Feeding of the Mother						
Recuperation of Illness						
Sanitation and Hygiene						

E. Rationale for a Regional Project

Two alternative approaches to addressing the problem of infant mortality due to diarrheal disease and severe malnutrition were considered before selecting the design proposed in this paper. The first was to separate the ORT, Growth Monitoring and Educational activities into distinct projects. This alternative was rejected for two reasons: The three activities are, in fact, mutually reinforcing with the growth monitoring and education activities providing important inputs into the management of diarrhea and expanding use of ORT. Furthermore, because of the breadth of skills required of project staff in any one of the programs and similarity between staff needs in all three, it was determined that project staff could be more effectively used and considerable savings could be realized by having the three activities combined into one project.

The second approach was not to do a regional project, but to promote a series of bilateral projects in those countries where infant mortality and severe malnutrition are most severe. While such an approach could be expected to achieve independent results in each country, it would suffer from:

-- The loss of economies of scale in provision of technical assistance, research, improved planning methods, development of training and educational methods and materials, development of improved management systems and dissemination of technical information; and

-- Difficulty in mobilizing and utilizing the considerable technical expertise which already exists in the region which, if done properly, will leave an institutional/human resource base capable of providing technical assistance and carrying out other follow-on activities in the future.

The development of a series of bilateral projects would cost more and would also require a great deal more management time and effort on the part of the AID Missions in the region. In order to include necessary technical expertise, which usually entails dollar costs, full scale DA projects would have to be developed in most cases and separate technical assistance contracts executed for each project. Considerable savings can be achieved by using regional expertise to the maximum extent possible for technical assistance and training. Furthermore because of language and cultural barriers, high quality regional expertise is often more effective than outside consultants and is usually preferred by CA/P counterparts. There is often considerable resistance on the part of CA/P host country counterparts to the inclusion of high cost technical assistance in bilateral projects, frequently resulting in insufficient technical support once projects are underway. Concentrating technical support services under a regional project would alleviate many of these problems.

Another important factor in choosing the proposed approach is the capacity of the nutrition institute for Central America and Panama (INCAP) to

implement the project on a regional basis (see Section V.B. for more detail on INCAP). INCAP's natural position of leadership in health and nutrition is well known and recognized by the CA/P countries and professionals, as well as by other donors. Also, INCAP has been specifically requested by its member countries to provide this type of assistance.

The reduction of infant and child mortality, the control of diarrheal disease and the use of ORT, Growth Monitoring and Education to address the problems of severe malnutrition through primary health care are stated priorities for PAHO and UNICEF as well as for INCAP and its member countries. The Peace Bridge (Puente de Paz) initiative, which PAHO is coordinating for the Contadora Group to help the Central American countries define and find financing to meet their most pressing needs, includes these activities. It is expected that health assistance from European and other donors will be made available on a bilateral basis to meet some of these defined needs. In addition, UNICEF funding is also available to support some bilateral programs in ORT, growth monitoring and education. What is missing in these efforts is the wide range of appropriate technical expertise necessary to help countries plan and implement their programs effectively and thus maximize the use of foreign aid assistance. Over the past two years, UNICEF, PAHO, PVOs and USAIDs in the region, as well as the Central American governments, have increasingly looked to INCAP to help fill this technical assistance gap.

In light of the above considerations and the general recognition of the need to address child mortality and malnutrition, the Mission believes the proposed approach is the most appropriate and likely to result in long-term benefits to the entire region. The Mission also believes that the regional approach will encourage donor coordination in a unified strategy aimed at this problem. INCAP's links with PAHO and rapidly growing relationship with UNICEF create the potential for a coordinated approach with two of the region's major donors in maternal and infant health.

F. Relationship of the Project to AID Policy and Projects

1. Relationship to AID Policy and Overall U.S. Strategy for the Region

The project addresses AID's health priorities of reducing infant mortality and malnutrition through utilization of cost effective technologies within primary health care and is consistent with AID's nutrition strategy which calls for reducing severe protein calorie malnutrition by supporting sectoral strategies which are likely to have a positive impact on the nutritional status of women and infants. The project also involves the strengthening of regional institutions and their ability to develop and transfer relevant technologies to national entities and to serve as a conduit for strengthening national institutions. As such, the project flows directly from ROCAP's development strategy.

A new impetus for increasing U.S. assistance in these areas has been provided by the report to the President of the National Bipartisan Commission for Central America (NBCCA). This report devoted a full chapter to human development. With respect to health, the NBCCA report noted that, while there are differences among countries, health conditions in general are "extremely poor" and that "respiratory illness, diarrheal diseases, and infectious and parasitic diseases that are controlled or cured in developed countries are often fatal in Central America".

The NBCCA report also noted the past role of U.S. assistance in expanding health services in the region. It went on to endorse an extension of primary health care services and increased U.S. assistance to support that extension.

2. Relationship to ROCAP Strategy and Projects

ROCAP has consistently recognized the importance of health and nutrition to social and economic development and political stability in Central America. Over the past four years, ROCAP, through its Regional Nutrition Technical Outreach Project (596-0104) and other related activities has assisted INCAP in its efforts to become more responsive to its member countries' needs, to transfer the considerable practical technical and operational knowledge INCAP has accumulated during its thirty-five years of existence and to more effectively assume its leadership role in the region in food and nutrition and related aspects in planning, health, agriculture and education. This effort has been and continues to be consistent with ROCAP's general goals and strategies for each of the key regional technical institutes in Central America.

The proposed ORT, growth monitoring and nutrition education project is a logical next step in this process. The project builds on the positive experiences and the technical assistance and outreach systems and methods developed under the Regional Nutrition Technical Outreach Project and the Regional Lactation Promotion Project, which began in August 1981 and September 1982 respectively. These previous projects focused primarily on strengthening INCAP's outreach mechanisms and transfer of knowledge gained through years of research. The ORT, Growth Monitoring and Nutrition Education project, together with its proposed sister project (Technical Support for Food Assistance Programs, 596-0116), will, for the first time, offer an integrated package including applied and operational research, technical assistance and transfer and education and training, all aimed at achieving a single high priority objective.

The development of adequate treatment of diarrheal disease, use of growth monitoring and development of complementary education activities are all basic to the effective use of food assistance (including PL 480) in the region. These efforts will be tied to food assistance programs through numerous crossovers between the two projects. The project contemplates the

active participation of host country directors or technical personnel plus PVO staff involved in food assistance programs in the promotional, technical assistance and training activities planned under both projects.

3. Relationship to Bilateral USAIDs

a. Honduras

Honduras is the only country in the region where bilateral AID projects specifically include systematic efforts to attain effective use of ORT, growth monitoring and related health and nutrition education. Over the past several years, the USAID/Honduras Health Sector I and S&T Bureau's Mass Media and Health Practices projects have supported the establishment of a mass media education campaign, local production of oral rehydration salts, training of health sector personnel and reforms in the health management, administrative and logistics systems aimed at attaining wide spread use of ORT and other priority health interventions such as immunizations and control of tuberculosis and malaria. Although maternal child health and nutrition have recently been designated as priority programs by the Honduran government, work on extending these programs has barely begun. A new CARE OPG is under development which will help support the use of growth monitoring, and health/nutrition education in the health and other sectors and will complement PL 480 Title II activities in Honduras. This project envisions contracting INCAP for the bulk of its technical assistance needs.

It is expected that the regional project will draw heavily on Honduran experiences to date, particularly those relating to mass media education, and will provide additional technical support needed to reinforce work being carried out under Health Sector I, the CARE OPG and PL 480 Title II programs, especially in growth monitoring and appropriate related feeding practices. USAID efforts in community based distribution and commercial retail sales for family planning commodities and education may also eventually be advantageously linked with ORT, growth monitoring and educational activities as a spin off of the regional project.

b. Guatemala

USAID/Guatemala's Community Based Health and Nutrition Systems project is designed to deliver an integrated package of primary health care interventions including ORT, growth monitoring and limited health and nutrition education through the public health system. However, the Ministry of Health and Social Security systems together only cover about 40% of the rural population. Furthermore, the USAID project is only targeted for 3 of the 22 departments in the country. A new USAID project now under development contemplates providing primary health care services to currently underserved agricultural workers using a fee for service private sector approach. The regional project can be expected to provide technical support and guidance to that project. In addition PL 480 Title II programs with the Ministry of

Health are likely to receive assistance from the regional project and there is interest on the part of USAID/Guatemala and family planning associations in further linking community based distribution programs with ORT and nutrition activities.

c. El Salvador

USAID/El Salvador recently signed a \$25 million project to help revitalize the country's health care system by meeting the critical short term needs of the Ministry for essential goods and services and improving the institutional capacity of the Ministry to more effectively execute their existing systems in health supplies management, maintenance and information management. This project includes the purchase of oral rehydration salts among other vital drugs and equipment. The regional project will in no way duplicate USAID efforts; rather the technical support provided under the regional project will complement the efforts of the El Salvador project by providing technical assistance in areas not included under the bilateral program. USAID/El Salvador plans on beginning development of a new project this spring to reinforce health services including vaccination, diarrheal disease control and MCH programs. INCAP will assist in the development of this project, thus assuring complementarity between USAID, UNICEF and INCAP efforts.

d. Costa Rica

The Health Services Support project recently signed by USAID/Costa Rica provides funds for the purchase of drugs and disposable medical supplies to help the Costa Rican government maintain adequate health care services during the current severe economic crisis. Assistance in carrying out necessary administrative reforms in the health sector is being provided through a complementary USAID project.

A special relationship is envisioned between Costa Rican institutions and the proposed regional project. Costa Rica has far more experience than any of the other countries in the region in the use of ORT, growth monitoring and related health and nutrition education. It is expected that collaborative agreements will be signed between INCAP and Costa Rican institutions to carry out specific research, training and curriculum development activities under the project. Costa Rican personnel will also be frequently used to provide technical assistance to public and private agencies in the other countries of Central America. In return, it is expected that the regional project will assist the Costa Rican system in areas such as financial and management analyses, evaluation, information systems and improvement of their education programs.

e. Panama

USAID/Panama has been gradually phasing out of activities in the health sector. Currently, only population programs are receiving USAID support, although an AID/W-funded project (using INCAP for technical assistance) is promoting lactation and improved infant feeding practices in Panama. USAID/Panama is just beginning development of commercial retail sales programs in support of family planning programs.

The proposed regional project, combined with Panamanian and other donor resources, will be able to meet most of the Government's needs in attaining effective use of ORT, growth monitoring and related health nutrition education. The project will be a mechanism through which AID can continue to help Panama address its still serious nutritional problems without undertaking a major bilateral effort. The regional program may also indirectly prove useful in furthering USAID and counterpart efforts in family planning education and commercial retail sales by strengthening institutional capacity to carry out maternal infant education in general and creating a framework for commercial retail sales of rehydration salts in remote areas.

f. Belize

USAID/Belize is in the process of developing a new health sector project (Increased Productivity through Better Health) which has three components: malaria control, potable water and sanitation. The potable water component will complement UNICEF efforts and a USAID OPG with CARE by covering all districts of Belize not included in the other two efforts. The sanitation component includes latrine construction and sanitation education. The Mission is also developing an OPG with the Breast is Best League to expand their lactation promotion activities.

Project Concern and Project Hope have small primary health care and paraprofessional training programs in Belize under AID/W matching grants. It is expected that the regional project will contribute to the educational efforts of each of these projects.

G. Other Donor Activities

Aside from AID, the principal donors for Central America in Maternal Child Health (MCH), immunizations, diarrheal disease control and ORT, health and nutrition education and other related subjects are UNICEF, PAHO and to a more limited extent UNFPA. In some countries, a few international PVOs also provide some assistance. Apart from their contribution through INCAP, PAHO provides some technical advisors, usually on a bilateral basis in MCH and the expanded program for immunizations. In addition, PAHO regularly provides training scholarships, some of which are used for activities related to this project, and undertakes some information dissemination activities, including the publication of "Diarrhea Dialogue". PAHO has also developed a training

course for supervisors of ORT programs, which it plans to hold for Central American participants sometime during 1985 at INCAP. PAHO's coordinating role in the Puente de Paz initiative has already been described.

In terms of total funding levels, UNICEF, with its Child Survival and ORS procurement programs, is probably the most important donor in the region besides AID. As part of the Puente de Paz initiative each of the Central American countries developed a Child Survival Plan with technical assistance from UNICEF, INCAP and PAHO. These plans have recently been reviewed by UNICEF, PAHO and INCAP staff and a package will be compiled shortly for submission by UNICEF to its donor community for funding. It is anticipated that a substantial portion of this package will receive support. UNICEF funding will be exclusively bilateral. INCAP and UNICEF view their respective programs as being very complimentary with UNICEF covering many in-country and ORS commodity costs and the INCAP/ROCAP project providing technical support and guidance on a regional basis (see Annex II.4 for individual country goals and funding needed to extend the use of ORT and monitoring of growth and development established under each countries Child Survival Plan).

III. PROJECT DESCRIPTION

A. Goal, Purpose, and Beneficiaries

The goal of the project is to reduce infant and child mortality and severe malnutrition in Central America and Panama.

The purpose of the project is to increase the effective use of ORT, Growth Monitoring (GM) and Appropriate Feeding Practices (AFP) in Central America and Panama. The purpose will be accomplished by relying on technologies that are generally well developed and are being used in other parts of the world and, to a limited degree, in Central America and Panama.

Due to its capacity building character, the project will have direct and indirect beneficiaries. Those benefitting most directly will be managers, professionals and other personnel in the public and private sector institutions of the region who will have an increased technical and managerial capacity to plan, implement and evaluate programs to increase the effective use of ORT, GM and AFP. Perhaps more important than these direct beneficiaries will be the indirect beneficiaries, families who will learn to use ORT, GM and AFP to improve the health of their children. The project research will not only benefit children and families of the region, but may also improve child survival prospects world-wide. INCAP is uniquely suited for this role.

B. Overall Project Strategy and Phasing

The overall strategy of this project is to increase the use of ORT, GM and AFP through promotion and planning activities, research and technology development, technical assistance and training in order to transfer the technological knowledge and skills to the majority of professionals and households in the region. This requires a broad-based, multisystem approach with many components organized in such a way that the national professionals can plan and implement effectively. In some cases, technical, medical and educational packages are already developed and can be organized and transferred almost immediately. In others, country specific adaptations will be necessary and/or field research will be required before technology transfer can be undertaken.

The activities of this project will be carried out in three phases: promotion/planning, implementation and evaluation. This methodology was developed under the regional lactation project and has been shown to be successful in maximizing national level participation and widespread dissemination of research results and program experiences.

Phase 1: Promotion and Planning: This phase covers the first 12 months of the project. Its main objectives are promotion activities designed to improve national strategies and plans, including development of guidelines,

carrying out of planning studies, development of draft strategies and implementation plans by each country, and regional and national seminars; start-up of development of educational materials; review of health information needs; start-up of a regional information center; and development and start-up of research activities.

Phase 2: Implementation: This phase will last 48 months and will begin immediately following the completion of the national seminars and approval of national strategies. The objectives of this phase are to strengthen health services delivery systems; improve professional and paraprofessional education; educate the public; strengthen health information systems; disseminate scientific and technical information; strengthen ORS production systems; strengthen commercial sales of ORS; and carry out research.

Phase 3: Evaluation: This phase will occur during the last six months of the project. The objective of this phase will be to evaluate the project in terms of how well it achieved its outputs and its purpose of increasing the use of ORT, GM and AFP in the region. Activities include follow-up studies, review of documents, the convening of another Regional Seminar, and the preparation and publication of a final report. The final report will recommend future courses of action in dealing with the problems of diarrheal disease and malnutrition.

INCAP will manage this project with U.S. and Central American managerial and technical assistance. To successfully implement the project, INCAP will augment its current staff capability and will mobilize existing knowledge and technical resources in the region to achieve the project purpose. Where specialized technical skills not generally available in Central America are required, INCAP will draw on central AID projects such as the PRITECH project and other expertise available from the U.S. and the international health and nutrition communities. Responsibility for implementing and funding national programs will be with national counterparts, drawing on bilateral funding as needed.

C. Role of the Private Sector

To increase the effective use of ORT, GM and AFP in the region, substantial involvement of the private sector is essential. Health care in Central America is provided by the public sector through ministries of health and social security institutes, the formal for-profit medical profession, private non-profit groups and a substantial non-formal health care sector, including pharmacies and other retail outlets, midwives and traditional healers. In some countries, notably Honduras and Guatemala, health care coverage by the formal health care system, public and private, is limited.

Working with national task force groups made up of public and private sector representatives, including PVOs, key professional associations and universities, INCAP project staff and consultants will help the member

countries review their current situation regarding use of ORT, GM and AFP in both the public and private sectors and develop broad-based national strategies and plans to expand use of these technologies. The diagnostic and planning studies will be structured in such a way as to encourage maximum use of the private sector in the implementation of the national strategies.

Private sector groups such as professional associations, including associations of pharmacists and pharmaceutical retailers, private universities, private voluntary organizations and private family planning associations will be included in the project's promotion, planning, training and educational and technical information dissemination activities. The project will encourage greater reliance on commercial sales of ORS through pharmacies and shops. Operations research in educational materials development will help design appropriate complementary education methods for retail distribution systems.

The project will provide funding to contract short term technical assistance drawing on Central America and Panamanian resources when the required assistance is not available at INCAP. Traditionally, INCAP has drawn from both the private and public sectors in contracting short term technical assistance. Under the project, INCAP will continue to rely heavily on the Central American private sector for this type of assistance, particularly in the areas of management expertise, commercial retail sales, ORS production and assistance with design of mass communications programs.

D. Project Components

1. Promotion of Effective National Strategies and Plans

Early in Phase 1 of the project, a regional promotion plan will be developed, giving special attention to strengthening private sector involvement and identifying key decision-makers in government, private voluntary organizations, the medical and nursing community, the private pharmaceutical companies, international institutions, and donors, likely to be important for project success. Visits will be made to participating countries to explain the project to key national counterparts and the donor community. Meetings will be held with the principal donors and with key experts and representatives of potential collaborating institutions (for example, Costa Rica's Hospital del Nino and major PVOs) to discuss the needs of the countries in the region in increasing the effective use of ORT, GM and AFP, and the role each expert, institution or donor can play in helping achieve the project goals. This effort will promote coordination among donors, technical leaders and key technical institutions in the region, will engage key professionals in support of the project and encourage them to join in the strategy formulation and plan development.

Regional and national seminars to be held at the end of the first year and again half way through the life of the project will serve as

the center piece for promotion and planning activities. Important private and public sector technical and decision-making representatives will participate. In addition, INCAP will hold regional workshops for opinion leaders in the medical communities of the region and for PVOs to strengthen their involvement in the promotion and planning process.

The major objective of this component is to assist the countries to improve their strategies and plans for increasing the use of ORT, GM and AFP. Task Force groups representing each country will present a new or improved national strategy and plan at the regional seminar. About eight representatives will be chosen from each country to form the task force group and undertake the studies needed to prepare the draft strategies and plans and to prepare the actual documents. The representatives will be professionals from both the public and private sector with technical responsibility for diarrheal disease, growth monitoring and health/nutrition education programs or activities in their countries. INCAP will undertake a number of activities (e.g., the development of planning guidelines and an information base) to help the countries prepare these draft strategies and plans during the months leading up to the Regional Seminar.

In helping to develop the information base, INCAP staff and consultants will participate with the professional groups in each country to carry out a "community" study, a "provider" study, and selected "systems" studies. The community study is needed to understand the knowledge, attitudes and practices (KAP) of the target population including their current sources of care; their ideas about diarrhea, feeding of children, and child growth and prenatal care; their use of ORT; and their current expenditures on food and on drugs, especially ORT. This study will rely heavily on anthropological techniques to provide information as rapidly and as cheaply as possible.

The provider study will gather information on the current knowledge, skills and attitudes of existing medical, nursing, pharmacy, paraprofessional and village workers about diarrhea, ORT, GM and AFP in both the public and private sectors. It will also analyze the curricula, training time, training materials and trainer KAP on these topics in the professional and paraprofessional schools and training centers. A school curriculum review of primary and secondary education materials on diarrheal disease, nutrition and feeding practices, child growth and ORT will also be done.

Selected systems studies will be carried out to improve the strategies and plans for these technologies. These initial assessments will only go into sufficient detail to define the current status, major problems and strategy alternatives of national programs. These reviews will draw on recent studies where they already exist in a country. In depth analysis of major problems to identify potential solutions will be done later, as a part of operations research in countries where this is needed. Examples of systems studies to be undertaken include: health services program management, ORS

production and logistics, financial systems, commercial sales feasibility and mass communications delivery systems.

The regional seminar will represent the cumulative work of the first year of the project by the countries and by INCAP. Its expected outcome, a draft national strategy and plan in each country for increasing the effective use of ORT, growth monitoring, and related education, will form the basis for extensive discussions in each country in preparation for national seminars.

INCAP and the regional seminar participants will plan national seminars to be held in each country. The objective of the national seminars is to promote the draft strategies and plans for that country, improve them, and develop detailed plans for their implementation. It is expected that about 25-30 professionals from each country, plus INCAP staff and consultants will attend the national seminars. Key decision-makers will be invited in order to gain political support and consensus on the implementation phase. The national seminars are expected to occur as soon as possible after the regional seminar.

Following the national seminars, INCAP will promote the approval of these revised strategies and plans by the government and by key private sector groups. Phase 2 (Implementation) will begin in each country when the approvals have been secured and, subsequently, INCAP will host annual review/planning meetings at the regional level and in each country to discuss progress in implementation to date, to review and improve the strategies and plans, and to make detailed implementation plans for the coming year to continue progress in increasing the effective use of ORT, GM and AFP. This should insure that national strategies and plans continue to improve over the life of the project. A mid-project regional seminar will be held during the third year of the project to review progress in improving country programs, to maintain motivation and to facilitate exchange of experiences between countries. Phase II will also include the Regional Workshop for Opinion Leaders and a workshop to strengthen PVO involvement.

To meet the objective of this component, INCAP will both carry out and coordinate technical assistance to the countries. Technical planning specialist consultants will be used as needed.

TABLE 5
SUMMARY OF MAJOR PROJECT OUTPUTS BY COMPONENT
1. Promotion of Effective National Strategies and Plans

<u>Objectives:</u>	<u>Phase I - Planning</u>	<u>Phase II - Implementation</u>	<u>Phase III - Evaluation</u>
a. Effective national strategies developed and implemented.	a. Regional Promotion Plan prepared.	a. Regional Workshop to strengthen private sector involvement.	a. Final Regional seminar to discuss results of project.
b. Increased private sector involvement.	b. Promotional visits made to each country, key institutions and leaders identified.	b. Regional Workshop to strengthen involvement of opinion leaders.	b. Final Report prepared and distributed.
c. Improved donor coordination.	c. Country Planning and assessment guidelines developed.	c. Annual regional reviews of progress in implementing plans.	
d. Increased involvement of key health sector opinion leaders.	d. Analytical base for planning developed by completing the following studies for each country: (1) Provider Study (2) Community Study (3) Health Services Management and Logistics Study (4) Health Information Systems Study (5) Finance and Economic Benefits Study (6) ORS Production and Commercial Sales Feasibility (7) Training Systems Review (8) Mass Communication Systems Study	d. Annual national reviews of progress in implementing plans. e. Annual Work Plans developed on regional and national basis to program technical assistance and training. f. National Plans revised as necessary. g. Mid Project Regional Seminar to discuss national plans and review results. h. Technical assistance to support countries in planning and promotion activities.	
	e. Draft National Plans completed.		
	f. Regional Seminar to discuss national plans and review results.		
	g. National Seminars to refine and approve plans.		
	h. National Plans approved		
	i. Technical assistance to CA/P countries for planning and promotion activities.		

2. Strengthening Health Services Delivery and Information Systems

The objective of this component is to strengthen health service delivery systems for ORT, GM and AFP.

The major strengthening activities will occur in Phase 2 and will be based on the planning studies carried out and the revised strategies and plans of each country. Activities of this component will include development of implementation guidelines; technical assistance to the public and important private sector delivery systems in improving program, logistics, and financial management for these technologies; and operations research. Information systems will also be established or improved to assist in monitoring and evaluating progress.

INCAP staff and consultants will help improve program management and related financial planning and management systems such as financial analysis, budgeting, and accounting in support of ORT, GM and AFP programs through technical assistance and training courses. During Phase 1, the management study, the logistics study, and the finance study will elucidate the constraints and the revised national strategies and plans will include priorities for improvement. Likely areas for improvement include the design of organizational structures and staffing patterns for effective ORT, GM and AFP programs; the planning and distribution of human resources; day-to-day operations management (work planning, scheduling, and supervision); and improvement of management information systems for monitoring progress.

INCAP staff and consultants will carry out at least four regional senior manager courses. Three will be on logistics, financial analysis and management information systems. In addition, INCAP will provide small amounts of funding to encourage and support national in-country training on project related management and financial issues for mid-level managers. The bulk of funding for national courses will come from national budgets or through bilateral assistance. National training will be done by host country staff with INCAP assistance.

An important way for delivery system improvements to occur is through INCAP assistance to public and private organizations in carrying out operations research (OR) on key implementation issues. For example, INCAP could help organizations consider the pros and cons of community-based versus clinic-based delivery systems or look at the costs and benefits of different options for distributing ORS. Depending on the nature of the problems, INCAP might give assistance to each country separately. However, many problems will be common and INCAP can help coordinate OR workshops and training for common problems on a regional basis.

Another important way of improving program management systems will be to monitor and evaluate the child mortality, diarrheal disease, and malnutrition situation and the progress of the programs to increase use of ORT, GM and AFP. While a great deal of information has already been gathered, INCAP and its counterparts will analyze the completeness and quality of the information for purposes of planning and evaluation of country programs and the project and these findings will be discussed during the Regional Seminars.

INCAP will then help the countries implement improved information systems. It is expected that coverage surveys, sentinel posts, and routine reporting will form the basis of these systems. The systems developed should be effective, management-oriented and of reasonable cost. This systems improvement will be done through technical assistance and by holding regional and national workshops on these topics. INCAP will also involve the country information systems professionals in carrying out two evaluations to determine project progress and in the impact evaluation scheduled for the final months of the project.

INCAP will coordinate its health information system activities with those of other key groups working to improve these areas both in the region and world wide. This includes USAIDs, WHO/PAHO, UNICEF, PRITECH, CDC, ICCDR/B, and various university groups. This is important to insure regional coordination and to maximize information system compatibility world-wide.

TABLE 6

SUMMARY OF MAJOR PROJECT OUTPUTS

2. Strengthening Health Services Delivery and Information Systems

<u>Objectives</u>	<u>Phase I - Planning</u>	<u>Phase II - Implementation</u>	<u>Phase III - Evaluation</u>
a. Strengthen Health Service Delivery Systems for ORT, GM and AFP.	a. Assessment of program management, logistics and financial planning and management in each country.	a. Program implementation guides. b. Three regional senior managers courses.	a. Improved health delivery systems for GM and education programs in each country.
b. Improve capacity of health information systems to monitor and evaluate child mortality, diarrheal disease and malnutrition programs.	b. Review of health information systems (HIS) for ORT, GM and health/nutrition education programs in each country.	c. Regional logistics management course. d. Regional financial management course. e. Regional HIS management course. f. Three national courses per country for mid-level managers (partial support). g. One management course for PYOs in four countries (partial support). h. One national HIS management course per country (partial support). i. Morbidity/mortality sentinel areas in four countries. j. Two process and one program impact evaluation per country. k. 6-10 OR studies in management or HIS issues. l. 65 person months of technical assistance for management and HIS activities.	b. Improved Health Information Systems for ORT, GM, and Education in each country.

3. Improving Professional, Paraprofessional, and Community Worker Skills and Public Education

The objective of this component is to improve the knowledge, attitudes and skills of the region's physicians, nurses, nutritionists, pharmacists, and paraprofessional and community workers and to strengthen public education about ORT, GM and AFP. The provider study will have identified training needs and the countries will have determined their training priorities through their improved strategies and plans.

Drawing on various sources, including research and studies to be carried out under the project, INCAP will develop technical content guidelines for the development of case management and educational packages for training and educational activities. These guidelines will be produced throughout the life of the project and will be revised and updated as new information becomes available.

Based on the results of the provider study, INCAP will consider the best way to offer continuing education to physicians, nurses, nutritionists and pharmacists especially those in private practice or in commercial pharmacies. Consideration will be given to what materials are required, whether demonstration sites will be needed, and how best to reach these groups. For those providers working in the public sector and organized private sector, INCAP will work with responsible officials to plan and carry out educational programs to meet the needs. The project will take maximum advantage of regular meetings of professional associations to further professional training. It is expected that at least two clinical courses for physicians, two for nurses and nutritionists, and one for pharmacists will be carried out per country. INCAP will provide trainers, materials and in some cases small amounts of financial support for national training activities with the bulk of the human and financial resources coming from counterpart institutions or through bilateral funding.

INCAP will help improve in-service and community worker training carried out by national health services delivery organizations through technical assistance in curriculum improvement, pedagogy, training evaluation, and planning of these types of programs. This will likely be done by training of trainers.

Based on the results of the provider study, INCAP will also work with training institutions to improve basic education of professionals and paraprofessionals in the region. This will likely involve improvement of curricula, training time, training methods, and evaluation of the results of the improved training on students. INCAP will hold at least two regional workshops on curricula and instructional materials development and at least one on educational evaluation during the project. Assistance to training groups for developing these materials and improving methods will also be provided.

Regarding educational and training materials, INCAP will collect as many relevant materials as possible with special attention to WHO, PAHO, and Spanish-language materials. The first activity will be to see if these existing materials can be effectively used in the region. Only if there appear to be omissions, significant variations in culture and/or practices in CA/P countries will INCAP develop new materials. Otherwise, adaptation to the local situation will be carried out.

In collaboration with member country counterparts, INCAP will undertake some operations research in aspects of education and training which will contribute to extending coverage or advance the state-of-the-art knowledge for improved implementation of training and educational activities in ORT, GM and AFP. Priority will be given to development of training/education methods and materials for non-formal service providers like pharmacists, store owners or midwives and traditional healers. Emphasis will also be given to evaluation methodologies and the development and use of novel learning approaches such as distance training or simple correspondence courses for continuing education. INCAP will look for opportunities for joint funding in order to increase the level of research which it can undertake.

This component will also undertake activities to improve education of the public about ORT, GM and AFP. Based on the results of the community study, the mass media delivery systems study and the revised strategies and plans, INCAP staff and consultants will help countries improve/develop their mass media programs through technical assistance and training.

INCAP staff and consultants will provide technical assistance in the planning and implementation of these programs including development of survey instruments. Areas where technical assistance is contemplated include: detailed implementation planning for an integrated campaign; message development; field testing; actual implementation of integrated print, broadcast and health worker campaigns; monitoring for mid-course corrections; and evaluation. As with the training and education activities, INCAP will also collaborate with counterparts in carrying out operations research in priority areas which will advance the state-of-the-art in mass communications for extending ORT, GM and AFP coverage.

INCAP staff and consultants will also carry out training activities for professionals of the region in planning, implementation and evaluation of mass media campaigns for these technologies. There will be one Regional Mass Communications Workshop and one National Mass Communications Workshop per country. Other training activities will be held at INCAP or in the region.

In addition, INCAP staff and consultants will provide assistance in coordination of these activities, including the inclusion of private sector groups and user groups into the campaign process and the identification of specialized technical resources of benefit to the countries such as ad agencies, university resources, and so forth.

To meet the objectives of this component, INCAP will establish collaborative linkages with regional and national institutions with experience in these technologies and in mass communications programs. Technical specialists from PRITECH will assist INCAP and the countries as well.

TABLE 7

SUMMARY OF MAJOR PROJECT OUTPUTS COMPONENT

3. Improving Professional, Paraprofessional and Community Worker Skills and Public Education

<u>Objectives:</u>	<u>Phase I - Planning</u>	<u>Phase II - Implementation</u>	<u>Phase III - Evaluation</u>
a. Improve the knowledge, attitude and skills of physicians, nurses, nutritionists, pharmacists, paraprofessionals and community workers regarding ORT, GM and AFP.	a. Community Studies in each country. b. Health service provider studies in each country. c. Training system and curriculum review in each country. d. Mass communications system review in each country.	a. Guidelines on technical content for educational and case management packages. b. Two regional special educational activities for physicians and nurses. c. Two regional curricula and instructional materials workshops. d. One regional education evaluation workshop. e. Two regional mass communications workshops. f. Two national clinical courses for MDs, RNs, Nutritionists per country (partial support). g. One national pharmacists' workshop per country. h. One national PVO workshop in each of four countries. i. One national mass communications workshop per country. j. Three follow-up anthropological community and provider studies per country. k. 6-8 OR studies on training and public education aspects. l. 60 person months of technical assistance in training and public education.	a. Improved physician and nursing curricula in each country. b. Improved pharmacists curricula in each country. c. Improved paraprofessional curricula in each country. d. Improved primary and secondary school curricula in each country. e. Improved interpersonal education in each country. f. Improved public education programs in each country.

4. Increasing the Availability of Scientific and Technical Information

This component will supply the information needs of technical specialists, program managers and scientists which are required to improve the effective use of ORT, GM and AFP in the region by expanding a Regional Information Clearinghouse and carrying out a major research effort. INCAP, through the AID-sponsored Regional Breastfeeding Project, presently has an Information Clearinghouse on Maternal-Infant Nutrition, Lactation, and Weaning. This Clearinghouse will be expanded to include information on ORT, GM and AFP. A media library will be an integral part of the Clearinghouse. A detailed plan to expand the Clearinghouse will begin with an analysis of information needs by prospective users. Based on the results of the analysis, the bibliographic data base, the sources of information, a system for accessing information, the need for Spanish translation and the mailing list will be defined. The Clearinghouse is expected to provide the following services: publication of a quarterly newsletter of about 2500 copies; materials for participants at seminars, conferences, and workshops; mailings of selected materials to targeted users; translation into Spanish of specific documents; technical assistance to national information centers; response to ad-hoc requests; an annual update on project activities; and publication of research results. INCAP will begin dissemination of materials as early as possible. The INCAP Clearinghouse will coordinate its activities closely with PAHO, with APHA and PRITECH Information Centers and with other centers providing research and information on these technologies.

Research activities carried out under this component will look for ways to effectively extend the use of known ORT, GM and AFP technologies as widely as possible, and will develop additional practical technologies, or case management techniques or educational packages required to effectively deal with diarrheal disease and its nutritional consequences. Research activities will also define the scientific basis for the development of further interventions needed to reduce the deaths from diarrhea and severe malnutrition which are beyond the capacity of present technologies.

a. Operational Research

The first objective, to extend use of known ORT, GM and AFP technologies, requires operational research into a wide array of behavioral, managerial and logistical constraints particular to each country or even locale. Anthropological approaches, including the Community and Provider studies, will define present beliefs and practices regarding diarrhea, feeding and health seeking behavior, and identify communication and training strategies to enable transfer of ORT, GM and AFP technologies to both health providers and consumers. Managerial research questions include definition of problems contributing to low coverage and identification of possible solutions; ways to involve public, private and traditional health providers in using and promoting ORT, GM and AFP and development of information systems to

monitor the implementation and progress of ORT, GM and AFP program components. Logistical questions relate to various production and distribution options of ORS including public, commercial and cottage industry approaches, marketing and promotion strategies, cost recovery, pricing issues, etc.

In addition, operational research will be used to transfer the findings of technical research into implementable and pragmatic program activities. Thus the results of research on optimal dietary management and nutritional recovery after diarrhea will be used to design country or ethno-specific implementation trials placing this new knowledge into a country or cultural context, assuring wide use and acceptability. Understanding of etiology and transmission gained from epidemiology field research will enable formulation of practical treatment guidelines and educational messages to reduce diarrhea incidence. More precise means of identifying risk of LBW and its causes will enable design of community intervention strategies to be perfected through operational research as new information on this important underlying factor in infantile diarrhea and mortality becomes available through project research.

Operations research will be conducted jointly by INCAP and host country counterparts throughout the life of the project. The issues to be addressed will be defined by host country nationals responsible for ORT, GM and AFP programs. The operations research will be conducted in participating countries under the direct responsibility of local personnel. INCAP will promote the interchange of operational research findings, particularly of results with applicability in more than one country and use the Regional Clearinghouse to disseminate information.

The project will provide limited funding for about twenty operations research activities. In addition, INCAP technical assistance will help counterparts identify operations research questions, help prepare appropriate research protocols and seek financial support from other national, international, bilateral and private funding sources.

b. Development of Appropriate Feeding Practices

The second facet of the research program is designed to provide more precise technical guidelines for the dietary management of diarrheal diseases. In contrast to ORS technology, which is well defined, present knowledge of the optimal dietary response to diarrhea remains inadequate. This research is designed to define optimal foods, preparation, feeding frequencies and duration of feeding needed to assure nutritional recovery from acute diarrhea. Once defined, these will be applied to community level studies in collaboration with the anthropological team to develop culturally acceptable and implementable guidelines for each community. Growth during and after diarrhea illness will be carefully

monitored to provide an objectively measurable outcome goal of post diarrhea dietary management that will be transformed into an educational tool for program use.

Initial investigations on appropriate feeding practices will be carried out by INCAP staff first in a large public hospital in Guatemala and then in rural Guatemalan communities. Once results from these investigations have been obtained during the third year of the project, simplified multicenter operations research protocols will be developed to adapt these findings to at least four other countries in the region. The multicenter research will be conducted by participating country counterparts with assistance from INCAP.

c. Laying the Scientific Basis for Further Interventions

The third and final research area is designed to deal with the important and largely unknown elements of fatal diarrhea which are unlikely to be affected by implementation of presently developed technologies. Both chronic diarrhea and acute diarrhea in the severely undernourished are major underlying fatal factors which will become proportionally more important as death declines from the more common acute diarrheas due to successful implementation of the ORT program. Furthermore, an understanding of the etiology and transmission of diarrhea is essential to the reduction of incidence. A longitudinal study from birth is essential if the many factors contributing to eventual development of chronic diarrhea are to be understood and intervention points defined. Finally, the role of LBW in predisposition to infantile mortality, especially from diarrhea, requires a more careful study of risk factors and possible interventions to reduce LBW. Such information will enable design of programs not only to reduce residual diarrhea death, but also other causes of high mortality associated with LBW.

A prospective longitudinal study of the epidemiology of chronic diarrheal disease and its nutritional interactions will be conducted on children born in a rural community of known high diarrhea incidence. The study will define the natural course of infection, the nutritional consequences and specific etiologies of diarrhea during the first two years of life. The investigation will delineate the importance of each causative agent, the nature of transmission, relapse and repeated infections, effect on growth and, in one third or more of individuals, eventual development of significant under nutrition associated with repeated or continued (chronic) diarrhea. The study will focus on defining the factors leading to the development of chronic diarrhea and on its nutritional interactions.

Possible interventions in transmission of specific agents and in the diarrhea nutrition interactions uncovered by this study will be translated into operational terms and introduced in field situations in participating project countries. Such interventions may include diagnosis and specific treatment of certain etiologies, behavior modification to lessen

transmission, dietary measures to shorten or lessen diarrhea and early intervention in certain cases to avoid development of chronic diarrhea.

Research directed toward mortality associated with LBW will first involve analysis, compilation and organization of the results from multiple studies on risk factors leading to LBW which have been conducted in the region over the last several years. These studies cover a wide range of socio-economic groups and populations from several countries including urban and rural poor and urban social security populations in Guatemala, urban and rural populations in Costa Rica, and marginal urban women in Panama. Where it is necessary, the project will assist with further analysis of existing data sets to better define predictive risk factors and intervention approaches. The results will be used by a consultative group, including principal investigators of each of the prior studies and outside experts, to design specific interventions aimed at reducing LBW babies and infant deaths in identified target groups. It is likely that interventions will vary with country, social class and identified risk factor (infections, nutritional status, work load, etc.) Interventions will be tested prospectively in hospitals providing pre-natal care in urban settings and in rural clinics of three CA/P countries.

Anthropometric measures appear to provide the best predictor of LBW in undernourished populations (INCAP data). However, most existing indicators measure either past nutritional deprivation (head circumference, height) or require multiple observations before and during pregnancy (weight gain, increase in skin fold). A single predictive measure of present nutritional adequacy would be of immense practical importance for enlisting women in intervention programs. Further definition of which measures are most sensitive and selective in the identification of high risk undernourished women is needed to better focus interventions. A study of body composition changes during pregnancy with particular correlation with clinical anthropometry will be carried out to provide these selective measures of LBW risk. Creatine excretion, underwater weight and dye dilution will be correlated with clinical anthropometry and standard biochemical tests to identify the best predictors of nutritional adequacy, measured both in terms of birth weight and lactation ability. Subjects will include young women from previous INCAP studies who themselves received food supplements during gestation and infancy in order to determine the risk they run of producing LBW babies themselves.

TABLE 8

SUMMARY OF MAJOR PROJECT OUTPUTS BY COMPONENT

4. Increasing the Availability of Scientific and Technical InformationObjectives:

- a. Supply the information needs of technical specialists, program managers and scientists which are required to improve the effective use of ORT, GM and AFP in the region.

Phase I - Planning

- a. Regional technical information dissemination plan.
- b. Clearinghouse and media library for ORT, GM and AFP.
- c. Research protocols for three regional and four multicenter studies.
- d. Regional Operations Research Plan.

Phase II - Implementation

- a. 16 Quarterly Newsletters
- b. Regular distribution of technical reports and documents.
- c. Audiovisuals on ORT, GM and AFP.
- d. Technical reports on research results.
- e. Three bibliographic listings.
- f. Three clearinghouse user's resource guides.
- g. Guidelines for development of national information clearinghouses.
- h. 20 small operations research projects (total from all components)
- i. Investigations on dietary treatment/nutrition rehabilitation of children with diarrhea.
- j. Investigations on high risk factors for LBW and appropriate interventions.
- k. Investigations on etiology of chronic diarrhea/malnutrition links.
- l. Multicenter dietary treatment of diarrhea studies (4).
- m. Multicenter LBW risk factor intervention studies (4).
- n. Multicenter program impacts on morbidity and mortality studies (4).
- o. Multicenter Anthropological community and provider studies (6 sets).

Phase III - Evaluation

- a. Final Technical Report.
- b. Research Results:
Three reports from each of three regional investigations and one report from each of thirty multicenter studies.
- c. Final reports from 20 small operations research projects.

5. Increasing Availability and Improving Distribution of ORS

This component will deal with the increased demand and distribution problems that are expected to result from the other project components. The ORS Production and Logistic Systems Study (to be carried out as part of the analytical effort to improve national strategies and plans) will provide important information on the magnitude of the existing and prospective ORS availability and distribution problems in each of the countries. This study will determine the current and projected effective demand for ORS in the region, the capacity of local production to meet this demand with quality products over the next ten year period, and bottlenecks and gaps in the distribution systems. The KAP provider and community studies will also provide information on acceptance and use of ORS.

The major emphasis of this component will be to increase commercial sales of ORS through private sector channels. The private sector will be involved in the promotion and planning effort and the studies mentioned above will contribute to establishing a dialogue on how commercial channels and approaches can contribute to the overall goal and how project funded technical assistance, training and research can be of help. For example, one fruitful area for technical assistance is in operations research where studies on demand under different pricing, profit-margin, absolute profit and packaging conditions are likely to enhance sales. Special attention will be given to the issues of how to reach the poor through social marketing and subsidized pricing approaches. The project will arrange expertise in these areas from Central American resources, if available, or through the resources of the PRITECH project, UNICEF, or other specialized institutions and individuals.

Depending on the findings of the ORS Production and Logistic Systems Study and the improved strategies and plans, project consultants may also assist in strengthening ORS production. Project consultants will help countries improve their "make or buy" decisions for ORS. When the "buy" decision is made, organizations will learn selection and procurement planning. Where the "make" decision is made, expertise will be made available in production planning, production line management, quality control, marketing, pricing and other special technical areas such as packaging, importation of ingredients, equipment purchase and maintenance, and so forth. Since this is not an area of INCAP expertise, PRITECH and other experts will play an important role, as needed.

Donations of ORS from UNICEF and other sources for public sector programs are also likely to be facilitated by the improved planning carried out as part of the project. Distribution problems of ORS through public sector institutions will be addressed as part of the effort to improve health services delivery and information systems under that component.

TABLE 9

SUMMARY OF MAJOR PROJECT OUTPUTS BY COMPONENT

5. Increasing Availability and Improving Distribution of ORS

<u>Objectives:</u>	<u>Phase I - Planning</u>	<u>Phase II - Implementation</u>	<u>Phase III - Evaluation</u>
a. Meet increased demand for ORS generated as a result of other project components and help resolve distribution problems likely to accompany the increased demand .	<p>a. Feasibility studies for national or regional ORS production.</p> <p>b. Feasibility studies for commercial distribution of ORS in each country.</p>	<p>a. One commercial sales workshop per country (partial support).</p> <p>b. 3-4 operations research studies for commercial distribution schemes.</p> <p>c. 18 person months of technical assistance for production and commercial distribution issues.</p>	<p>a. Improved availability of ORS in each country.</p> <p>b. Increased sales of ORS in each country.</p>

IV. COST ESTIMATES AND FINANCIAL PLAN

The proposed budget for the project is \$10.6 million of which ROCAP's contribution will total \$8.00 million (75%), INCAP's \$1.1 million (10%) and host country counterpart \$1.5 million (15%). Table 10 contains a summary of the project budget showing major expense categories and the funding source. Project funding will cover activities planned over the implementation period of five years from January 1985 through December 1989. Table 11 shows the expenditure schedule for the ROCAP contributions by major expense category and by year.

The major expense categories (detailed in Annex I.9) are composed of the following elements:

1. Management and Evaluation - personnel, material and equipment and process and impact evaluations;
2. Training - seminars, country document preparation, regional courses, national courses, travel and per diem for teachers, technical meetings, work group and task force meetings and training for specific groups;
3. Technical Assistance (non-U.S.) - INCAP consultants and expanded staff training, Central American short term advisors and travel and per diem;
4. Technical Information Dissemination - production of newsletters, bulletins, dissemination of information and production of technical-scientific material based on specific research;
5. Operational and Evaluation Research - anthropological studies, impact of programs on morbidity and mortality and operational research;
6. Research - risk factors of LBW and neonatal mortality, nutritional rehabilitation of children with diarrhea, etiology of chronic diarrhea and related multicenter studies.

Host country counterpart of \$1.5 million will be principally in the form of salaries for participants in training activities and salaries of host country counterparts for INCAP technical assistance and country level operations research activities. Technical assistance and operations research activities are not undertaken by INCAP unless participating host country agencies formally agree to provide adequate counterparts. Actual host country counterpart contributions are expected to be higher since most countries usually provide other support such as local transportation and facilities or supplies for carrying out program assessments, activities requiring technical assistance and operations research. However, a minimum of \$1.5 million in host country counterpart can be assured at this time.

In addition to host country contributions to be provided directly for project activities, the Central American countries have estimated that approximately \$22,000,000 in international assistance will be needed to meet their goals in control of diarrheal diseases and monitoring of growth and development included under their child survival plans. These funds are being solicited from the international donor community through the auspices of PAHO and UNICEF. UNICEF's prior experience in soliciting and obtaining this type of funding for Central America suggests that most of the necessary resources can be successfully obtained. In addition, the USAIDs in Honduras, El Salvador and Guatemala plan on developing bilateral projects in FY 85 and 86 which will further contribute to the countries' child survival efforts including control of diarrheal disease and monitoring of growth and development. (See Annex II.4 for country-by-country listing of goals and estimated financing required to meet these goals).

TABLE 10
FINANCIAL PLAN
Projected Costs
(US\$000)

<u>Project Component</u>	<u>ROCAP</u>	<u>INCAP</u>	<u>Host Country Counterpart</u>	<u>Total</u>
Management & Evaluation	1,298	650	---	1,948
Training	1,403	---	730	2,133
Technical Assistance (Non-U. S.)	1,000	---	250	1,250
Technical Information and Dissemination	217	---	---	217
Operations & Eval. Studies	719	---	550	1,269
Research	916	200	---	1,116
Overhead	<u>1,666</u>	<u>250</u>	<u>---</u>	<u>1,916</u>
Sub-Total	7,219	1,100	1,530	9,849
U.S. Technical Assistance	<u>781</u>	<u>---</u>	<u>---</u>	<u>781</u>
TOTAL	8,000	1,100	1,530	10,630

NOTE: A 10% yearly compound interest rate has been contemplated for contingencies and inflation.

TABLE 11

PROJECTED EXPENDITURE OF AID/ROCAP CONTRIBUTION
(\$000)

Element	Y E A R S					TOTAL
	1	2	3	4	5	
Management & Evaluation	294	210	218	223	353	1,298
Training	196	289	380	277	261	1,403
Research	132	310	329	145	---	916
Operations & Evaluations Research	149	143	152	157	118	719
Technical Information & Dissemination	38	41	44	46	48	217
Technical Assistance	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>1,000</u>
Sub-Total	1,009	1,193	1,323	1,048	980	5,553
Overhead (30%)	303	358	397	314	294	1,666
U.S. Technical Assistance	<u>175</u>	<u>175</u>	<u>175</u>	<u>175</u>	<u>81</u>	<u>761</u>
TOTAL	1,487	1,726	1,895	1,537	1,355	8,000

V. SUMMARY PROJECT ANALYSES

A. Technical Analysis

The project is designed to reduce infant and young child mortality and severe malnutrition in Central America by:

1. reducing deaths from diarrheal dehydration,
2. reducing susceptibility by improving the management of diet, diarrheal disease and hygiene in infants and young children as they pass through their period of maximum vulnerability, and
3. reducing the number of low birth weight babies who are at the greatest risk of illness, severe malnutrition and death.

This will be done by increasing the use of relatively inexpensive techniques such as ORT, simple educational messages and identification monitoring and proper management of high risk mothers and infants. To obtain the widespread use of the selected techniques, the project development team identified the following prerequisites:

1. Interest on the part of the Central Americans and their governments in doing something about the problem must exist.
2. Remaining gaps in state-of-the-art knowledge regarding the techniques must be filled.
3. A core of highly motivated technical leaders must exist in each country of the region, who a) have a clear idea of what needs to be done, b) can effectively promote the use of ORT, GM and AFP, and c) can adequately design and implement programs.
4. The constraints to making the ORT, GM and AFP available to mothers in a readily understandable and useable form must be identified and overcome.
5. Health providers, public and private, formal and informal, in each country must be educated as to the advantages and use of the techniques and must be motivated to promote and use them.
6. The knowledge, ORS and tools for growth monitoring must be readily available to mothers throughout the region.

The interest of the Central American countries in the problem has already been discussed. The technical analysis will address itself to the feasibility of filling the other prerequisites.

Filling Knowledge Gaps

The problem of practical dietary management of acute diarrhea and its nutritional consequences requires some investigation before initial guidelines can be developed. These studies are not complex, the methodologies required are well established, and they can be carried out fairly rapidly. INCAP is highly qualified to conduct these investigations both in the hospital and community. Initial results should be available by the end of the first 18 months of project implementation. The initial studies will be done in normal hospital and community settings so that the results can be easily adapted throughout the region. The results can then be incorporated into practical case management guidelines and educational messages for widespread dissemination before the project reaches its midpoint.

A great deal of work has already been done at INCAP and elsewhere in Central America on the identification of risk factors involved in producing LBW babies. The problem now is one of bringing this work together, drawing conclusions from it and designing practical interventions based on the existing data which might reduce the number of LBW babies. These interventions will be tested in normal health service facilities throughout the region. Known epidemiologic methods will be used to test results. INCAP staff have had ample experience with these methods. Competent epidemiologists and clinicians who are willing to collaborate exist in each country. Interventions chosen for study will be ones which are already within the reach of health service delivery systems in the region and which would not require additional resources to implement. This effort is very likely to bring concrete, practical results within a short period of time with relatively little additional investment.

The problem of repeated or chronic diarrhea, its relation to chronic malnutrition, and the question of ways to properly manage or prevent these cases is likely, within the next five years, to be the biggest remaining challenge to reducing mortality and severe malnutrition due to diarrheal disease. Methodologies which did not exist ten years ago now exist for looking at the etiology and epidemiology of chronic diarrhea and its relation to malnutrition. INCAP and others in Central America know how to use these methods and have the facilities for carrying out these studies. Results should be available toward the end of the project when most countries will be ready to use them.

The project team sees no reason why the state of the ORT knowledge which is needed to reach project objectives cannot be obtained within the required time frame with the programmed resources.

Regional Technical Expertise and Leadership

A group of scientists and technicians already exist in the region, at INCAP and other institutions such as Costa Rica's Hospital del Nino and

PASCCAP, who have had substantial experience with ORT, complementary educational techniques including mass media, growth monitoring, related operations research and evaluation. For example, Costa Rica has had a very successful ORT program for years and several Costa Ricans are considered world experts in ORS and its use.

The S&T Bureau's Mass Media in Health Practices project has provided Honduras with a very successful experience in the development and implementation of a mass media campaign supporting the use of ORT and oral rehydration salts. The proposed project will draw heavily on this experience. In addition, a series of other operational research projects, such as the AID funded Maternal Risk Indicators Projects in Guatemala and work done under AID's Costa Rican Nutrition Loan provide experiences which will be used in developing the technology, medical case management and educational packages which will be major products of the proposed project. The project will pull these people and their experiences together under INCAP leadership to form a group of regional experts who can provide technical guidance, leadership and assistance to participating countries.

Many of the types of activities proposed for the ORT, Growth Monitoring and Education Project have been carried out successfully by INCAP under the ROCAP-financed Regional Nutrition Technical Outreach and the Regional Lactation Promotion Projects. The proposed project is a natural extension of experience attained in implementing the two prior projects.

During the course of the Nutrition Technical Outreach project, INCAP has been providing 80-140 work months of technical assistance per year to its member countries in a broad range of nutrition related areas, including nutrition in primary health care, growth monitoring and food and nutrition education. In addition, INCAP established the basis for a technical information dissemination system which was expanded under the Regional Lactation Promotion Project to include a clearinghouse on maternal infant nutrition and lactation promotion. The Nutrition Technical Outreach Project has given INCAP substantial experience in the development and implementation of short term training courses, skills-oriented tutorial training and regional workshops which are closely linked to the member countries' technical assistance needs and requests.

Seven long term technicians will be added to INCAP staff in areas where expertise in the area is scarce or there is likely to be considerable demand for assistance from the member countries such as financial analysis, management, logistics and mass communications. A high level long term technical advisor and some specialized outside short term consultants and training to help upgrade the skills of existing regional experts will be included in the project. Any additional technical help required will be provided by international experts funded through the S&T/Health PRITECH Project. Technical leadership and expertise should be amply available in the region to carry out project activities.

Support for National Leaders

Over the last three years INCAP has worked closely with groups of public sector technical counterparts in each country through the Nutrition Technical Outreach Project, the Regional Lactation Project, the Panama Breastfeeding Project, and most recently in developing child survival plans. These counterparts tend to be the same ones who have responsibility for MCH, ORT, health/nutrition education and growth monitoring activities in their countries. They are accustomed to working with INCAP in the manner proposed. INCAP has similarly worked with private professional groups and more informally with health and nutrition PVOs under the Regional Lactation Project. The proposed activities are an extension of methods which have already been tried and have proven to be successful or have provided clear lessons for the proposed project. For example, several lessons learned from the on-going Regional Lactation project (due to terminate in September 1985) have been incorporated into the design of the proposed project. Where national seminars have taken place in the lactation promotion effort, strategy implementation has gone more smoothly. As a result, national promotion and planning seminars under the proposed project are planned to follow the Phase I regional seminars in order to get a broad based national consensus on the proposed country strategy and plan.

The need to include assistance in the development of educational and training materials under the regional project is another result of the lactation promotion experience. Finally, experience with both the Nutrition Technical Outreach and Lactation Promotion projects have repeatedly demonstrated the need to include funds for carrying out small operational research activities in the member countries and for undertaking some applied research which will fill the technical knowledge gaps which quickly become obvious when countries begin to plan and implement their individual strategies.

Overcoming Constraints to Availability

Identifying and resolving constraints to widespread use of ORT, GM and AFP in each country entails two types of activities, definition of the problem and design of alternative solutions followed by implementation. The regional project will concentrate on helping with identification of constraints and design of solutions. Community and health provider studies, strategy assessments, operations research, morbidity/mortality impact studies, technical assistance and training of key personnel in management, logistics and information systems are all aimed at the diagnosis and problem solving aspects of strengthening service delivery. Implementation of solutions will be entirely the responsibility of the country's public and private sectors. The project will provide only motivational activities, short term technical assistance, technical information and training of key personnel to help with implementation. Care has been taken to assure that resources necessary to implement national programs will be available among existing country programs,

UNICEF support and current or planned USAID bilateral assistance in Honduras, El Salvador and Guatemala.

Studies carried out during project paper development show that oral rehydration salts are amply available at the national level to meet current demand and the projected increase in demand over the life of project in all countries in the region. (See Annex I.6 for Oral Rehydration salts available in each country.) The lack of availability in households is due to distribution problems which will be addressed by the project. Furthermore, there exists in each country a private firm or a parastatal with the production capacity, adequate quality control and interest to produce salts for commercial distribution, if there were sufficient demand. Commercial demand, however, will depend on adequate public education and promotion.

Training and Public Education

As in the case of health service delivery, the regional project will support development of education and training methods, materials and strategies through anthropological studies, KAP surveys, technical assistance, operations research, development of evaluation methodologies, technical information dissemination and training of key personnel with overall responsibility for either public or private sector training and mass communications programs in each country. Resources for training personnel involved in health service delivery, for reproduction of educational materials, and for implementation of mass communications programs will come from the host country or through bilateral assistance. As already mentioned, the availability of funds to support these activities is unlikely to be a limiting factor in extending the use of ORT, GM AND AFP.

As designed, therefore, the project takes into consideration known technological and institutional constraints, both regional and national, draws on proven investigative, educational and technical information dissemination methods, as well as on proven organization and promotion techniques and interpersonal networks in the region. After reviewing the above factors, the project committee has determined that the proposed design is technically responsive to the problem identified and that no technical constraints exist to inhibit successful project implementation.

B. Institutional Analysis

1. INCAP's Overall Capacity

The project will be implemented by INCAP which serves as the region's principal source of technical expertise in the area of health and nutrition. INCAP has recent experience in managing AID projects similar to the proposed project (Regional Breastfeeding Promotion, Regional Nutrition Technical Outreach and Panama Breastfeeding Promotion) and, overall, has done a satisfactory job in meeting training objectives, producing high quality

technical information, carrying out a high volume of technical assistance and maintaining excellent relationships with clients, especially ministries of health.

To respond to AID/W queries regarding the technical capacity of INCAP and how its clients perceive the value of its work and services, ROCAP financed an institutional analysis of INCAP which was carried out by Coopers and Lybrand in December, 1983.

The final report, which was presented to AID/W in February 1984 and is available in LAC/DR, reviews the research, training and technical assistance activities undertaken by INCAP, the linkages it has with national and international organizations and states that the "technical capacities of the institute's staff are appropriate for many of AID's program policies and strategies such as nutrition, health assistance, food and agriculture, transfer of technology and institutional development. Therefore, in the future, AID should continue to consider INCAP as a capable project implementator."

On the question of client perceptions, the report states that INCAP "is highly regarded by the international scientific community. The services it provides, in the view of the national authorities and recipients of its services we spoke with, are of high quality."

The report concludes that "INCAP is a useful organization that offers unique services that are beneficial to the solution of nutritional problems and the improvement of conditions in the Central American region."

2. INCAP's Capacity to Implement the Proposed Project

INCAP's specific technical and administrative capacity to carry out the proposed project was reviewed in depth during project paper development. The conclusions of the project development team are summarized in the following discussion.

a. Technical Personnel

Fourteen INCAP technical professionals will participate directly in project implementation either full or part time. In addition, current INCAP staff will need to be reinforced with six full time and three part time technical personnel. These new positions (more fully described in Annex I.7-B) will be filled with service-related personnel who will coordinate project activities and provide technical assistance in health planning, logistics, financial analysis, mass media, training, technical information dissemination, management information systems and evaluation. In addition, three part time professional positions in field research (an obstetrician, a microbiologist and a nutritionist) will be hired for two years, three years and eighteen months respectively.

To expand the capacity of its staff, INCAP will draw on other experts in the region through the use of short term contracts or by signing collaborative agreements with institutions which have proven potential to carry out some of the research, training and technical assistance activities contemplated under the project. Possible institutional linkages have already been identified with groups such as the Costa Rican Children's Hospital, the Costa Rican Nutrition and Health Institute (INSCIENSA), the Community Health Training Program for Central America and Panama (PASCCAP) and the Central American Institute for Public Administration (ICAP). Collaborative agreements will be finalized with these and other national institutes during the first year of project implementation, once detailed study protocols and country strategies have been established.

INCAP and its expanded network of affiliated Central American technical resources would benefit from outside assistance in planning and implementing operations research and in national planning and management of ORT and primary health care delivery systems. The S&T PRITECH project is a logical source for this assistance because of the large pool of expertise it can draw upon. Specific areas where assistance from PRITECH is contemplated include the analysis of financial and management systems, development and use of commercial retail sales to deliver ORS, planning and management of ORS supply including production, procurement, logistics and systems management, development of certain specialized training programs, and planning and implementing multi-media educational campaigns. U.S. technical assistance will be used to provide on the job training to Central American professionals with good potential for developing the skills necessary to be able to provide top level technical assistance in these specialized areas in the future.

b. Administrative Capacity

A review of INCAP capacity to administer the proposed project shows that INCAP administrative structure and service centers are currently underutilized and, with a couple of exceptions, can absorb the additional work proposed under the project within their current capacity. The exceptions identified by the project team are the need for an administrative assistant and an accountant to be assigned full time to the project. These will be covered by INCAP's common services charges. In addition, two full time secretaries will be needed as support personnel and key secretaries will be upgraded to serve as administrative assistance within collaborating technical divisions. A summary level of effort analysis is included as Annex I.7-C.

The institutional analysis also identified the need for word processing capability and at least one microcomputer in order to effectively use INCAP's current support staff and avoid the necessity of adding more support personnel. INCAP's contracting, procurement, travel, transportation and general budget control procedures were found to be consistent with AID regulations and adequate for proper project implementation.

c. INCAP Institutional Priorities and Future Directions

INCAP and its directing council have decided that the institute will concentrate its major training, technical assistance and research activities over the next five years in the following six priority areas:

- 1) Food and Nutrition in Primary Health Care
- 2) Food and Nutrition Surveillance
- 3) Food and Nutrition Education
- 4) Food Assistance Programs
- 5) Food Fortification
- 6) Community and Household Food Availability

INCAP's aim is to achieve balanced programs in these five areas with integrated and mutually supporting training, technical assistance and research components which will help member countries strengthen their food and nutrition activities. These priorities have been selected based on member country needs and interest and reflect the types of assistance INCAP has been asked to provide most often during the last three years. They are also areas where INCAP feels the greatest impact could be achieved in the shortest period of time.

INCAP also has two institutional development goals for the five year planning period: first, to complete the process of administrative reform and development of its own administrative structure and procedures begun three years ago. The second goal is to expand the institute's funding base, in order to achieve greater financial stability. To this end, INCAP has established an office of institutional planning and development and has begun to explore base funding options, including the possibility of establishing an endowment fund.

These goals and institutional priorities are consistent with the Cooper's and Lybrand report and are strongly supported by ROCAP. The proposed project is consistent with INCAP's institutional development priorities. This project plus new ROCAP activities over the next five years, including participant training and development of a new project to support food assistance programs, will strengthen INCAP's administrative capabilities and significantly increase its attractiveness as a recipient of assistance from the broader donor community.

C. Summary Economic Analysis

For most development projects, economic evaluation involves the application of standard benefit-cost or internal rate of return calculus. Ideally, one or both of these methods would be applied to the economic analysis of this project. However, such analyses are at least partly inappropriate here for two reasons. First, the project is aimed at improving

the capacity of regional and national institutions to use ORT, GM and AFP ("the package") rather than financing specific interventions in these areas. Hence, the economic benefits from project activities will be indirect and will accrue only after interventions stimulated by the increased capacity to use the package are undertaken. Secondly, the theory of benefit-cost analysis is difficult to apply to some important aspects of health-sector interventions. Interventions usually have fairly well-defined costs, but the benefits arise indirectly from averting cases of illness. When illnesses are averted, the savings from costs of treatment avoided usually can be quantified, but the pure-utility values of reduced morbidity and mortality and the value of improved performance in school or on the job are nearly impossible to estimate.

The package of interventions to be promoted by this project will produce the following impacts: reduction in infant morbidity and mortality and reduction in severe malnutrition in young children. These impacts will produce quantifiable benefits in the form of costs of treatment avoided. The costs of treatment include hospitalizations and the use of intravenous (IV) solutions for the treatment of severe dehydration from diarrhea and rehabilitation of severe cases of malnutrition. In addition, other diseases will be less severe in better-nourished children, so hospitalizations and costs of treatment of other diseases will be avoided as well.

Because there will be no direct interventions, the economic analysis of this project makes only a first approximation through illustrative calculations of the benefits and costs of the likely future interventions. In addition, cost-effectiveness calculations are made with regard to (1) the choice of making the project a regional capacity building effort, rather than a set of bilateral efforts, and (2) the package of interventions chosen versus alternatives.

For an illustrative calculation, the costs associated with an intervention in Guatemala in 1985 was analyzed. A summary of the results of the intervention is shown in Table A of Annex 8. Two impact measurements are shown: averted deaths from diarrheal disease and averted cases of morbidity. Cost savings from reductions in hospitalizations and treatment of diarrhea amount to \$1.3 million, compared with a total cost for the program of \$3.97 million. The cost, net of measured cost savings, per life saved is \$498 and per case of malnutrition averted is \$21-34. Once a reasonable estimate of the non-quantifiable benefits is included, the intervention can be deemed economically feasible.

The analysis then addressed the question whether an ORT intervention achieves the same impact at a lower cost than alternative interventions. As described in Annex 8, the measurement of effectiveness for the alternative intervention packages is mortality. A decline in mortality will only come about through reductions in malnutrition and in morbidity from diarrhea and other related conditions. It was concluded that the package of interventions is the least-cost method (absent measles immunizations) of reducing mortality

for most of the region among children aged 0-5 years, especially if interventions are targeted on high-incidence areas. By inference, the package is also cost effective in reducing morbidity and malnutrition.

In evaluating the regional or the bilateral approach, two sets of comparisons are made: between the regional approach and the bilateral only approach and between the Regional American (which would use strictly U.S. technical assistance) and the Regional INCAP approaches. It was found that the Regional INCAP alternative accomplishes the project goals at a considerable cost saving (\$2.93 per child covered versus \$4.07 for the Regional American approach and \$5.01 for the bilateral only approach). Compared with the bilateral only approach, the regional alternatives economize on managerial personnel by avoiding duplication, providing technical personnel with a greater variety of skills, and making more extensive use of short term personnel to solve specific problems. The major difference between the Regional American and INCAP approaches is the mix of U.S. versus Central American management and technical personnel. While all three approaches are equally effective in carrying out training, research and technical information dissemination, the INCAP approach is preferable because a large portion of its Central American managerial and technical personnel will remain in place after the end of the project, whereas the U.S. personnel would depart. (See Annex 8 for the detailed analysis.

D. Financial Analysis

1. Budgetary Analysis

INCAP's revenues are derived from four major sources: 1) member quotas; 2) PAHO/WHO contributions; 3) project revenues; and 4) other sources. In 1983 INCAP's revenues were distributed as follows:

	<u>Amount</u>	<u>%</u>
Member quotas	\$ 300,000	9
Other revenues	\$ 200,000	6
PAHO/WHO contribution	\$ 1,253,934	38
Projects (direct & overhead)	<u>\$ 1,543,018</u>	<u>47</u>
	\$ 3,296,952	100%

In 1983 project revenues, including the overhead component, reached approximately \$1.6 million, accounting for 47% of INCAP's total revenues. The PAHO/WHO contribution, the largest component of the basic revenues (representing about 71 per cent of non-project funds), is important for INCAP's financial stability. Permanent personnel is the major expense supported by the PAHO/WHO contribution. In addition to its annual quotas, PAHO also provides a contribution to INCAP's capital investment fund (\$200,000 in 1983).

Member government annual quotas total \$300,000, or 9% of total revenues. These contributions are determined by INCAP's directing council and vary from \$31,200 for Honduras to \$93,900 for Guatemala as shown below:

<u>Country</u>	<u>Amount</u>	<u>%</u>
Guatemala	\$ 93,900	31
El Salvador	51,000	17
Panama	44,700	15
Costa Rica	42,000	14
Nicaragua	37,200	12
Honduras	<u>31,200</u>	<u>11</u>
Total annual contributions	\$ 300,000	100

At present, members owe a total of \$1.025 million in quotas either for current or past years. As of July 1984, Guatemala is the only country which is current in its payments. Of the total quotas, Costa Rica owes \$283,030 (28%), El Salvador \$102,000 (10%), Honduras \$247,387 (24%), Nicaragua \$372,287 (36%) and Panama \$21,097 (2%). In 1983, all of the countries except El Salvador made their quota payments and both Honduras and Costa Rica made payments in excess of their annual quota, thus decreasing the amount of their arrears. This situation does not take into consideration the fact that host country contributions to this project will total \$1.53 million.

During 1983, AID was the largest single donor with revenues for its six projects representing 27 percent of INCAP's project revenues.

Sources of "Other Revenues" (6% of the total) include student tuitions, technical services, sales of publications, laboratory analysis and equipment sales.

2. Overhead

INCAP's overhead fee supports common services and is based on the overall cost of administration to the institution.

An evaluation was conducted by ROCAP's financial analyst in conjunction with INCAP staff to establish the appropriateness of the overhead rate. The overhead rate of 30%, which will apply under the project, was accurate for 1983 and the first six months of 1984. INCAP will submit periodic reports on its cost distribution system to ROCAP in order to adjust overhead rates as required. The overhead rate is based on the following project direct cost elements:

- Staff salaries and allowances,
- Contractual services,
- Operating expenses,
- Supplies and equipment
- International and local transportation,
- Fellowships, courses and seminars.

3. Method of Implementation and Financing

The direct reimbursement financing method will be used for all project expenditures. This method has been employed in previous projects with INCAP and is judged to provide good internal control with low vulnerability. Given the regional nature of the project, reimbursements will be made in U.S. dollars.

Based upon periodic assessments of the accounting and internal control system of INCAP by both independent auditors and the ROCAP financial analyst, a Certified Summary Disbursing Report, accompanied by SF-1034 to process reimbursements to the institutions, will be accepted by ROCAP's Controller's office to document project expenditures. Post payment reviews are performed by ROCAP's Financial Analyst based on randomly selected samples of vouchers which are large enough to provide reasonable assurance that the voucher approval is correct and well supported by appropriate documentation.

4. Audits

INCAP's external audit is prepared by the PAHO/WHO external auditor. The resulting document focuses on the PAHO financial relationship with INCAP, rather than on INCAP as a separate entity. Therefore, the overall INCAP position is not clearly reflected. In the future, INCAP will be requested to hire its own external auditor to produce annual financial statements that reflect the financial activities of INCAP in their entirety.

ROCAP's financial analysts, as a part of their duties, periodically visit INCAP to review matters related to the financial status of ROCAP projects as well as other financial matters which may arise. As a result, the Mission is completely current on the financial situation of INCAP and can state that INCAP has adequate accounting systems, sufficient administrative expertise and financial capability to undertake the proposed project. A computerized accounting system was installed in 1983 and is based on PAHO's overall administrative and accounting system. It is expected that the new accounting system will improve the availability of internal financial data, particularly regarding year to date income and expenses, which was difficult to obtain in the past.

E. Social Analysis

1. Beneficiaries

The ultimate beneficiaries of the project will be mothers and children in the region who suffer from recurrent diarrhea, severe malnutrition, high risk pregnancies and high mortality rates. Their families, who suffer from the economic strains of dealing with these health problems, will also benefit. The immediate beneficiaries will be the technicians and staff of regional and national institutions (both public and private) who are

responsible for dealing with two of the most pressing health problems in Central America: diarrheal disease and malnutrition.

Specifically, the ministries of health, social security systems, private health practitioners, nutritionists, pharmacists, professional associations in the health sector and universities, as well as paramedical and informal health practitioners such as auxiliary nurses, health promoters, midwives and small commercial retail outlets will derive direct benefits from the project. It is expected that technicians and staff from other organizations such as PVOs and ministries of education who are involved in related activities will also benefit from the training and technical support services to be provided. In one way or another, each of these groups will receive direct assistance which will increase their capability to deal with diarrheal disease and severe malnutrition.

2. Socio-Cultural Feasibility

From a socio-cultural perspective, the Central American countries, while sharing many similarities, also present a great deal of diversity in their patterns, beliefs and customs regarding food, illness and child care practices. The region also includes countries with relatively large indigenous populations with their own distinct language and social systems. For health care providers, there is a great deal of diversity in approaches to health care and in delivery systems, ranging from a fairly sophisticated health care system in Costa Rica with high coverage by the formal health sector to systems in Guatemala and Honduras where a large proportion of the population is dependent upon traditional health care providers.

In order to achieve effective use of ORT, GM and AFP, the medical profession itself will have to be convinced of the utility and desirability of these simple techniques. Experience has shown that while mothers can be taught to use these techniques, physicians and nurses often undermine programs because they are not convinced that the methodologies are good medical practice or that they should be put in the hands of mothers or paraprofessionals. In short, the medical profession in Central America, as in other parts of the world, is a subculture with its own particular socio-cultural characteristics which must be addressed if the desired changes in attitudes and practices are to be achieved.

The project design addresses these socio-cultural constraints. INCAP has a cadre of anthropologists and sociologists either on its staff or closely affiliated with the institute who will work on the project. A series of anthropological studies on health seeking behavior and knowledge, attitudes and practices of health care recipients, providers and educators will be carried out in each country. The results will be used in the preparation of both training and educational materials specifically adapted to the cultural variations of each individual country. In addition, methodologies already

familiar to Central Americans, such as the use of focus groups successfully implemented in Honduras under the Mass Media and Health Practices project, will be used in the development of educational campaigns.

The project contemplates using internationally known Central American physicians who understand the region's medical systems and mentality, but who have years of experience in successfully using techniques such as ORT and growth monitoring to train physicians and nurses. In addition, the project will make use of the development and implementation of joint research protocols to help convince key physicians of the efficacy of using the primary health care technologies and case management packages developed under the project. Finally, INCAP with its links to PAHO and WHO, its capacity to draw on well respected regional and international experts, its extensive knowledge of the region, its network of graduates who hold key positions in their own country's health community, and its own cadre of internationally known physicians and health professionals is in an excellent position to influence thinking among medical personnel in Central America.

3. Role of Women

Women and their children constitute the principal project beneficiaries. A major objective of the entire project is to improve the capacity of women to take better care of themselves and their infants and to deal effectively with common illnesses and normal physiological processes like pregnancy and infant growth. The project will try to get ORT, GM and AFP into the hands of the mother so she can assume responsibility for monitoring her child's development and take control of its care during the routine transitions and crises that every child faces early in life. In addition, research components are specifically aimed at studying maternal health during pregnancy and responding to questions on how to reduce risk to both mothers and infants. Health service providers who actually deal with the infant are more often women than men. These providers will be the direct beneficiaries of training, education and information dissemination activities under the project. Furthermore, women represent a high percentage of the professionals directly involved in the project's research training and technical assistance activities and often serve as technical leaders.

VI. IMPLEMENTATION PLAN AND ARRANGEMENTS

A. Administrative Arrangements

1. Project Administration at INCAP

The Director of INCAP will have overall responsibility for project activities. Project coordination will be assigned to the nutrition in primary health care unit in the food and nutrition planning division (see Annex I.7.A for current INCAP Organization Chart).

The project involves staff from all of INCAP's divisions and coordinating units, plus regular high level contacts with member government personnel and close collaboration with other institutions in the region. Therefore, a project directing council made up of the INCAP Director, Administrator, Project Coordinator, Head of the Food and Nutrition Division and the Technical Assistance Coordinator will be responsible for reviewing and approving all project plans and major project decisions before they are submitted to ROCAP. The project directing committee will also be responsible for contacts with high level member country counterparts and with establishing working relations with collaborating institutions.

An internal technical support committee made up of INCAP personnel having principal responsibility for carrying out project activities will also be established. The Project Coordinator will head up this committee and the project's long-term technical advisor will also be a member. This committee will be responsible for developing detailed project plans and for project implementation and management. (Annex I.7.B summarizes project personnel and their responsibilities.)

In addition to the INCAP implementation committees, a regional technical advisory committee made up of the coordinators of each country task force will provide guidance on project plans and implementation. The members of this advisory group will also serve as the principal liaisons between INCAP and the country task forces. A consultant and collaborating institutions group will provide the additional technical expertise required by the project.

2. Administration at ROCAP

ROCAP's Food and Nutrition Advisor will have primary responsibility for managing the project. A long term U.S. specialist will be assigned to the project and will function as an advisor to INCAP on all project activities and as the technical liaison between ROCAP and INCAP. Specifically, the long term advisor will be responsible for providing technical guidance and oversight for all research activities on a day to day basis; will help in setting up peer group reviews and outside technical assistance as needed and will be responsible for advising on and reviewing the technical content of all promotion, education training, management and

technical information dissemination materials. Up to 15% of the long term advisor's time will also be made available to help USAIDs in the region develop bilateral activities in ORT, growth monitoring and related health/nutrition education. The technical advisor will provide technical assistance directly to country programs in conjunction with INCAP staff and Central American consultants, as appropriate.

Within ROCAP, an implementation committee has been established with representatives from the Program, General Development, Project Development and Controller's offices. As needed, they will assist the Food and Nutrition Officer in addressing any implementation issues that may arise.

From its experience with other ROCAP projects, INCAP is familiar with the general administrative requirements, such as progress reports and financial controls, which ROCAP establishes, and has demonstrated its capacity to comply with them. In light of this experience, no administrative problems are anticipated.

B. Implementation Plan

The schedule of all major events as they are currently planned is contained in Annex I.10.2. This schedule reflects the combined judgement of INCAP and ROCAP as to when these events should occur within the context of the overall three phase strategy including promotion and planning, implementation and evaluation.

Regular monitoring of project progress will assure early recognition of unanticipated problems and areas where modifications are needed. Detailed work plans and budgets will be developed annually and adjusted every six months. Regular progress reports covering activities and accomplishments, factors affecting implementation, financial status and, based on these, planned activities during the next reporting period will be prepared by the project staff and quarterly reviews of project progress will be conducted with INCAP and ROCAP participation.

C. Evaluation Plan

1. Project Evaluations

A total of four formal evaluations will be conducted jointly by ROCAP and INCAP with a team of outside consultants during critical stages of project implementation. In addition, outside consultants will be brought in to review progress of specific research and training activities at key points during their planning and implementation. These mini-evaluation activities will be scheduled as needed.

The first evaluation will be held at the end of Phase I approximately one year into project implementation. At this point the project

staff will all be on board, country assessments and national strategies will have been completed, the first regional seminar and the first national seminars will have taken place, all regional research activities will be underway and detailed plans for the first year of the implementation phase will be available. The evaluation team will review project planning, coordination and management; INCAP and country team organization and preparations for Phase II activities; baseline information for evaluating country programs; Phase II implementation plans and progress on research activities whose results will be incorporated into technical and educational packages during the second phase.

Two other formal evaluations will be conducted approximately one year and two years into Phase II implementation. These evaluations will examine progress of activities under each component, project management, the appropriateness of technical assistance, training, technical information dissemination and operations research activities and progress being made by the countries in extending use of ORT, Growth Monitoring and Associated Education. Recommendations from these evaluations will be used to reorient project activities.

A final evaluation will be held during the last six months of the project in conjunction with the project's evaluation phase. This evaluation will focus on the projects results and impact on country programs as well as looking at future member country needs for the type of assistance provided under the project.

2. Country Program Evaluations

The project contemplates a series of evaluation activities which will help the participating countries evaluate the progress and impact of their programs. These activities will also be used to evaluate the project's final results. Initial (Phase I) surveys or studies will serve as baseline data and subsequent information will be used for measuring program progress and impact. Information for program evaluation will be drawn from the following activities:

a. Institutional and program assessments will be conducted in preparing country documents for first, second and final regional seminars.

b. Community and provider studies will be conducted in three locales in each country during Phase I and repeated in one locale during Phase III. Focus group studies will be carried out on an annual basis throughout the life of project.

c. A module on knowledge attitudes and practices regarding diarrheal disease, mortality and morbidity, ORT, growth monitoring and appropriate feeding practices will be inserted in already programmed national household or similar surveys in each country at the beginning and end of the project.

d. Knowledge, attitude and practices (KAP) questionnaires will be administered to all health professionals or health service providers taking part in any and all training activities receiving project support or technical assistance throughout the life of the project.

e. Morbidity and mortality sentinel areas will be established in at least four of the six countries and will function throughout the life of the project.

f. Regular health sector information systems will be upgraded during the life of the project so that they can eventually provide each country with the capacity for measuring program process and impact.

Several of these evaluation methodologies have been tried under the Regional and Panama Lactation Promotion projects and have been found to be successful and relatively inexpensive. Others, such as the morbidity and mortality impact studies have been successfully tried in other parts of the world and similar community and provider studies have been conducted in Central America.

3. Termination of AID Assistance

At the end of five years of intensive effort in getting ORT, GM and AFP established in the region, it is expected that it will require a much reduced level of effort to help countries maintain the advances that have been made. The countries, and therefore INCAP, should be ready to address new priorities. If project personnel are needed for the new priorities they will be incorporated into future INCAP efforts, if not, they will return to their own countries to work. Since most of the personnel will be Central Americans, their skills will not be lost to the region. As has happened in the past, these people will likely become part of INCAP's ex-student, counterpart and consultant network in the region and will be available for future collaborative work or short term consultancies.

Technical information dissemination, training, technical assistance and research are permanent INCAP programs and will continue, focusing on the member countries' future priorities and the next set of challenges in reducing malnutrition, increasing household and community food availability and improving health, while maintaining past accomplishments. If AID or other donor funding does not exist, these activities will simply be carried out at a substantially lower level of effort, obviously with less impact.

D. Procurement Plan

INCAP will serve as its own agent for the procurement of all goods and services required for the project except the contract for U.S. technical assistance, which will include a long term advisor. INCAP procurement

procedures have been reviewed by ROCAP on various occasions and again during intensive project review. They have been found to be consistent with AID regulations. From its experience with previous ROCAP projects, INCAP is familiar with AID procurement regulations, and has demonstrated that it has the capacity to carry out the planned procurement activities.

1. Technical Services

Long and short-term technical services, a long-term U.S. advisor and a limited amount of short term U.S. consultant time will be procured for the project. To satisfy the need for long-term project staff and short term services, INCAP will contract individually for each position. This is its normal practice and offers a large pool of potential candidates from which to draw. It is expected that most of the project staff and short-term consultants will be recruited from CA/P countries. However, it may be necessary to recruit some of the project staff from outside the CA/P region if it is found that sufficient expertise is not available in the region. If the project must recruit certain members of the long-term project staff from other LAC or Code 941 countries, a request for a 941 source/origin waiver will be submitted to AID/W.

To recruit for these staff positions, INCAP will place announcements in newspapers and technical publications, utilize contacts in national and international institutions and contact the USAIDs to identify potential candidates. Scopes of work will be provided to all interested individuals. After reviewing each application, INCAP will hire the most qualified individual for each position.

ROCAP will serve as the procurement agent for the U.S. advisors. It is anticipated that a U.S. institution will be contracted to provide a high level U.S. or international long term advisor and approximately twelve months of highly specialized U.S. or international consultants. The long term advisor should be a physician who has had substantial hands on experience with research, case management and delivery aspects of oral rehydration, PEM and growth monitoring. Because of the level of sophistication of research at INCAP and in the Central American region, the long term advisor needs to be an internationally known and respected scientist to be effective.

Normal AID procurement procedures will be used in selecting the U.S. contractor. In order to assure the identification of a person with the specialized qualifications necessary to effectively fill the senior long term advisor position, competition should be as broad as possible.

2. Commodities

Project financed commodities will be purchased by INCAP following the guidance provided in Handbook 11. Most of the project

commodities will be purchased in the United States. Some, however, may be bought locally in the CA/P region. Annex II/11 contains a list of the commodities needed to support the research, training and technical cooperation to be provided by the project. This includes computer equipment designed to upgrade and expand the word processing and data analysis capacity at INCAP in order to meet the requirements of the project. M/SER/IRM will be asked to review and approve the specifications of this equipment prior to its procurement.

E. Waivers

It may not be possible to recruit all of the project staff from Central America/Panama and the U.S. If so, appropriate source/origin waivers for Code 941 procurement will be submitted to AID/W for approval.

F. Conditions, Covenants and Negotiating Status

1. Conditions Precedent to Disbursement

a. First Disbursement

The standard CPS to initial disbursement will apply, including the designation of official INCAP representatives and their authorized signatures.

b. Subsequent Disbursements

Prior to disbursement of funds for activities other than for hiring long-term personnel, INCAP will prepare and submit a detailed workplan and budget for the first year of the project (Phase I) to ROCAP for approval.

2. Covenants

a. Work Plans and Budget

INCAP will covenant that prior to undertaking activities each year after the first year of the project, it shall furnish in form and substance satisfactory to AID a consolidated work plan and budget for all project activities for that year.

b. INCAP will covenant to coordinate appropriate project activities with USAID Missions in each country and to collaborate with bilateral USAIDs in the development of projects designed to expand the use of oral rehydration therapy growth monitoring and related education.

3. Negotiating Status

The design of the proposed project has been developed in close collaboration with INCAP. ROCAP believes that all issues have been discussed and resolved with INCAP during the design process. There should be no problems in negotiating the grant agreement which can be signed shortly after the project is authorized.

ACTION ROCP INFO AMB DCM AID ECON CHRON/10

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PP RUEHGT
DE RUEFC #5695/01 1382102
ZNR UUUUU ZZE
P 171957Z MAY 84
FM SECSTATE WASHDC
TO RUEHGT/AMEMBASSY GUATEMALA PRIORITY 8425
RUEFSN/AMEMBASSY SAN SALVADOR PRIORITY 8061
RUEFSJ/AMEMBASSY SAN JOSE PRIORITY 9336
RUEFTG/AMEMBASSY TEGUCIGALPA PRIORITY 0435
RUEHZZ/AMEMBASSY PANAMA PRIORITY 7192
RUEHBT/AMEMBASSY BELIZE PRIORITY 5677
BT
UNCLAS STATE 145695

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CN: 14987
CHRG: ROCP
DIST: ROCP

MAY 18 8 23 AM '84
MAIL ROOM
USAID/GUATEMALA

AIDAC, GUATEMALA FOR ROCAP ACTION: PROGRAM
INFO: GENERAL DEV

F.O. 12356: N/A

TAGS:

SUBJECT: ORAL REHYDRATION THERAPY PROJECT PID (596-0115)

1. THE DAEC REVIEWED AND APPROVED THE SUBJECT PID ON MAY 2, 1984. BECAUSE THE PROJECT IS FAIRLY COMPLEX AND IS INTENDED TO HAVE A BROAD IMPACT ON MALNUTRITION AND DIARRHEAL DISEASES IN MANY CENTRAL AMERICAN COUNTRIES, IN ORDER TO FACILITATE THE BROADEST POSSIBLE PARTICIPATION AT THE REVIEW, THE BUREAU ASKS THAT THE PP BE SUBMITTED TO AID/W FOR APPROVAL. THE FOLLOWING GUIDANCE SHOULD BE TAKEN INTO ACCOUNT DURING PP DEVELOPMENT:

2. RESEARCH COMPONENT: THE PP SHOULD INCLUDE A PRECISE DESCRIPTION OF THE NEED FOR, AND THE OBJECTIVES OF THIS COMPONENT, AS WELL AS THE LINKAGES BETWEEN EACH PROPOSED STUDY AND THE VARIOUS OBJECTIVES OF THE PROJECT. A.I.D./W IS CONCERNED THAT ALL RESEARCH BE DESIGNED SOLELY TO ACHIEVE THE OBJECTIVE OF EXTENDING THE COVERAGE OF EFFECTIVE ORT TECHNOLOGIES THROUGHOUT THE PARTICIPATING COUNTRIES. IN ADDITION, THE PP SHOULD

CONTAIN CLARIFICATION ON HOW THE RESULTS OF RESEARCH WILL FEED BACK INTO THE OPERATIONAL COMPONENTS OF THE PROJECT. THE BUREAU RECOMMENDS THAT THE MISSION CONSIDER A PHASED APPROACH TO THIS COMPONENT, STARTING FIRST WITH AN ASSESSMENT OF KEY CONSTRAINTS TO RAPID EXPANSION AND REFINEMENT OF THE SELECTED TECHNOLOGIES (ORT, GROWTH MONITORING, AND NUTRITION EDUCATION), AND SECOND, PRIORITIZING THE RESEARCH ISSUES, AND, FINALLY, CONDUCTING THE SENSITIZATION AND DEMONSTRATION STUDIES.

3. PARTICIPATION OF BELIZE: THE BUREAU CONCURS WITH THE MISSION'S REQUEST TO PERMIT BELIZE TO PARTICIPATE IN THIS PROJECT, ASSUMING ALL MEMBER COUNTRIES, INCLUDING GUATEMALA, ARE WILLING TO ACCEPT BELIZE'S INVOLVEMENT.

4. PRIVATE SECTOR INVOLVEMENT: THE MISSION IS ASKED TO

THIS DOCUMENT IS UNCLASSIFIED
DATE 10/12/01 BY SP-10/12/01
BY *[Signature]*
ACTION: *[Signature]*
DATE: *[Signature]*

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EXPLORE THE INCORPORATION OF PRIVATE SECTOR ENTITIES AS IMPLEMENTERS OF PROJECT ACTIVITIES. THE MISSION SHOULD EXAMINE EACH MAJOR PROJECT ACTIVITY TO DETERMINE WHAT ELEMENTS MIGHT BE COST-EFFECTIVELY CONTRACTED OUT TO THE PRIVATE SECTOR. THOSE COMPONENTS THAT INITIALLY APPEAR TO BE APPROPRIATE FOR CONTRACTING INCLUDE: EVALUATION, INFORMATION SYSTEMS, AND DISSEMINATION OF TECHNICAL INFORMATION. FURTHER, THE MISSION SHOULD INVESTIGATE THE CAPABILITY OF THE PRIVATE SECTOR TO SERVE AS THE PRIMARY DELIVERY CHANNEL FOR THE ORT, GROWTH MONITORING, AND NUTRITION EDUCATION TECHNOLOGIES, WITH THE ULTIMATE OBJECTIVE TO MAXIMIZE THE NUMBER OF PEOPLE THROUGH BOTH THE PRIVATE AND PUBLIC SECTOR WHO WILL BE AFFECTED.

5. PARASTATALS: THE BUREAU UNDERSTANDS THAT PARASTATALS ARE PRIMARILY RESPONSIBLE FOR THE MANUFACTURING OF ORS IN CAP COUNTRIES. ALTHOUGH THE PROJECT DOES NOT FUND THE MANUFACTURING OF ORS, THIS IS A COMMODITY WHICH IS KEY TO THE SUCCESS OF THE PROJECT. ROCAP SHOULD DETERMINE WHETHER OR NOT IT IS POSSIBLE FOR THESE ENTITIES TO INCREASE THEIR PRODUCTION, AND WHETHER THE PRODUCTION BY THESE GOVERNMENT AGENCIES IS THE MOST EFFECTIVE MEANS TO ACHIEVE THE PROJECT'S GOAL. DURING PP DEVELOPMENT, THE MISSION SHOULD DETERMINE THE CAPACITY AND WILLINGNESS OF PRIVATE FIRMS TO UNDERTAKE THIS PRODUCTION.

6. EVALUATION: THE EVALUATION PLAN CONTAINED IN THE PP SHOULD INCLUDE A PROGRAM FOR PHASE-OUT ACTIVITIES BY A.I.D. THIS PROGRAM SHOULD PRECISELY DESCRIBE HOW INCAP WILL FUND THE ADDITIONAL STAFF AND ACTIVITIES WHICH THE PROJECT HAS INITIATED.

7. FINANCIAL PLAN: THE FINANCIAL PLAN CONTAINED IN THE PID INCLUDES ONLY INCAP AND ROCAP'S CONTRIBUTION TO THE PROJECT. THE FINANCIAL ANALYSIS SECTION OF THE PP SHOULD ALSO ENCOMPASS THE NECESSARY INDIVIDUAL GOVERNMENT INPUTS, ANY OTHER BILATERAL A.I.D. MISSIONS' CONTRIBUTIONS, AND HOW THEY WILL BE ASSURED.

8. FUNDING: A.I.D. FUNDING OF THIS PROJECT WOULD DEPEND ON THE OUTCOME OF THE FY 1984 SUPPLEMENTAL AND FY 1985 BUDGET PROCESS, AND THE BUREAU REVIEW OF THE ROCAP CDSS.

9. BENEFICIARIES: THE PP SHOULD TAKE A CAREFUL LOOK AT THE TARGET POPULATIONS IN EACH COUNTRY AND HOW THE PROJECT WILL REACH THOSE BENEFICIARIES THAT ARE NOT PRESENTLY BEING COVERED BY A.I.D. BILATERAL, HOST COUNTRY, AND OTHER DONOR PROJECTS. IN ADDITION, THE PP SHOULD SET TARGETS FOR INCREASES IN THE NUMBER OF RECIPIENTS FOR THE SELECTED TECHNOLOGIES (ORT, NUTRITION EDUCATION, AND GROWTH MONITORING) FOR EACH COUNTRY.

10. ECONOMIC ANALYSIS: IN THE PID, THE MISSION NOTES THAT QUOTE EXPERIENCE FROM OTHER NUTRITION PROJECTS HAS SHOWN THAT RATES OF RETURN OF 20 PERCENT TO 30 PERCENT CAN BE EXPECTED UNQUOTE FOR THIS PROJECT. HOWEVER, THE BUREAU WANTS TO CAUTION THAT SUCH RETURNS ARE NOT AUTOMATIC, REGARDLESS OF THE AMOUNT OF INVESTMENT MADE. SINCE THE PROPOSED PROJECT INVOLVES CONSIDERABLE EXPENDITURES AT THE REGIONAL LEVEL ON TOP OF NATIONAL-LEVEL EXPENDITURES, AN ATTEMPT SHOULD BE MADE TO QUANTIFY THE ADDITIONAL BENEFITS TO BE GAINED FROM THE PROPOSED REGIONAL RESEARCH, TRAINING, AND OTHER ACTIVITIES, AND TO COMPARE THEM WITH PROJECT COSTS. ALTERNATIVELY, OR, IN ADDITION, COST-EFFECTIVENESS ANALYSIS SHOULD BE EMPLOYED TO DETERMINE WHETHER THE PROJECT, AS PRESENTLY DESIGNED, REPRESENTS THE BEST WAY AMONG POSSIBLE ALTERNATIVES (INCLUDING MORE EFFORTS AT THE NATIONAL LEVEL AND LESS AT THE REGIONAL, AND MORE EMPHASIS ON PREVENTION AS OPPOSED TO TREATMENT) TO ACHIEVE THE DESIRED OBJECTIVES.

11. INCAP: SINCE THIS PROJECT IS ONE OF SEVERAL REGIONAL ACTIVITIES FOR WHICH INCAP IS THE IMPLEMENTING AGENCY, THE PP SHOULD INCLUDE A STATEMENT OF ROCAP'S STRATEGY FOR THE INSTITUTIONAL FUTURE OF INCAP AND HOW THIS PROJECT WOULD HELP MOVE THAT PLAN FORWARD.

12. PARTICIPATING COUNTRIES: THE DATA CONTAINED IN THE PID INDICATES THAT THE NEED FOR PROJECT ACTIVITIES VARIES CONSIDERABLY AMONG THE CENTRAL AMERICAN COUNTRIES. THE BUREAU BELIEVES THAT THE PROJECT SHOULD BE PRINCIPALLY FOCUSED ON THE FOLLOWING COUNTRIES; HONDURAS, GUATEMALA, EL SALVADOR, AND BELIZE. IF COSTA RICA AND PANAMA ARE INCLUDED IN THE PROJECT, ONLY THOSE COMPONENTS WHICH ARE NOT CURRENTLY BEING EFFECTIVELY IMPLEMENTED (I.E. GROWTH MONITORING) SHOULD BE CARRIED OUT IN THESE COUNTRIES.

13. RELATIONSHIP TO BILATERAL MISSIONS: THE PP SHOULD INCLUDE ALL COMMENTS AND SUGGESTIONS FROM THE PARTICIPATING BILATERAL MISSIONS. FURTHER, THE DOCUMENT SHOULD OUTLINE WHAT THE ROLE AND RESPONSIBILITIES OF THE BILATERAL MISSIONS ARE AND HOW THEY WILL PARTICIPATE IN NEGOTIATIONS WITH THE PARTICIPATING COUNTRY GOVERNMENTS.

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LOGICAL FRAMEWORK
 Oral Rehydration Therapy, Growth Monitoring and
 Education in Primary Health Care
 596-0115

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program Goal:	Measures of Goal Achievement		Assumptions for Achieving Goal Targets:
To reduce infant mortality and severe malnutrition in Central America and Panama.	Infant mortality rates decreased in all countries but most significantly in El Salvador, Guatemala and Honduras	National nutrition, demographic and other household surveys.	Continued national level commitments to improve primary health care.
		Census Data.	Nutritious foods available at reasonable cost to the entire population.
	Decrease in percentage of children under age five exhibiting severe growth retardation	Information systems of national health services.	
		Surveys of sentinel areas.	

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Purpose:			Assumptions for Achieving Purpose:
To increase effective use of oral rehydration therapy, growth monitoring and appropriate related feeding practices in Central America and Panama.	Improved national capacity to plan, implement and evaluate programs aimed at control and treatment of diarrheal diseases, growth monitoring and related health/nutrition education.	INCAP and national institution records.	National priority for primary health care will result in necessary resources being provided to ensure widespread dissemination of ORT and carrying out of growth monitoring and educational activities.
	Health care personnel are better trained in ORT, growth monitoring and proper feeding practices.	Results from project evaluations.	
	Technical information is disseminated in a timely manner and utilized by health care personnel in the region.	Results from country process and impact evaluations.	
	Practical knowledge regarding proper post diarrheal feeding practices; LBW risk indicators and appropriate intervention; and prevention on management of chronic diarrhea and its nutritional consequences is available.	Quality and usefulness of data, available from health information systems for planning, implementation and evaluation.	
	Increased availability and commercial sales of ORS in the region.		

NARRATIVE SUMMARY**OBJECTIVELY VERIFIABLE
INDICATORS****MEANS OF VERIFICATION****IMPORTANT ASSUMPTIONS**

Strengthened national health information systems existing in each country.

Acceptance of appropriate practices for home treatment of diarrheal diseases and associated protein-energy malnutrition by 50% of households in Central America and Panama.

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs:	Magnitude of Outputs:		Assumptions for Achieving Outputs:
<u>A. Planning & Promotion</u>			
Protocols developed for formulating national strategies and carrying out country assessments.	1 protocol for strategy development; 7 guidelines for country assessments; 6 training/education, mass communications, management logistics, financial, HIS ORS production/commercial distribution.	Seminar proceedings and project quarterly and annual reports.	National technicians from public and private sectors available to participate in all project activities.
Country program assessments conducted.	6 sets of assessments (1 per country)	Project quarterly and annual reports	
Baseline community and provider studies conducted	6 sets of studies (1 per country)	Project quarterly and annual reports.	
Individual country strategies and implementation plans prepared or improved.	6 country strategies.		
Regional planning seminar.	1 seminar	Seminar proceedings.	
National planning seminars	6 seminars (1/country)	Seminar proceedings.	
T.A. provided to C.A. countries for planning and promotion activities.	18 person months of services.	Project quarterly and annual reports.	

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NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE		
	INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs	Magnitude of Outputs:		Assumption for achieving Outputs:
Research Protocols developed	3 regional and four multi-center research protocols.	Project quarterly and annual reports.	
Media Library and Technical Information Center established at INCAP	1 media library 1 technical information dissemination center.	Project quarterly and annual reports, publications and evaluations.	
Regional Human Resources Data Bank established	1 Human Resource Data Bank	Project quarterly and annual reports, publications and evaluations.	
B. <u>Implementation</u>			
Annual regional workshops to review progress on strategies.	4 regional workshops	Project quarterly and annual reports, evaluations and publications.	Funds will be available from national budgets, AID bilateral programs or other donors to cover major in country training, material and equipment costs.
Annual national workshops to review progress on strategies.	4 national workshops per country.		
Regional workshop to strengthen private sector involvement.	1 regional workshop.		
Regional opinion leaders workshop.	1 regional workshop.		
Mid-project regional seminar.	1 regional seminar.		
Program implementation guides developed.	1 set		
Regional Management and HIS courses conducted.	5 regional courses in program management, logistics finance and HIS.		

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs (cont'd)	Magnitude of Outputs:		Assumptions for achieving Outputs:
National management and HIS courses conducted.	5 national courses per country in management logistics, finances, HIS and ORS commercial sales.		
National PVO management courses conducted.	1 national course in 4 countries.		
Guidelines on technical content for educational and case management packages developed.	1 set	Project quarterly and annual reports, evaluations and publications.	
Special regional educational activities for MDs and RNs developed.	2 sets of regional activities.		
Regional and mass communications workshops or courses.	5 regional workshops or courses.		
Training and mass communications workshops or courses.	4 national workshops or courses		
National PVO workshop for education and training.	1 workshop in each of four countries.		
Technical information dissemination by INCAP.	16 quarterly newsletters, continuous dissemination of technical documents, audiovisuals and research results. 3 bibliographic listings 3 users resources guides 1 guideline for developing national information clearing houses.	Project quarterly and annual reports, evaluations and publications. Newsletters Special technical publications.	

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs (cont'd)	Magnitude of Outputs:		
Regional research activities carried out.	3 regional research activities completed.	Project quarterly and annual reports and research publications.	
Country specific research carried out.	20 small operations research activities 4 multicenter studies carried out, one in all six countries and 3 in four countries.	Project quarterly and annual reports, publications and evaluation. INCAP and national institution records.	
T.A. provided to C.A. countries for strengthening delivery and information systems, education training and mass communications, production, commercial distribution and research activities.	170 man months.	Project quarterly and annual reports and evaluations.	
<u>C. Evaluation</u>			
Final regional seminar to identify accomplishments and continuing needs and to recommend future course of action.	1 regional seminar	Seminar proceedings; project evaluations; data from health sector information systems; national surveys and central area surveys.	

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NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs (cont'd)	Magnitude of Outputs:		
National program process and impact evaluations.	2 program process and one impact evaluation per per country.	Management and logistics systems assessments Anthropological community and provider studies	
Final project reports.	1 final project report 39 research reports 20 operations research reports.	KAP surveys of health sector professionals.	

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NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Inputs:	Implementing Target		
<u>AID Contribution</u>	(\$000)	ROCAP accounting records.	Inputs provided on a timely basis.
Management Evaluation	1,298		
Promotion and Training	1,403		
Technical Assistance	1,000		
Technical Information			
Dissemination	217		
Operations and Evaluation			
Studies	719		
Research	916		
INCAP Common Services	1,666		
U.S. Technical Assistance	<u>781</u>		
TOTAL	8,000		
<u>INCAP Contribution</u>			
Management and Evaluation	650	INCAP accounting records	
Research	200		
INCAP Common Services	<u>250</u>		
TOTAL	1,100		
<u>Host Country Contributions</u>		INCAP records	
Promotion and Training	730		
Technical Assistance	250		
Operation and Evaluation			
Studies	<u>550</u>		
TOTAL	1,530		

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5C(2) PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A. includes criteria applicable to all projects. Part B. applies to projects funded from specific sources only: B.1. applies to all projects funded with Development Assistance Funds, B.2. applies to projects funded with Development Assistance loans, and B.3. applies to projects funded from ESP.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

A. GENERAL CRITERIA FOR PROJECT

1. FY 1982 Appropriation Act Sec. 523; FAA Sec. 634A; Sec. 653(b).

(a) Describe how authorizing and appropriations committees of Senate and House have been or will be notified concerning the project;
(b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that amount)?

a. Congressional Notification Process.

b. The project is included in the FY 1984 Supplemental submitted to the Congress.

2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,00, 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?
- a. Yes
- b. Yes
3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance? N.A.
4. FAA Sec. 611(b); FY 1982 Appropriation Act Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as set forth in the Principles and Standards for Planning Water and Related Land Resources, dated October 25, 1973? (See AID Handbook 3 for new guidelines.) N.A.
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project? N.A.
-

6. FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.
- Project is a regional effort.
7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; and (c) encourage development and use of cooperatives, and 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.
- a. No
b. No
c. No
d. No
e. No
f. No
8. 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).
- U.S. technical assistance will be utilized and commodities will be purchased from U.S. private enterprise.
-

9. FAA Sec. 612(b), 636(b);
FY 1982 Appropriation
Act Sec. 507. 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. The regional institution
will contribute 14% to
project costs.
10. 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? No
11. FAA Sec. 601(e). Will
the project utilize
competitive selection
procedures for the
awarding of contracts,
except where applicable
procurement rules allow
otherwise? Yes
12. FY 1982 Appropriation Act
Sec. 521. 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? N.A.
13. FAA 118(c) and (d).
Does the project comply
with the environmental
procedures set forth in
AID Regulation 16? Does
Yes
N.A.
-

the project or program take into consideration the problem of the destruction of tropical forests?

14. FAA 121(d). If a Sabel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (dollars or local currency generated therefrom)? N.A.

B.. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(b), 111, 113, 281(a). 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, 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; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and

- a. The project will ultimately assist the poor in development by enabling the CA/P countries to better plan and implement programs to reduce infant and child mortality and severe malnutrition
- b. See a) above.

otherwise 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?

b. FAA Sec. 103, 103A, 104, 105, 106. Does the project fit the criteria for the type of funds (functional account) being used?

c. FAA Sec. 107. Is emphasis on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?

d. FAA Sec. 110(a). Will the recipient country provide at least 25% 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)?

- c. CA/P countries have requested activities of this project to improve their national nutrition programs.
- d.. Women and their children constitute the principal project beneficiaries.
- e. Project is a regional effort.

Yes

Yes

N.A. Assistance is to a regional organization; however, substantial resources will be committed by each participating country to support in-country activities.



e. FAA Sec. 110(b).

Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"? (M.O. 1232.1 defined a capital project as "the construction, expansion, equipping or alteration of a physical facility or facilities financed by AID dollar assistance of not less than \$100,000, including related advisory, managerial and training services, and not undertaken as part of a project of a predominantly technical assistance character.

N.A.

f. FAA Sec. 122(b). 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?

No impact.

g. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage

Training, technical assistance and research needs were based on consultants' reports and interviews with INCAP and national level technicians in the region. Human resources to be utilized in undertaking project activities will be drawn heavily from the CA/P region.

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institutional development;
and supports civil
education and training in
skills required for
effective participation in
governmental processes
essential to self-government.

2. Development Assistance Project
Criteria (Loans Only)

- a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, at a reasonable rate of interest. N/A
- b. 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% of the enterprise's annual production during the life of the loan? N/A
- c. ISDCA of 1981, Sec. 724 (c) and (d). If for Nicaragua, does the loan agreement require that the funds be used to the maximum extent possible for the private sector? Does the project provide for monitoring under FAA Sec. 624(g)? N/A

3. Economic Support Fund
Project Criteria

- a. FAA Sec. 531(a). Will this assistance promote economic or political N/A
-

stability? To the extent possible, does it reflect the policy directions of FAA Section 102?

- b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities? N/A

 - c. FAA Sec. 534. Will ESP funds be used to finance the construction of the operation or maintenance of, or the supplying of fuel for, a nuclear facility? If so, has the President certified that such use of funds is indispensable to nonproliferation objectives? N/A

 - d. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made? N/A
-

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5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

- | | | |
|----|--|-----|
| 1. | <u>FAA Sec. 602.</u> Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed? | Yes |
| 2. | <u>FAA Sec. 604(a).</u> Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him? | Yes |
| 3. | <u>FAA Sec. 604(d).</u> 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? | Yes |
| 4. | <u>FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a).</u> If offshore procurement of agricultural commodity or product is to be | N/A |
-

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

5. FAA Sec. 604(q). Will construction or engineering services be procured from firms of countries otherwise eligible under Code 941, but which have attained a competitive capability in international markets in one or these areas? N/A
6. FAA Sec. 603. Is the shipping excluded from compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum 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 that such vessels are available at fair and reasonable rates? N/A
7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? If the facilities of other Yes
-

Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

8. International Air Transport. 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? Yes
9. FY 1982 Appropriation 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? Yes

B. Construction

1. FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services to be used? N/A
2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable? N/A
-

3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million (except for productive enterprises in Egypt that were described in the CP)? N/A

C. Other Restrictions

1. FAA Sec. 122(b). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter? N/A
2. 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? N/A
3. FAA Sec. 620(b). 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? Yes
4. Will arrangements preclude use of financing:
- a. FAA Sec. 104(f); FY 1982 Appropriation Act Sec. 525: (1) To pay for performance of abortions as a method of family Yes
-

planning or to motivate or coerce persons to practice abortions; (2) to pay for performance of involuntary sterilization as method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization; (3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; (4) to lobby for abortion?

b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property? Yes

c. FAA Sec. 660. To provide training or advice or provide any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? Yes

d. FAA Sec. 662. For CIA activities? Yes

e. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? Yes

f. FY 1982 Appropriation Act, Sec. 503. To pay pensions, annuities, retirement pay, or Yes

adjusted service
compensation for military
personnel?

- g. FY 1982 Appropriation Act, Sec. 505. To pay U.N. assessments, arrearages or dues? Yes
- h. FY 1982 Appropriation Act, Sec. 506. To carry out provisions of FAA section 209(d) (Transfer of FAA funds to multilateral organizations for lending)? Yes
- i. FY 1982 Appropriation Act, Sec. 510. To finance the export of nuclear equipment, fuel, or technology or to train foreign nationals in nuclear fields? Yes
- j. FY 1982 Appropriation Act, Sec. 511. Will assistance be provided 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? Such assistance will not be provided.
- k. FY 1982 Appropriation Act, Sec. 515. To be used for publicity or propaganda purposes within U.S. not authorized by Congress? Yes
-

AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D C 20523

LAC/DR-IEE-85-01

ENVIRONMENTAL THRESHOLD DECISION

Project Location : ROCAP

Project Title and Number : Oral Rehydration Therapy
596-0115

Funding : \$7,500,000 (G)

Life of Project : 5 years

IEE Prepared by : Kevin Kelly, PDO
ROCAP/Guatemala

Recommended Threshold Decision : Categorical Exclusion

Bureau Threshold Decision : Concur with Recommendation

Comments : None

Copy to : John R. Eyre, Acting Director
ROCAP/Guatemala

Copy to : Mike Deal, ROCAP/Guatemala

Copy to : Lars Klassen, LAC/DR

Copy to : IEE File

James S. Hester Date OCT 23 1984

James S. Hester
Chief Environmental Officer
Bureau for Latin America
and the Caribbean

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INITIAL ENVIRONMENTAL EXAMINATION

Project Location : Central America and Panama
Project Title : Oral Rehydration Therapy Growth
Monitoring and Education in
Primary Health Care
Project Number : 596-0115
Life of Project : 5 years
IEE Prepared by : Kevin Kelly, PDO
Date : April 3, 1984
Action Recommended: Negative Determination

Concurrence:



John R. Eyre
Acting Director

James Hester
Environmental Officer
Bureau for Latin America
and the Caribbean

1. Project Description

The goal of the project is to reduce infant mortality and severe malnutrition in Central America and Panama by strengthening the capacity of regional and national institutions to use oral rehydration, growth monitoring and appropriate related feeding projects in dealing with the malnutrition-infection cycle which characterizes much of the region.

Technologies already exist which have been demonstrated to be effective in treating malnutrition and the infectious diseases which often result from the poor health and nutrition of the affected children. Project activities will utilize these technologies but will also conduct certain research activities to fill knowledge gaps. Training, both formal and non-formal, constitutes another principal project activity. A program to disseminate project-generated and other related information is also an important element in the project design.

2. Impact Identification and Evaluation

Project funds will finance personnel, research, training and information dissemination costs associated with the activities described above. The nature of these activities indicates that they will not have an effect on the natural or physical environment. Per Section 216.2(c)(2)(viii) of AID's environmental regulations, programs involving nutrition, health care or population and family planning services generally do not require an IEE because they have no impact on the environment (Section 216.2(c)(1)(i). Similarly, Section 216.2(c)(2)(i), 216.2(c)(2)(iii), and 216.2(c)(2)(v) identify education, training and technical assistance programs; analyses, studies, academic or research workshops and meetings; and document and information transfers as generally being not subject to environmental analysis.

The Mission, therefore, recommends that a negative determination be approved.

INSTITUTO DE NUTRICION DE CENTRO AMERICA Y PANAMA

OFICINA SANITARIA PANAMERICANA
Oficina Regional de la
ORGANIZACION MUNDIAL DE LA SALUD

October 9, 1984

Ref. IN-534-84/PL

ACTION. GDO

MAIL ROOM
USAID/GUATEMALA

OCT 15 11 01 AM '84

Mr. John Eyre
Director
ROCAP
8a. Calle 7-86, Zona 9
Guatemala

Dear Mr. Eyre:

Please find enclosed a copy of the project entitled "Oral Rehydration Therapy, Growth Monitoring and Education for Primary Health Care". The project is being submitted to the Agency for International Development (US AID) by INCAP with the aim of strengthening the governments efforts to incorporate a nutrition component in Primary Health Care activities oriented towards the goal of Health for All. At present INCAP is conducting research, training, technical assistance and dissemination of information to support programs promoting lactation and appropriate infant feeding. Nutrition education and food aid are also integral parts of nutrition in Primary Health Care. However, INCAP considers it essential to coordinate the nutrition efforts in each country, with past, present and future activities of PAHO, UNICEF, US AID and other international and bilateral agencies operating in the Region. Furthermore, it is important to incorporate within the nutrition component of Primary Health Care the following activities: Oral Rehydration Therapy (ORT), Growth Monitoring (GM) and Education for Primary Health Care (EPHC).

For several years international agencies such as the Pan American Health Organization (PAHO), UNICEF and INCAP, and bilateral agencies such as the Agency for International Development have provided technical and financial support for activities aimed at reducing diarrheal diseases and malnutrition. These efforts are reflected in some countries in important reductions in infant mortality and morbidity rates as well as in the prevalence of malnutrition. However, in spite of that, in most countries in the Region, individuals, ranging from health professionals to affected mothers, have not been adequately exposed to these technologies (including appropriate feeding practices). In addition, some knowledge gaps exist on the use

.../2

Mr. John Eyre
IN-534-84/PL
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of these technologies and in the development of appropriate educational packages needed to achieve their widespread dissemination.

Some specific problems identified by the countries are lack of educational and mass communication materials and resources, including oral solutions, logistics and financial problems, definition of anthropometric indicators and growth charts, and training of professional and paraprofessional personnel.

The objective of the project is to reduce infant and child mortality and morbidity and severe malnutrition in Central America and Panama. The strategy is to strengthen regional and national capacities to increase coverage and to effectively use oral rehydration therapy, growth monitoring and appropriate related feeding practices in the Region, as well as to strengthen preventive measures.

A three-phase implementation methodology, adopted from the Regional Lactation Project which demonstrated its effectiveness in maximizing national participation and information dissemination, is planned for the project. The major components of the project to be developed are research, education and mass communication and technical assistance to Oral Rehydration Therapy (ORT), Growth Monitoring (GM) and Education in Primary Health Care (EPHC) programs. Activities within the components are of a curative and preventive nature. Technical assistance comprises of promotion and support to country activities related to research, education and mass communication, as well as support to strengthen management activities in ORT, GM and EPHC programs, health information systems (HIS) and evaluation of program performance and monitoring of impact.

In support of these activities, the project will fund additional personnel at INCAP to provide technical services, and cover research and training costs, travel and per diem and long and short-term technical assistance. The support being requested from US AID is estimated at US\$7.2 million over the five-year implementation period. INCAP's expected contribution in providing national and international staff time, research equipment and data already available, and training and administrative support amounts to US\$1.1 million. The participant countries and the other agencies such as PAHO and UNICEF, will also contribute to this endeavor as they will participate in a technical committee whose terms of reference will be to coordinate the agencies efforts in the areas of ORT, GM and EPHC and to provide advise and if possible experts to develop properly the different components here proposed.

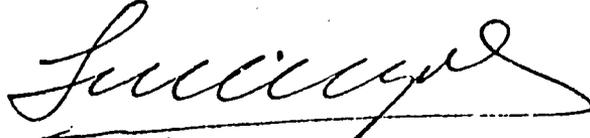
.../3

CPA

Mr. John Eyre
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I am looking forward to a favorable response to this proposal which will allow INCAP to support in-country efforts aimed at improving program performance in ORT, GM and EPHC.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Luis Octavio Angel". The signature is written in black ink and is positioned above a horizontal line.

Luis Octavio Angel
Director

Project Authorization

Name of Entity : Nutrition Institute for Central America and
Panama (INCAP)

Name of Project : Oral Rehydration Therapy, Growth Monitoring and
Nutrition Education

Number of Project: 596-0115

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the ORT, Growth Monitoring and Education Project with the Nutrition Institute for Central America and Panama (INCAP), involving planned obligations of not to exceed Eight Million United States Dollars (\$8,000,000) in grant funds ("Grant") over a five-year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the Project.

2. The project ("Project") consists of assistance to INCAP to strengthen the capacities of national and regional organizations in Central America and Panama to develop and implement effective ORT, Growth Monitoring and Appropriate Feeding Practices through a) advisory services, b) training, and c) research.

3. The Project Agreement, which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

a. Source and Origin of Commodities, Nationality of
Services

Commodities financed by A.I.D. under the Grant shall have their source and origin in countries which are members of the Central American Common Market ("CACM"), Belize and Panama, or the United States, except as A.I.D. may otherwise agree in writing. Except for ocean shipping, the suppliers of commodities or services shall have countries which are members of

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CACM, Belize, Panama, or the United States as their place of nationality, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Grant shall be financed only on flag vessels of the United States, except as A.I.D. may otherwise agree in writing.

b. Conditions Precedent to Disbursement

(1) Prior to the disbursement, or the issuance of any commitment documents, under the Project Agreement to finance activities other than for hiring long-term personnel, INCAP shall, except as A.I.D. may otherwise agree in writing, furnish, in form and substance satisfactory to A.I.D., a detailed time-phased plan setting forth all activities to be completed during the first year of the project.

c. Covenants

INCAP shall covenant that, except as A.I.D. may otherwise agree in writing:

(1) Prior to undertaking project activities for each year after the first year of the Project, INCAP will furnish, in form and substance satisfactory to A.I.D., a consolidated workplan and budget for activities for that year.

(2) INCAP will coordinate project activities with USAID missions in each country which participates in this project and will collaborate with bilateral USAIDs in the development of projects designed to expand the use of oral rehydration therapy, growth monitoring and related education. INCAP will also coordinate project activities with Ministries of Health in each participating country and with the Pan American Health Organization and its representatives in accordance with the INCAP Basic Agreement.

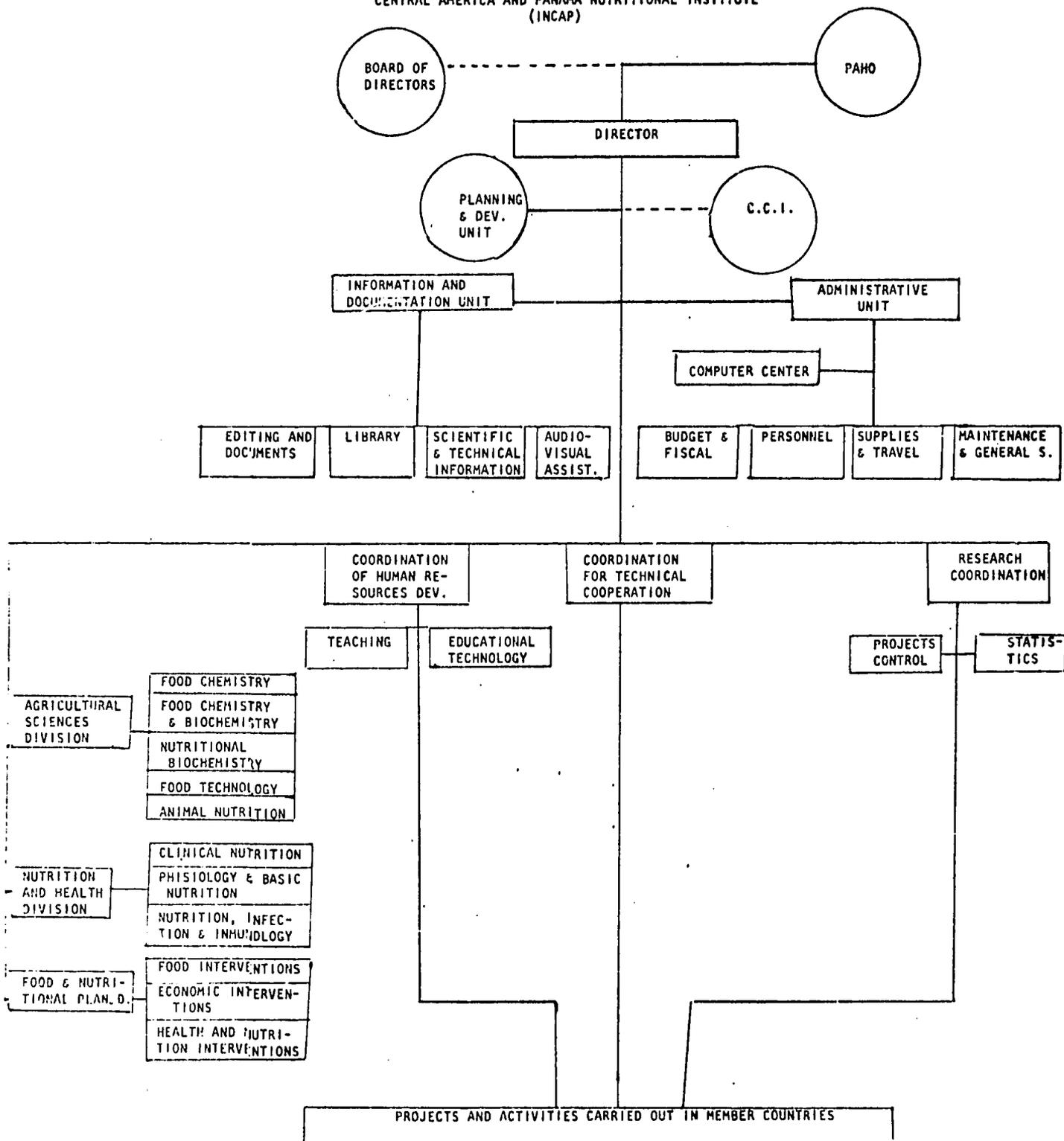
John R. Eyre
Acting Director

10.2

ORAL REHYDRATION SALTS AVAILABLE IN CENTRAL AMERICA AND PANAMA

<u>Product</u>	<u>Source</u>	<u>Available</u>	<u>Packet Size</u>	<u>Price Local Currency</u>	<u>Price U.S. Equivalent</u>
<u>Costa Rica</u>					
Electro-Dex Suero Oral	C.R./Private	Retail	1 Liter	C18.85	\$0.43
Suero Oral	C.R./Private (Raven)	Retail	280 ml.	C 5.00	\$0.12
Suero Oral	C.R./Private (Omini)	MOH/SS	280 ml.	--	--
<u>El Salvador</u>					
Dextrolito 1	E.S./Private (IQSA)	Retail	1 Liter	C1.50-2.50	\$0.60-\$1.00
Dextrolito 2	E.S./Private	Retail	1 Liter	C1.50-2.50	\$0.60-\$1.00
BI-Kalisal	E.S./Private	Retail	1 Liter	C1.23	\$0.50
Dexarocal-C	E.S./Private (Carosa)	Retail	1 Liter	--	--
UNICEF	Donated	MOH	1 Liter	--	--
AID	Donated	MOH	1 Liter	--	--
<u>Guatemala</u>					
Hidrafix	Brazil/Private	Retail	1 Liter	Q1.18	\$1.18
Dextrolito 1	E.S./Private	Retail	1 Liter	Q0.72	\$0.72
Dextrolito 2	E.S./Private	Retail	1 Liter	Q0.79	\$0.79
UNICEF	Donated	MOH/SS	1 Liter	--	--
MOH	Local area production	MOH	250 ml.	--	--
<u>Honduras</u>					
Litrosol	Honduras/Public (Dani)	MOH	1 Liter	--	--
Suerolito	Honduras/Private (Sandoval)	Retail	1 Liter	--	--
USAID	Donated (USA)	MOH	1 Liter	--	--
UNICEF	Donated	MOH	1 Liter	--	--
<u>Panama</u>					
Dextrolito 1	E.S./Private	Retail	1 Liter	B 0.93	\$0.93
Dextrolito 2	E.S./Private	Retail	1 Liter	B 1.03	\$1.03
UNICEF	Donated and Purchased	MOH/SS	1 Liter	--	--
<u>Belize</u>					
UNICEF	Donated	MOH	1 Liter	--	--

CENTRAL AMERICA AND PANAMA NUTRITIONAL INSTITUTE
(INCAP)



Project Personnel and Responsibilities

<u>Position (Specialization)</u>	<u>Name</u>	<u>% Time/ Funding Source</u>	<u>Principal Responsibilities</u>
<u>Directing Council</u>			
INCAP Director	L.O. Angel	10% INCAP	Final approval of project plans and policy decisions. Interactions with high level member country officials and collaborating institutions
Project Coordinator	H. Delgado	100% INCAP	
INCAP Administrator	J. Bejarano	15% INCAP	
Chief F&N Plan.	M. Imick	10% INCAP	
INCAP T.A.Coordinator	A. Noguera	10% INCAP	
<u>Core Project Staff</u>			
Project Coordinator (MD, epidemiologist)	H. Delgado	100% INCAP	Overall project direction and coordination; PI for Morbidity, Mortality and High Risk Studies; COPI Chronic Diarrhea/Malnutrition
Project Manager (Management Expert)	To be hired	100% ROCAP	Day to day Project management; project T.A. Coordinator; T.A./Training; Management aspects
Health Planner (MD, Health Planner)	To be hired	100% ROCAP	Coordinator of National planning and Promotion and Health Service Delivery components, T.A./training or Tech. aspects and planning management delivery issues.

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Position (Specialization)	Name	% Time/ Funding Source	Principal Responsibilities
Education and Training Coordinator (Mass communications)	To be hired	100% ROCAP	Coordinator of Education and Training Component T.A./Training in Mass Communications
Financial Analysts (Economist/financial analyst)	To be hired	100% ROCAP	T.A./Training/OR in financial aspects
Management Information Specialist (Systems analyst)	To be hired	100% ROCAP	Coordinator HIS component. T.A./Training/OR in HIS management and evaluation.
Logistics Specialist	To be hired	50% ROCAP (100% in 2-1/2	T.A./Training/OR in logistics, pro- duction and commer- cial distribution issues.
Training Specialist (training and education)	To be hired	50% ROCAP	T.A./Training/OR in education, training and promotion
Technical Information Dissemination Specialist (Training and education)	To be hired	50% ROCAP	Coordinator Technical Information Dis- semination Component, T.A./Training
CO-PI Dietary Treatment and Nutrition Rehab. (Nutritionist)	C. Dardano	50% INCAP	Hospital and Com- munity Dietary Treatment Studies; T.A./Training/OR

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Position (Specialization)	Name	% Time/ Funding Source	Principal Responsibilities
CO-PI Dietary Treatment and Nutrition Rehab. (Food Technologist)	M. Molina	25% INCAP	Hospital and Community Dietary Treatment Studies; T.A./Training/OR
CO-PI Epidemiology of Chronic Diarrhea/Malnutrition Research (Microbiologist)	J. Cruz	40% INCAP	Laboratory Aspects of Chronic Diarrhea/Malnutrition Studies
P.I. Anthropological Studies (Anthropologist)	E. Hurtado	50% ROCAP	Community and Health Provider Studies. T.A./Training/OR
Administrative Assistant	To be hired	100% INCAP	Project Administration
Accountant	To be hired	100% INCAP	Financial control and accounting
<u>Supporting Project Staff</u>			
INCAP Non-Formal Education and Training Unit Coordinator (Nutritionist/Education)	A. Praun	15% INCAP	Coordination with other INCAP activities. Assist with Nutrition Education T.A./Training/OR
Non-Formal Education and Training Specialist (Education/Health)	L. Gallardo	50% INCAP	Assist with Health Education. T.A./Training/OR

Position (Specialization)	Name	% Time/ Funding Source	Principal Responsibilities
INCAP Information Dissemination System Chief	M. Fischer	50% INCAP	Coordination with other INCAP activities. Assist with Information Dissemination Component. T.A./Training
Social Scientist/ Planner	M. Palmieri	55% INCAP	Assist with Health Del. and National Plan. Components T.A./Training/OR
INCAP Technical Assistance Co- ordinator (MD)	A. Noguera	10% INCAP	Coordination with Overall INCAP's T.A. Program
Assistant to INCAP/ Coordinator of School of Nutrition (Nutritionist/ Education)	M.E. Ardon de Robles	10% INCAP	Coordination with overall INCAP training program
Food and Nutrition Planner (Nutritionist)	V. Valverde	15% INCAP	Assist with HIS and evaluation aspects T.A./Training/OR
Financial Analyst (MBA, Economist)	C. Garcia	25% INCAP	Assist with financial analysis and management issues T.A./Training
Chief Nutrition in Health Division (Nutritionist)	B. Torun	10% INCAP	Assist with Dietary and Nutrition Re- habilitation Studies

LEVEL OF EFFORT ANALYSIS

(in person months)

PROJECT PERSONNEL		PROM.	NATL. PLAN	HLTH. DEL.	PROF. TR.	PUB. ED.	HIS	SCI.TECH. INFO.	ORS PROD.	COM. DIST.	RESEARCH	PROJ. MGT.ADM.	TOTAL
Project	I	3	3	-	-	-	-	-	-	-	-	8	14
Coordination	P	3	6	2	4	-	6	2	-	-	27	10	60
	E	-	-	-	-	-	-	-	-	-	-	-	-
Proj. Mgt. & Mgt. Specialist	I	-	9	14	8	-	-	2	-	-	-	-	33
	P	-	-	5	-	-	-	-	-	-	-	55	60
	E	-	-	12	-	-	-	-	-	-	-	-	12
Financial Analysis	I	-	3	12	-	-	-	-	-	-	-	-	15
	P	-	12	29	12	3	4	-	-	-	-	-	60
	E	-	-	-	-	-	-	-	-	-	-	-	-
Systems Analyst HIS	I	-	2	-	-	-	8	-	-	-	-	-	10
	P	-	6	-	4	-	48	2	-	-	-	-	60
	E	-	-	-	-	-	-	-	-	-	-	-	-
Communications	I	-	-	-	-	-	-	-	-	-	-	-	-
	P	-	12	8	8	30	-	2	-	-	-	-	60
	E	-	-	-	-	12	-	-	-	-	-	-	12
Training Education	I	-	3/3	-	10/10	-/15	-	2/2	-	-	-	-	15/30
	P	-	6	6	18	-	-	-	-	-	-	-	30
	E	-	-	-	24	-	-	-	-	-	-	-	24
Technical Information	I	-	6	-	4	-	-	20	-	-	-	-	30
	P	-	-	-	4	-	-	26	-	-	-	-	30
	E	-	-	-	-	-	-	-	-	-	-	-	-
Logistics	I	-	-	-	-	-	-	-	-	-	-	-	-
	P	-	12	6	-	-	3	-	6	3	-	-	30
	E	-	-	-	-	-	-	-	6	15	-	-	21
Management & Planning	I	-	-	-	-	-	-	-	-	-	-	-	-
	P	3	9	25	4	4	6	4	-	-	-	5	60
	E	-	-	12	-	-	-	-	-	-	-	-	12
Research	I	-	-	-	-	-	-	-	-	-	30	-	30
	P	-	-	-	-	-	-	-	-	-	114	-	114
	E	-	-	-	-	-	-	-	-	-	-	-	-
Administration	I	-	-	-	-	-	-	-	-	-	-	-	-
	P	-	-	-	-	-	-	-	-	-	-	60	60
	E	-	-	-	-	-	-	-	-	-	-	-	-
Total Effort		9	92	131	110	64	75	62	12	18	171	138	882/882

I = INCAP Supporting Staff - P = PROJECT Core Staff - E = Central American Short Term Consultants

ANNEX 1.7-C

SUMMARY
ECONOMIC ANALYSIS

I. Application of Standard Benefit Cost Criteria to Project

A. Application of Criteria

For most development projects economic evaluation involves the application of standard benefit-cost methods. The streams of adjusted project costs and benefits over time are compared by calculation of the present value of net benefits or the internal rate of return.

1. Capacity Building, Rather than Direct Intervention

Ideally, one or both of these methods would be applied to the economic analysis of this project. However, such analyses are at least partly inappropriate here for two reasons. First, the project is aimed at improving the capacity of regional and national institutions to use ORT, growth monitoring, and appropriate related feeding practices ("the package") rather than financing specific interventions in these areas. Hence, the economic benefits from project activities will be indirect and will accrue only after interventions stimulated by the increased capacity to use the package are undertaken. The costs of this project should be considered as overhead costs to the intervention programs. However, the timing and scope of such interventions are difficult to define at present. Thus, only hypothetical cost and benefit streams can be calculated.

2. Calculating Benefits of Better Health

Secondly, the theory of benefit-cost analysis is difficult to apply to some important aspects of health-sector interventions. Interventions usually have fairly well-defined costs, but the benefits arise indirectly from averting cases of illness. When illnesses are averted the savings from costs of treatment avoided usually can be quantified, but the pure-utility values of reduced morbidity and mortality and the value of improved performance in school or on the job are nearly impossible to estimate. While it is true that full-blown benefit-cost analysis is not possible, a limited analysis of quantifiable benefits may be done and the non-quantifiable benefits can be described. This allows policy choices to be made by weighing a combination of quantitative and qualitative benefits against costs.

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B. Impacts of the Package of Interventions

The package of interventions to be promoted by this project will produce the following impacts: reduction in infant morbidity and mortality and reduction in severe malnutrition in young children. These impacts will produce quantifiable benefits in the form of costs of treatment avoided. The costs of treatment include hospitalizations and the use of intravenous (IV) solutions for the treatment of severe dehydration from diarrhea and rehabilitation of severe cases of malnutrition. In addition, other diseases will be less severe in better-nourished children, so hospitalizations and costs of treatment of other diseases will be avoided as well.

C. Analyses to be Done

A first approximation of the benefits and costs of this project and the resulting intervention projects is done by making illustrative calculations. In addition, cost-effectiveness calculations are made with regard to (1) the choice of making this project a regional capacity-building effort, rather than a set of bilateral efforts and (2) the package of interventions chosen versus alternatives.

II. Illustrative Calculations of Benefits and Costs of Interventions Using the Project Package

To make a first approximation of the benefits and costs of this project a set of illustrative calculations for an intervention program using the package in Guatemala in 1985 is made. Which benefits may be quantified in money terms and which may not are discussed. Where benefits may not be quantified, impacts are estimated. The overhead cost of this capacity-building project is charged against the intervention program.

A. Non-Quantifiable Benefits

The non-quantifiable benefits of the program include the pure-utility gain from averting deaths from and lessening the severity of diarrhea, malnutrition, and the conditions aggravated by them. There are possible productivity gains from the postponing of young children's deaths and from the improvement in future school and work performances on well-nourished children. Since the benefits from these impacts cannot be quantified in money terms, they can only be described as impacts.

B. Quantifiable Benefits

The benefits from the impacts that, in principle, are quantifiable in money terms are the avoided costs of treatment of malnutrition, diarrhea, and other conditions. Severe malnutrition is treated by hospitalization. Severe and moderate dehydration from diarrhea often is treated by intravenous rehydration in a hospital. Moderate diarrhea is frequently treated at home using "diarrhea-reducing" medicines purchased at pharmacies. Many cases of other diseases that are made more severe by the presence of malnutrition or weakness due to diarrhea also result in hospitalization and treatment at home with purchased medicines.

1. Treatment for malnutrition

The Patulul Project (H.L. Delgado, et al., "On the Evaluation of a Primary Health Care System: the Patulul Project," INCAP, 1980) found an adjusted decrease in severe and moderate malnutrition of 21 percent. Wilcox, et al., ("Making Primary Health Care Nutrition Work," International Nutrition Planners Forum, 1984) found an average decline of 33 percent in seven successful ORT projects. The 1979/80 National Nutritional Survey estimated retardation of less than 75 percent of normal weight for age at 29.5 percent of children 0-5 in Guatemala. This malnutrition rate is equivalent to 373,000 children in 1985. Reduction of 21 to 33 percent in this rate would save 78,000 to 123,000 cases of malnutrition. No information is available on the proportion of cases hospitalized, so cost savings cannot be estimated.

2. Improved treatment of diarrheal disease

The rehydration of moderate and severe cases of diarrhea in hospitals takes 12 to 24 hours (information for this section was provided by Dr. Jose Maria Reyna Barrios, Hospital Nacional Huehuetenango). The cost of intravenous solution (IV) per case is 4.95 Quetzales. The cost of ORS per treatment of a moderate case of diarrhea is 0.21 Q, per severe case 0.34 Q. An estimate of the hospital treatment cost savings from replacing IV by ORS in Guatemala is 220,429 Q. per year.

3. Home treatment of diarrhea

ORS will replace some of the medicine purchased by the parents of sick children to treat diarrhea. The SINAPS project (INCAP, "SINAPS Final Report," 1982) found that pharmacy purchases of drugs for the treatment of diarrhea declined from 67 to 46 percent of cases with the introduction of ORS. Assuming a cost of 1.00 Q. per treatment purchases and 1.5 million cases per year in Guatemala, a gross savings in treatment costs of 315,000 Q. would be realized.

4. Treatment of other diseases

For all other diseases that have their severity reduced by the reduction in malnutrition and diarrhea, there would be a savings in hospital costs of 128.44 Q. per admission avoided (MOH statistics). If the fraction of hospital admission for other conditions avoided by the package is 1 percent, the savings to Guatemala in hospital costs would be 352 admissions, or 45,211 Q., plus savings in medicines. No figure is available for the cost of medicines per pediatric admission.

5. Treatment of diarrheal disease

For the purpose of this illustration it is assumed that the pre-intervention incidence of severe and moderate diarrhea is 1.25 episodes per year per child aged 0-5. SINAPS found that 20 percent of diarrhea cases resulted in health-facility visits before ORT introduction; 30 percent of those visits are assumed to require hospitalization. Introduction of ORT reduces by 50 percent both health-facility visits (SINAPS) and hospitalizations (WHO, "Manual for Assessing the Cost-Effectiveness of ORT, 1984). The national savings to be expected from reduced hospitalizations is 800,553 Q. per year.

C. Summary of Costs and Benefits

A summary of the results of the attempt to quantify the benefits of a program using the package of interventions in Guatemala is shown in Table S.1. Two impact measurements are shown: averted deaths from diarrheal disease and averted cases of morbidity. Cost-savings from reductions in hospitalizations and treatment of diarrhea amount to \$1.3 million. The total cost of the program is \$3.97 million. It is made up of the variable costs of an ORT program (\$2.89 per child aged 0-5 years covered, D.S. Shepard, "Projected Costs of a Worldwide Program Using Oral Rehydration Therapy," Harvard School of Public Health, 1984), \$3.65 million and the amortized, distributed overhead cost of the regional project, \$320,000. Total costs exceed measured benefits by \$2.6 million. The cost, net of measured cost savings, per life saved is \$498, per case of malnutrition averted it is \$21-34. For the project to be accepted as economic, the judgement must be made that the unmeasured and non-quantified benefits of lives saved and/or cases of malnutrition avoided are worth \$498 and \$21-34, respectively.

III. Cost Effectiveness of the Intervention Package

A. Introduction

It has been shown by the benefit-cost analysis that the package of interventions may be presumed to produced impacts that have benefits greater

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than costs. The next step in the analysis is to show that the package achieves the impacts at a lower cost than alternative interventions.

Cost-effectiveness (C/E) analysis allows a comparison of cost of various ways of accomplishing the same impact (or effectiveness). To do C/E, a common measure of the desired impact must be chosen, then the costs of technically-feasible ways of achieving that impact must be found.

B. Measure of Effectiveness

The best unit of measurement of effectiveness for the package of interventions is deaths averted. It is through reductions in malnutrition and in morbidity from diarrhea and other related conditions that mortality will decline. Hence, a decline in mortality would only come about if malnutrition and morbidity were reduced. Thus, mortality can serve as a proxy for all three goals in measuring effectiveness.

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TABLE I-8.1
Impacts, Measurable Benefits, and Costs of
a National ORT Program in Guatemala in 1985

1.	Averted deaths from:		
	1.1 Diarrheal disease	5,287	
	1.2 Malnutrition		No data
	1.3 Other causes		No data
2.	Averted morbidity from:		
	2.1 Diarrheal disease		No change - Severity lessened
	2.2 Malnutrition (75% of weight for age):	78,000-123,000	
	2.3 Other causes:		No data
3.	Reduction in hospitalizations and health-facility visits for:		
	3.1 Diarrheal disease:		
	3.11 Hospitalizations:		
	3.111 Days	47,370	
	3.112 Costs	800,553 Q.	
	3.12 Health-facility visits	158,000	
	3.2 Malnutrition:		No data
	3.3 Other Causes:		
	3.31 Hypothetical reduction of 1 percent of pediatric hospitalizations:		
	3.311 Days	2,675	
	3.312 Costs	45,211	
4.	Reduction in medicines purchased for:		

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4.1	Diarrheal disease:		
4.11	At hospitals		
4.111	IV solutions	47,370	
4.112	Costs	220,429	Q.
4.12	At households:		
4.121	Treatments	315,000	
4.122	Costs	315,000	Q.
4.2	Malnutrition		No data
4.3	Other causes		No data
5.	Total of measured cost savings (3.112 = 4.112 + 4.122)	1,335,962	Q
6.	Cost of a National ORT Program:		
6.1	Variable cost (\$2.89 per child 0-5; 1.00Q = \$1.00):	3,650,070	Q
6.2	Overhead cost (\$8.8 million cost of regional project amortized over ten years, weighed by country population):	320,000	Q
6.3	Total cost:	3,970,070	Q
7.	Cost net of measured cost savings (6.3 - 5):	2,634,108	Q
7.1	Net cost per averted diarrheal death (7:1.1)	498	Q
7.2	Net cost per averted case of malnutrition (7:2.2)	21-34	Q

C. Elements of the Package

It is difficult to make a quantitative argument that the package of interventions is more or less cost-effective than, say ORT, alone, since there are few cost and impact data for the individual components. A review of 21 primary health care and nutrition projects (Wilcox, et al., 1984) finds that ORT, growth monitoring, health education, and nutritional counseling are part of a larger package, including immunizations and family planning, which shows consistently positive results. Similar conclusions are reached by a study of interventions to complement ORT in the reduction of diarrhea morbidity and mortality (WHO, "Interventions for Reducing Diarrhea Morbidity and Mortality," 1984). It classified promotion of breast feeding (nutrition education), water supply and sanitation, and personal and domestic hygiene (health education) along with measles immunizations as "clearly effective and known to be feasible and affordable." Growth charts are classified in the category of interventions for which field research is needed to fill in gaps in knowledge. From this information it can be concluded that the elements of the package (with the possible exception of growth monitoring) are regarded as complementary.

It should be noted that the project will promote the package, but it also will help the countries to tailor the package to meet individual needs and will carry out operational research on the elements of the package. That is, cost-effectiveness analysis will be part of the aid to be given by the project to countries designing national programs.

D. Costs of the Package

Shepard reviews the costs of fifteen ORT diarrheal disease control programs (Shepard, 1984). He says the order of magnitude of the annual cost per child covered is from one to five dollars, with a simple average of \$2.89. The cost per death averted ranges from \$150 to \$667, with an average of \$445. Shepard measures the gross cost of ORT programs, without adjustment for cost savings, as was done in Section II. Therefore, the C/E comparisons are made on the basis of gross costs per death averted.

Rough calculations of the cost-effectiveness of hypothetical diarrheal disease control programs using ORT in the CA/P countries (except Costa Rica, which already has a well-functioning ORT program) are shown in Table I.8.2. The calculations assume that two-thirds of diarrheal deaths and one-third of severe growth retardation would be eliminated by the ORT programs. The baseline (before intervention) diarrheal death rates (on which the calculations are based) are of uneven quality. Those from Belize and Panama are believed to reflect well the true situation. Those for Guatemala and El Salvador, probably understate the number of diarrheal deaths. Official

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IMR, diarrheal death rates and severe malnutrition rates for Honduras are known to be so unreliable that it was deemed meaningless to perform similar calculations for Honduras. The costs used (\$2.89 per child covered) are based on the simple average found by Shepard. The calculations show a low cost of death averted of \$690 in Guatemala and a high of \$2060 in Belize. If it is assumed that diarrheal death rates for Honduras are similar to Guatemala's initial diarrheal death rates (which is likely), its cost per death averted would be \$714. The average cost, weighted by population, for the region is \$835. The overhead cost of the regional project per death averted over a twenty-year period, using a 10 percent rate of discount, is \$84.

The costs per death averted found for CA/P are all above the range found by Shepard. This is explained mainly by the lower initial death rates for diarrheal disease (88 per 10,000) in the CA/P region, relative to those in the countries included in Shepard's analysis (150-249 per 10,000 in Egypt, Zaire, rural Honduras, and one hypothetical case). In addition, Shepard's program costs include the total of all resources required for ORT activities. In Egypt, where existing personnel, vehicles, and facilities are used by the ORT program, incremental costs are 30 percent of total resource costs. All of the CA/P countries have some kind of PHC system to which the ORT programs will be attached to make the actual cost of the programs incremental costs.

E. Cost-Effectiveness

The C/E figures for ORT programs in Table I.8.2 may be compared to C/Es of alternative interventions. The WHO study of sixteen interventions calculated the following costs per death averted on a world wide basis:

measles immunization	\$490-980
rotavirus immunizations	\$1,300
water supply and sanitation*	\$9,000-27,000
supplementary feeding programs*	\$36,000

* Has impact beyond averted deaths and illness.

The calculations made in Table I.8.2 indicate that ORT programs in Panama, El Salvador, and Guatemala would be equal or superior to all of the interventions for which C/E was calculated, except measles immunizations. All of the CA/P countries already have expanded immunization programs and are receiving substantial assistance with them through PAHO and other donors. Diarrhea and respiratory diseases rather than measles are now the principal causes of infant and young child mortality in the region. It is therefore unlikely that additional investment in immunization programs, over and above those already being made, would be a cost effective way of further reducing infant mortality in CA/P.

The C/Es for Belize is substantially above the other countries, but still compares favorably with the cost of alternative interventions.

As for the remaining twelve interventions studies by WHO, one (cholera immunizations) is inappropriate to the region; three are classified as ineffective or excessively costly; the two that are grouped with measles for C/E (promotion of breast feeding and personal and domestic hygiene) are already a part of the project package; and the remaining six are classified as being of uncertain effectiveness, requiring more research. These latter six (prevention of low birthweight, improving weaning practices, use of growth charts, food hygiene, control of zoonoses, and epidemic control) could be topics for the research portion of the project.

Thus, it may be concluded that the package of interventions is the least-cost method of reducing mortality for most of the region among children aged 0-5 years especially if interventions are targeted on high incidence areas. By inference, the package is also cost effective in reducing morbidity and malnutrition.

IV. Cost-Effectiveness of the INCAP Regional Approach

A. Introduction

This project will build the capacity of INCAP to aid the individual countries (Guatemala, Honduras, Panama, Belize, and El Salvador) to establish programs using the package of interventions. It will build INCAP's capacity by providing U.S. technical assistance, support for INCAP personnel, and through financial support for training, research, and technical information dissemination. Two alternatives to this approach are considered: a regional project which would use strictly U.S. technical assistance (the "Regional American" approach) and a set of bilateral projects (the "Bilateral Only" approach). For the purpose of this cost-effectiveness analysis, the technical soundness of the project and its alternatives is assumed. However, the Bilateral Only alternative is considered to be unfeasible for the countries of Panama and Belize. Its costs are calculated for three countries only.

TABLE I.8.2

CALCULATIONS OF COST EFFECTIVENESS OF INTERVENTION

	IMR/1000		1-4 MR/1000		Severe Growth Retardation (%)		Deaths Averted/1000		Severe Growth Retardation Averted.	
	<u>a/</u> Before*	<u>b/</u> After	<u>a/</u> Before*	<u>b/</u> After	<u>c/</u> Before*	<u>c/</u> After	<u>No.</u>	<u>d/</u> Cost	<u>No.</u>	<u>d/</u> Cost
Belize	27	21.9	2.2	1.9	N/A	-	1.4	2060	-	-
El Salvador	85	76.5	6.9	5.7	10.4	7.0	2.9	999	3.4	850
Guatemala	86	77.0	12.4	9.7	29.5	19.8	4.2	690	9.7	298
Panama	21	12.8	2.1	1.6	11.6	7.8	2.3	1256	3.8	761
T O T A L							3.5	835	6.6	438

a/ "Before" data from Project Identification Document.

b/ Two thirds of diarrheal deaths averted.

c/ 33 percent decline assumed (Wilcox, 1984)

d/ Cost per 1000 children 0-5: \$2890 (Shepard, 1984)

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B. Costs of the Three Alternatives

The costs of the three alternatives are presented in Table I.8.3. Two sets of comparison are made: between the Regional approaches and the Bilateral Only approach and then, between the Regional American and the Regional INCAP approach.

1. Regional versus Bilateral

a. Personnel

At least one long-term manager and three long-term technical people would be needed in each country under the Bilateral Only alternative for the life of the project. The Regional alternatives economize on managerial personnel by avoiding duplication, provide technical personnel with a greater variety of skills, and make more extensive use of short-term personnel to solve specific problems.

b. Training, research, and technical information

The regional approaches are expected to be able to benefit from having to plan activities a single time and to be able to economize based on learning and experience. For these items a 25 percent cost premium was assigned to the Bilateral Only approach. In other instances where activities must be repeated in each of the three countries the cost to the Bilateral Only approach is triple that of the Regional projects.

2. INCAP versus Regional American

a. Personnel

The major difference between these alternatives is in the mix of U.S. versus Central American management and technical personnel. The INCAP alternative replaces long-term U.S. technical personnel with both long- and short-term Central American people.

b. Training, research, and technical information

There is no difference between the two approaches. The more strongly Central American mix of personnel under the INCAP approach is considered a perfect substitute for the more strongly U.S. mix under the Regional American approach.

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C. Effectiveness

The Bilateral Only approach covers only three countries (2,753,300 children covered in the 0-5 years target age group in 1985). The Regional approaches cover five countries (3,091,800 target children). All three approaches are equally effective in carrying out training, research, and technical information dissemination. However, a slight edge in effectiveness must be conceded to the INCAP alternative since its Central American managerial and technical personnel will remain in place after the end of the project, whereas the U.S. personnel would depart.

D. Cost Effectiveness

Cost effectiveness of the three alternatives is calculated by dividing the cost of each by the number of children 0-5 covered:

	<u>Cost Per Child Covered</u>
Bilateral Only	\$5.01
Regional American	\$4.07
Regional INCAP	\$2.93

The Regional INCAP alternative accomplishes the project goals at the least cost.

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TABLE I.8.3

Costs of INCAP Regional Project and Alternatives

Category	Bilateral Only (a)		Regional American (b)		Regional INCAP (b)	
	Number	Cost	Number	Cost	Number	Cost
A. Management and evaluation						
a. Personnel						
i. U.S. personnel						
a) Long-term (pers.yrs.)						
i) management	15	\$1,875,000	10	\$1,250,000	10	\$1,250,000
ii) technical	30	\$3,750,000	30	\$3,750,000	0	\$0
b) Short-term (pers. mo.)	30	\$420,000	50	\$700,000	30	\$420,000
ii. Central American personnel						
a) Long-term (pers. yrs.)						
i) management	0	\$0	0	\$0	10	\$300,000
ii) technical	15	\$450,000	25	\$750,000	30	\$900,000
b) Short-term (pers.mo.)	30	\$90,000	0	\$180,000	80	\$240,000
c) Support personnel		\$90,000		\$90,000		\$90,000
SUB-TOTAL a.:		\$6,675,000		\$6,720,000		\$3,200,000
b. Material and Equipment		\$65,000		\$65,000		\$65,000
c. Process and Impact Evaluation (c)		\$250,000		\$200,000		\$200,000
SUB-TOTAL A.:		\$6,990,000		\$6,985,000		\$3,465,000
B. Training and Mass Communications						
a. Regional Seminar 1984 (c)		\$106,250		\$85,000		\$85,000
b. Regional Seminar 1987 (c)		\$112,500		\$90,000		\$90,000
c. Regional Seminar 1989 (c)		\$118,750		\$95,000		\$95,000
d. Country Document Preparation		\$48,000		\$48,000		\$48,000
e. Regional Courses (c)		\$500,000		\$400,000		\$400,000
f. National Courses		\$150,000		\$150,000		\$150,000
g. Travel and Per Diem (c)		\$93,750		\$75,000		\$75,000
h. Materials for Seminars and Courses (c)		\$125,000		\$100,000		\$100,000
i. National Courses		\$60,000		\$60,000		\$60,000
j. Technical Meetings		\$175,000		\$175,000		\$175,000
k. Training to Specific Groups		\$100,000		\$100,000		\$100,000
SUB-TOTAL B.:		\$1,722,500		\$1,378,000		\$1,378,000

TABLE I.8.3
(Continued)

Costs of INCAP Regional Project and Alternatives

Category	Bilateral Only (a)		Regional American (b)		Regional INCAP (b)	
	Number	Cost	Number	Cost	Number	Cost
C. Technical Information Dissemination (c)		\$218,750		\$175,000		\$175,000
SUB-TOTAL C.:		\$218,750		\$175,000		\$175,000
D. Research Component						
a. Anthropological (c)		\$335,123		\$268,098		\$268,098
b. Dietary Treatment of Hospitalized (d)		\$155,286		\$51,762		\$51,762
c. Etiology of Chronic Diarrhea (c)		\$345,749		\$276,599		\$276,599
d. Nutritional Rehabilitation (c)		\$173,100		\$138,480		\$138,480
e. Impact on Mortality (c)		\$339,053		\$271,242		\$271,242
f. LBW and Neonatal Mort.Risks(c)		\$354,709		\$283,767		\$283,767
g. Validity of Anthropometric Meas.(d)		\$226,935		\$75,645		\$75,645
h. Operational Research (c)		\$150,000		\$120,000		\$120,000
SUB-TOTAL D.:		\$2,079,954		\$1,485,593		\$1,485,593
E. Technical Assistance (c)		\$1,250,000		\$1,000,000		\$1,000,000
SUB-TOTAL E.:		\$1,250,000		\$1,000,000		\$1,000,000
F. Common Services		\$1,547,698		\$1,547,698		\$1,547,698
SUB-TOTAL F.:		\$1,547,698		\$1,547,698		\$1,547,698
GRAND TOTAL:		\$13,808,902		\$12,571,291		\$9,051,291
Cost per child covered:		\$5.61		\$4.07		\$2.93

NOTES: (a) Will cover only three countries
 (b) Will cover five countries.
 (c) Savings of 25 percent to regional programs because of no duplication of planning and experience gain.
 (d) Must be duplicated in each of three countries under bilateral only option.

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DETAILED BUDGET

SUMMARY

Management and Evaluation	\$1,298,250
Training	1,403,000
Technical Information Dissemination	216,500
Research	916,232
Operation and Evaluation Studies	719,433
Technical Assistance	<u>1,000,000</u>
Sub-Total (Direct)	\$5,553,415
Overhead (30%)	<u>1,666,025</u>
U.S. Technical Assistance	<u>780,560</u>
 T O T A L	 <u>\$8,000,000</u>

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A. MANAGEMENT AND EVALUATION

1. Personnel

General Coordinator:
Dr. Hernan Delgado -
No salary requested.

Health Research Planner
T.A. Coordinator \$160,500

Communications - Training
Coordinator 160,500

Project Manager -
Management Generalist 160,500

Financial Analyst 130,500

Logistics (half-time) 65,250

Education/Information Dissemination 130,500

System Analyst-Health Information
System 130,500

Bilingual Secretaries (2) 90,000

Sub-Total \$1,028,250

2. Material and Equipment

Personnel Computer and Word
Processor (2) Hewlett Packard \$ 20,000

Office Supplies and office
equipment; long distance calls,
reproduction of materials 50,000

Sub-Total: \$ 70,000

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3. Process and Impact Evaluation

Cross sectional surveys at the beginning and at the end of the project (in all countries) \$200,000

Sub-Total: \$ 200,000

T O T A L: \$1,298,250

B. TRAINING

1. First Seminar

Eight participants per country/
Ten participants from INCAP
(350+(85 X 7)) X 64 - Participants \$ 60,480
(350+(85 X 10)) X 10 - INCAP 12,000

Other expenditures related to the Seminar: Local transportation, rent of convention center, etc. 5,000

Reproduction of bibliographic materials and documents 4,000

Long distance calls and xerox 1,000

Publication of the proceedings of the Seminar 2,520

Sub-Total: \$ 85,000

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2. Second Seminar

Eight participants per country/
Ten participants from INCAP
(400 + (85 X 7)) X 64 - Par-
ticipants \$ 63,680
(400 + (85 X 10)) X 10 - INCAP 12,500

Other expenditures related to
the Seminar: Local transpor-
tation, rent of convention
center, etc. 5,500

Reproduction of bibliographic
materials and documents 4,400

Long distance calls and xerox 1,100

Publication of the proceedings
of the Seminar 2,820

Sub-Total: \$ 90,000

3. Third Seminar

Eight participants per country/
Ten participants from INCAP
(450 + (85 X 7)) X 64 par-
ticipants \$ 66,880
(450 + (85 X 10)) X 10 INCAP 13,000

Other expenditures related to
the Seminar: Local transportation
rent of convention center, etc. 6,000

Reproduction of bibliographic
materials and documents 5,000

Long distance calls and xerox 1,200

Publication of the proceedings
of the Seminar 2,920

Sub-Total: \$ 95,000

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4. Funds to be provided to national task forces for the preparation of country documents:
US\$4,000 first document X6 countries \$ 24,000
US\$2,000 second document X6 countries 12,000

US\$2,000 third document X6 countries 12,000

Sub-Total: 48,000
5. Regional Courses - Total = 16

One week - 24 participants
Annual regional workshops (4);
Management (4); Private
Sector (1); Case Management
(1); Mass Communication (1);
Pharmacies (1); Others (4).

Travel and per diem 350 +
(85 X 7) 24 = 22,680 per course
(plus 10% annual increments)

Materials = 2,500 per course \$465,000

Sub-Total: \$ 465,000
6. National Courses - Total: 5

Per country - National Seminar
plus four annual workshops.
One week - 30 participants
per annual course.

Funded by INCAP 100% (US\$5,000
per course) \$150,000

Materials: US\$2,000 per course 60,000

Sub-Total: \$ 210,000

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7. Travel and Per Diem for Teachers

Regional Courses and National Courses and Seminars (Total number of courses: 46); travel and per diem = 1,000 person/week \$ 75,000

Sub-Total: \$ 75,000

8. National Courses

Funds to support national courses (US\$10,000 per country per five years) (partially funded by INCAP) \$ 60,000

Sub-Total: \$ 60,000

9. Technical meetings, work groups and task force meetings in service of research, technical assistance and educational activities.

Anthropology - 7 meetings/1 week/7 participants \$ 45,000

Risk factors low birthweight-4 meetings/1 week/14 participants 55,000

Dietary treatment and rehabilitation of children with diarrhea - 2 meetings/1 week/12 participants 10,000

Sentinel Areas - 5 meetings/1 week/10 participants 45,000

Other meetings \$20,000

Sub-Total: \$ 175,000

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10. Training to specific groups - university groups, physicians, training of nurses, resident exchange, pharmacies - travel per diem and materials	<u>\$100,000</u>	
Sub-Total:		<u>\$ 100,000</u>
TOTAL:		<u>\$1,403,000</u>

C. Research

1. Risk Factors of Low Birthweight and Neonatal Mortality and Validity of Maternal Anthro- pometric Measurements		
Personnel	\$162,251	
Local and international travel	39,600	
Statistical services	55,000	
Operation costs	14,040	
Supplies	18,750	
Equipment	<u>5,000</u>	
Sub-Total:		\$ 294,641
2. Nutritional Rehabilitation of Children with Diarrhea; Hospital and Community Studies		
Personnel	\$ 82,084	
Local and international travel	3,325	
Operation costs	1,500	
Supplies	48,283	
Equipment	\$ 800	
Sub-Total:		\$ 135,992

3. Etiology of Chronic Diarrhea

Personnel	\$ 138,069
Local Travel	43,030
Statistical services	30,000
Supplies	114,000
Equipment	<u>20,000</u>

\$ 345,099

4. Multicenter Studies

Risk factors of low birthweight and neonatal mortality	\$ 90,500
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Nutritional rehabilitation of children with diarrhea	<u>50,000</u>
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Sub-Total: \$ 140,500

TOTAL: \$ 916,232

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D. OPERATIONAL AND EVALUATION RESEARCH

1. Anthropological Studies

Personnel	\$ 46,088
Advisors	3,600
International travel	9,950
Contractual services with countries	194,460
Operation costs	3,000
Supplies	<u>11,000</u>

Sub-Total:

\$ 268,098

2. Impact of Programs on
Morbidity and Mortality -
Sentinel Areas

Personnel	\$ 91,535
Local and international travel	40,550
Contractual services (with countries)	90,750
Statistical services	25,000
Operation costs	6,000
Supplies	10,000
Equipment	<u>7,500</u>

Sub-Total:

\$ 271,335

3. Operational Research

Funds to support operational
research at the countries level.
Max. support = US\$5,000 per
research

\$ 180,000

Sub-Total:

\$ 180,000

TOTAL:

\$ 719,433

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E. TECHNICAL INFORMATION DISSEMINATION

Production of technical-scientific
material based on specific research \$ 41,500

Production of newsletter, bulletins
and dissemination of information
(US\$35,000 per year) 175,000

Sub-Total: \$ 216,500

TOTAL: \$ 216,500

F. TECHNICAL ASSISTANCE

Travel and per diem \$ 600,000

INCAP consultants and expanded
staff training 200,000

Central American short-term
advisors (salary only) 200,000

Sub-Total: \$1,000,000

TOTAL: \$1,000,000

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PROJECT IMPLEMENTATION PLAN

- _____ indicates a continuing, major emphasis.
 o indicates a single event or an event which occurs at specific times.
 indicates an activity which occurs or may occur at times which cannot be specified at this point.

ACTIVITY	Y E A R S					
	84	85	86	87	88	89
A. <u>Phase I: Planning and Promotion (Year 1)</u> (By implementation schedule)						
<u>Early: 0-3 months</u>						
-Sign project agreement						o
-Issue Implementation Letter #1 (ROCAP)						o
-Develop detailed regional planning and promotion plan (Phase I) and submit to ROCAP for approval						o
-Contract project personnel and technical advisors.						_____
-Initiate trips to participating countries for project promotion, organization, and planning						_____
-Meetings with regional collaborating experts, representatives of collaborating institutions and principal donors						o
-Develop technical assistance data bank						o
-Program management training course for expanded INCAP Staff						o

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ACTIVITY	YEARS					
	84	85	86	87	88	89
-Peer group reviews of detailed study protocols: anthropology, dietary treatment, program impacts on morbidity and mortality						o
Anthropological studies workshop						o
-Implementation of baseline anthropological community and health service provider studies.					—	
-Develop 1st annual detailed regional technical dissemination plan						o
-Development of planning and assessment guidelines					—	
-Organization of country task forces						o
-Establish regional clearing-house on ORT, GM and AFP						o
<u>Mid: 3-9 Months</u>						
-Training of country task forces in use of strategy formulation guidelines and development of plan for carrying out assessments						o
-Management Workshop - Training in implementation of management assessment instruments						o

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ACTIVITY	Years					
	84	85	86	87	88	89
-Initiate strategy formulation assessments and provision of related technical assistance						o
-Initiate dietary treatment and nutrition rehabilitation research						_____
-Meeting of multicenter collaborators for Program Impacts on morbidity and mortality studies						o
-Initiate multicenter studies on program impacts on morbidity and mortality						o
-Peer group review of research protocols: Risk Factors for LBW and Epidemiology of chronic diarrheal diseases/link to nutritional status						o
-Initial results from anthropological community and health service provider studies						o
-Preparation of country documents and draft national strategies						_____
-Initiate of Risk Factors for LBW and Epidemiology of chronic diarrheal disease research						_____
<u>Late: 9-12 months</u>						
-1st Regional Seminar						o
-Refinement of National Strategies						_____

ACTIVITY	Years					
	84	85	86	87	88	89
-Develop 1st detailed regional training, education and mass communications plan						—
-Develop 1st detailed regional operations research plan						—
-Develop 1st detailed regional technical assistance plan						—
-Final results from initial anthropological studies						—
-National Seminars						—

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ACTIVITY	YEARS					
	84	85	86	87	88	89
B. <u>Phase 2: Implementation</u>						
<u>(by type of activity)</u>						
<u>Regional Meetings</u>						
-Second Regional Seminar					o	
<u>Regional Training: Courses/</u>						
<u>Workshops/Workgroups</u>						
-Annual Regional Workshops			o	o	o	o
-Senior Managers Courses		o	o	o	o	
-ORT/PEM Workshop for Key Medical Opinion Healers		o				
-Workshop on PVO participation in ORT/PEM			o			
-Workshop: design, production and use of instructional materials and techniques			o			
-Workshop: organization and management of mass communications programs in health			o			
-Workshop: review and revision of curricula content of university level education for health person- nel				o		
-Workshop selection of techniques and methodologies to evaluate educational skills of health providers					o	
-Others (2)						o
<u>National Training: Courses/</u>						
<u>Workshops/Workgroups</u>						
-Annual national workshops			o	o	o	
-National Courses or workshops (5-7/country on management, education and training issues)					

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ACTIVITY	YEARS					
	84	85	86	87	88	89
<u>Dissemination of Technical Information</u>						
-Newsletters (4/year for 4 years)						
-Technical documents (on demand)						
-Special reports and audio visuals						
-Materials and audiovisuals on research results						
-Guidelines for development of national information clearinghouse						
-Resource guides on available educational and training materials						
-Bibliographic Listings						
-Program implementation guidelines						
-Guidelines on technical content for educational and case management packages						
<u>Development of Educational Materials</u>						
-Promotion/training						
-Mass communications						
-Information systems						
-Management/logistics						
<u>Technical Assistance</u>						
<u>Operations Research and Evaluation Studies</u>						
-Anthropological community and provider studies						
-Multicenter Dietary Treatment Studies						
-Multicenter risk factor intervention studies						
-Program Impacts on Morbidity and Mortality						
-Small Operations Research Projects						

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ACTIVITY	YEARS					
	84	85	86	87	88	89
<u>Investigation</u>						
-Investigation on Dietary Treatment/Nutrition Rehabilitation of Children with Diarrhea						
-Meeting of collaborators for multicenter dietary treatment studies						
-Investigations on high risk factors for LBW and appropriate interventions						
-Meeting of collaborators for multicenter risk factor intervention studies						
-Investigation on Etiology of chronic diarrhea/malnutrition links						
<u>Project Administration, Evaluation and Reports</u>						
-Semi-Annual Work Plans and Budgets						
-Quarterly Reports						
-Annual Reports						
-Reports from Seminars, Workshops and Meetings						
-Research Reports						
-Project Evaluations						
-National Program Evaluation Activities						

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ACTIVITY	YEARS					
	84	85	86	87	88	89
C. <u>Phase III: Evaluation</u>						
<u>Regional Meetings</u>						
Final Regional Seminar						o
<u>Administration, Evaluation and Reports</u>						
Final Project Evaluation and Report						

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PROJECT TECHNICAL ASSISTANCE PLAN

A. General Plan

Requirements for outside technical assistance and consultants for the project will be covered through three different mechanisms:

a. A small (\$200,000) line item, which will be managed directly by INCAP, will provide funding for consultants and training to upgrade the skills of INCAP staff and affiliated Central American experts who will be providing technical assistance directly to the CA/P countries or who will be participating as collaborating principal investigators in research activities.^{1/}

b. An institutional contract with a U.S. firm will be managed by ROCAP and will provide one full time long term technical advisor and 8-10 months of high level U.S. short term consultants who will take part in project evaluations, peer group reviews and institutional technical assistance needs which cannot be covered under the AID/PRITECH project.

c. All U.S. technical assistance needed during the first six months of project implementation (until the contracting process for the U.S. Technical Assistance contract can be completed) and specialized technical assistance, not available in the region, which is needed to support country programs or the development of complementary bilateral USAID activities will be supplied through the AID/W PRITECH project.

^{1/} NOTE: INCAP's personnel regulations prevent the institute from paying more than \$2,600/month maximum salary and benefits for outside consultants. While this is usually sufficient to hire top level Central American consultants, it is often inadequate for experienced U.S. or international consultants.

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B. PRITECH-ROCAP/INCAP Project Collaboration

Support to Bilateral USAIDs:

Under the PRITECH project, approximately \$300,000 are targetted for support to Central America during the first three-four years of project implementation. This amounts to about 30 man-months of technical assistance. Approximately one third of these funds will be reserved for direct support to Central American USAIDs, for development of complementary bilateral ORT, growth monitoring and education activities and two thirds be used in direct support of activities under the Regional ORT, GM and Education Project. INCAP staff and the project's long term technical advisor will also be available to collaborate with CA/P USAIDs in the development of complementary bilateral activities. It is expected that, in most cases, joint INCAP/PRITECH teams can best serve bilateral USAID and host country project development needs.

Project and Host Country:

Approximately 20 man-months of technical assistance will be made available under the PRITECH project to support the regional project activities. In addition, a collaborative arrangement will be worked out between the INCAP and PRITECH clearinghouses along the lines of the highly successful collaborative relationship which has existed between APHA and INCAP in lactation promotion and maternal infant feeding over the past two years.

During the first six to eight months, PRITECH technical assistance will be needed in the development of country assessment guidelines, review of detailed study protocols and setting up a technical assistance resource data bank at INCAP. It is expected that after the first six to eight months, PRITECH support will be concentrated in the areas of national program management, logistics, commercial sales of ORS, mass communications and possible ORS production issues.

C. Proposed Detailed Technical Assistance Plan for First Year of Project Activities

January, February, March, 1985

- a. Financial management expert with experience in computerized accounting procedures to set up project financial accounting system at INCAP; 2 weeks, INCAP T.A. and training fund.

- b. Expert to set up technical assistance human resource data base at INCAP, 1 week, PRITECH.
- c. Two anthropologists to review final community and provider study plans and one to assist with training of country counterpart anthropologists to carry out community and provider studies, 5 weeks (2 trips of 1 week and 1 trip of 3 weeks), PRITECH.
- d. Experts to assist in development of country assessment guidelines:
 - ORS Production and Commercial retail sales, 7-10 days, PRITECH.
 - Training, Education and Mass communications, 2 weeks, PRITECH.
 - Financial assessments, 7-10 days, PRITECH.
 - Health Information Systems assessment, 1 week, PRITECH.
- e. Management training expert to develop training programs for INCAP project staff and Central American consultants. 1 week, PRITECH.
- f. ORT, GM and Ed. program management training course for INCAP project staff and core Central American consultants. 2-3 weeks, INCAP consultants and training fund.
- g. Two outside experts for peer group review of detailed plans for Dietary Treatment and Program Impacts on morbidity and mortality studies, 7-10 days each, PRITECH and INCAP consultants and training fund.

April - July, 1985

- a. Multiple experts to participate in joint T.A. teams to help countries in carrying out country program assessments.
 - 2 experts in program management, logistics and management information systems, 3 weeks, PRITECH.
 - Training, education and mass communications, 2 weeks, PRITECH.

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- Financial assessments, 2 weeks, PRITECH.
- Production and Commercial retail sales assessments, 12 weeks, multiple trips in CA/P, PRITECH.
- b. Five outside experts for peer group review of detailed plans for epidemiology of Chronic Diarrhea and LBW Risk Factor Studies, 2 epidemiologists, 1 microbiologist, 1 obstetrician/gynecologist, 1 MD, 1 week each, PRITECH and INCAP consultants and training fund.

August - December, 1985

- a. May require additional assistance with special assessments of country programs, PRITECH.
- b. 2 outside experts to participate in first regional seminar, one in mass communications and one in commercial sales, 1 week each, PRITECH.

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COMMODITIES LIST FOR ORT, GM AND ED. PROJECT

- 2 Personal computers and word processors
- 1 Direct steam autoclave
- 1 Digital infant scale
- 2 Sets of equipment for physical exams
 - Blood pressure cuff for adults
 - Blood pressure cuff for children
 - Stethoscope
 - Otoscope
 - Calipers skin fold
 - Adult scale
 - Infantometer
 - Portable scale for children
- 6 Portable tape recorders
- 6 Food scales

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TABLE 1
SOCIO-ECONOMIC STATISTICS IN CENTRAL AMERICA AND PANAMA
LABOR FORCE AND EMPLOYMENT INDICATORS AROUND 1980

Country	National self- perception of Rural Population %	Total Labor Force (thousand)	Employment: Proportion in				Unemployed %	Under- employed %
			Traditional Sector		Modern Sector			
			Traditional Rural %	Informal Urban %	Modern Rural %	Modern Urban %		
Costa Rica	54.2	770	22	14	32	32	5.9	7.5
El Salvador	55.6	1626	30	19	22	29	7.4	25.5
Guatemala	61.6	2193	34	22	29	15	3.2	31.4
Honduras	59.8	1021	37	15	23	25	14.3	27.4
Nicaragua	45.7	870	23	23	27	27	11.8	10.9
Panama	45.6	578	28	15	15	43	8.8	7.6

Source: Dinamica del Subempleo en America Latina. 1981. CEPAL.

TABLE 1. (Cont'd.)

SOCIO-ECONOMIC STATISTICS IN CENTRAL AMERICAN COUNTRIES AND PANAMA
ENVIRONMENTAL SANITATION

	Water Supply Piped Water		Sewage Disposal Systems	
	Urban Population % (1978)	Rural Population % (1978)	Urban Population % (1978)	Rural Population % (1978)
Costa Rica	98	61	43	86
El Salvador	61	30	48	26
Guatemala	41	14	40	17
Honduras	52	13	43	18
Nicaragua	--	11 (1973)	22 (1973)	--
Panama	95	64	98	80

Sources: Salud para Todos en el Año 2000. Estrategias, 1980. PAHO/WHO.

TABLE 1. (Cont'd.)
SOCIO ECONOMIC STATISTICS IN CENTRAL AMERICA AND PANAMA
GROSS DOMESTIC PRODUCT AND EDUCATIONAL LEVEL

Countries	Per capita gross domestic product (1980 US \$) and average growth rates (a)			Education (b)					
	1977	1980	Average annual increase % 1977 - 1980	Number enrolled in:		Adult Literacy rate (%)		1960	1975
				Primary school as percentage of age group 1960	1977	Secondary school as percentage of age group 1960	1977		
Costa Rica	1476.3	1527.0	1.1	96	112	21	29	84	90
El Salvador	797.0	680.9	-5.1	79	90	13	18	49	62
Guatemala	1147.6	1198.5	1.5	49	59	6	12	32	47
Honduras	599.1	639.0	2.2	61	91	6	10	45	57
Nicaragua	111.6	896.8	-7.1	62	80	7	13	51	57
Panama	1174.9	1917.6	2.6	97	110	29	42	73	78

Sources: (a) Inter American Development Bank (IDB), 1981.
(b) World Development Report. The World Bank, 1980,
and Wilkie, J. W. and Reich, P. (Eds.).
Statistical Abstracts of Latin America,
Los Angeles, U.C.L.A., 1977.

TABLE 2
DEMOGRAPHIC INDICATORS IN CENTRAL AMERICAN COUNTRIES AND PANAMA

<u>Country</u>	<u>Crude Birth Rate</u>	<u>Crude Death Rate</u>	<u>Population Growth Rate (%)</u>	<u>Infant Mortality Rate</u>	<u>Probability of Rural Child Dying by Age 2 (%)</u>	<u>1-4 Death Rate per 1000 Population</u>	<u>0-4 Deaths as % of Total Deaths</u>	<u>& Newborns with Weight Less Than 2500 Grams</u>
Belize	38 (1980)	6 (1980)	3.0 (1981)	27 (1980)	N.A.	2.2 (1980)	15 (1979)	N.A.
Costa Rica	30 (1980)	4 (1980)	2.7 (1980)	19 (1980)	9 (1973)	1.1 (1980)	3 (1979)	6.8 (1980)
El Salvador	40 (1978)	9 (1975-80)	2.9 (1980)	85 (1980)	15 (1971)	6.9 (1980)	12 (1974)	6.7 (1980)
Guatemala	41 (1975-80)	11 (1975-80)	3.0 (1975-80)	86 (1980)	16 (1973)	12.4 (1980)	21 (1978)	10.0 (1980)
Honduras	47 (1975-80)	12 (1975-80)	3.5 (1975-80)	87 (1981)	15 (1970)	4.3 (1979)	13 (1978)	9.2 (1981)
Nicaragua	47 (1975-80)	12 (1975-80)	3.4 (1975-80)	102 (1980)	15 (1971)	3.6 (1977)	18 (1977)	N.A.
Panama	31 (1975-80)	6 (1975-80)	2.4 (1981)	21 (1981)	N.A.	2.1 (1981)	8 (1974)	9.7 (1980)

TABLE 3

DEATH RATES PER 100,000 FOR SPECIFIC CAUSES IN CHILDREN UNDER 1 AND
1-4 YEARS OF AGE IN CENTRAL AMERICAN COUNTRIES AND PANAMA AROUND 1980

Country	Year	Age specific death rates		Diarrheal Diseases		Influenza and Pneumonic	
		Under 1 year	1-4 years	Under 1 year	1-4 years	Under 1 year	1-4 years
Costa Rica	1979	2212.3	129.2	196.4	11.3	225.3	11.7
El Salvador	1974	5341.1	608.2	1276.1	182.1	370.3	32.7
Guatemala	1978	7226.6	1309.9	1345.4	408.6	1229.5	220.5
Honduras	1978	2689.6	478.6	519.5	92.8	179.8	34.8
Nicaragua	1977	3516.3	360.0	1229.0	-	251.1	-
Panama	1974	3158.9	465.7	293.7	78.8	403.6	64.1

Source: Health Conditions in the Americas 1977-1980. PAHO/WHO. 1982.

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TABLE 4

NUTRITIONAL STATUS OF CHILDREN UNDER 5 YEARS OF AGE AND DAILY CALORIE
AND PROTEIN SUPPLY PER CAPITA IN CENTRAL AMERICAN COUNTRIES AND PANAMA

Countries	Year	Nutritional Status (a)		Daily calorie and protein supply per capita (b)			
		Weight retardation / 75% weight for age*	Year	Weight retardation / 75% weight for age**	1975-1977 average calories protein (g)	As percentage of calorie re- quirements (1977)	
Costa Rica	1966	13.7	1978	7.0	2,487	58.1	116
El Salvador	1965	26.0	1978	10.4	2,071	54.4	90
Guatemala	1965	32.4	1979/80	29.5	2,023	53.7	98
Honduras	1966	29.5	-	-	2,084	51.5	89
Nicaragua	1966	15.0	-	-	2,452	70.4	109
Panama	1967	11.9	1980	11.6	2,346	54.8	101

(*) Standard: IOWA.

(**) Standard: WHO/NCHS.

Sources: (a) National Nutritional Surveys.

(b) Food Balance Sheets. 1980. Food and Agriculture Organization of the United Nations.

RESEARCH AND STUDIES PROFILES

I. APPLIED ANTHROPOLOGICAL COMPONENT

A. Background

Presently most developing countries face the problem of low coverage of primary health care programs. It is also the case, however, that where programs are available they are underutilized by the population they are supposed to serve. Several factors, such as characteristics of the users (e.g. educational status, ethnicity), characteristics of the providers (e.g. level of training, ethnicity), interactions between users and providers, and content and structure of the programs, have been reported to account for the low utilization of primary health care.

The major purpose of the anthropological components is to assess beliefs, attitudes and practices regarding health services and childhood diseases, particularly growth monitoring and diarrheal diseases. In addition, the project will provide baseline data for use in the development of the educational, training and promotion component, will assist in the development of messages and materials and will build on the baseline data with periodic evaluations of attitudes and behaviors.

B. Specific Objectives

1. To identify household-level perceptions and behavior related to health and illness, child growth, prenatal care and health care services.
2. To examine the perceptions of health care providers of their job, of local health systems and of the people's attitudes, opinion and behavior related to health services.
3. To study the interactions between providers and users of health services in order to aid in improving the quality and efficacy of these interactions.

C. Methods

The anthropological research will be carried out in all countries during the five-year period, using similar and standardized methodologies. A three-step research approach will be adopted to accomplish each of the major goals of the project.

The first step will be ethnographic case studies of household and primary health care programs in selected communities. The methodology to be used consists of ethnographic interviews using specific interview guides.

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In order to conduct additional qualitative research in a larger area than the communities selected for case studies and in less time, the second step will focus group research in other communities.

Finally, the third research method utilized will be knowledge, attitudes and practices (KAP) surveys in representative samples of the population in the various countries in the region. In-depth information will be used to develop questionnaires for quantitative research surveys. Furthermore, it is expected that the surveys will complement the findings of the qualitative research and will provide statistical information on the topics of interest to the investigation, which is particularly important for evaluation purposes.

All ethnographic data will be collected by field workers, who will also act as moderators in order to focus group research. Field workers will be anthropologists or anthropology students with previous rural field experience.

The findings of this project will have immediate applications in the project. The specific objectives of the application of findings are the following:

1. To increase providers' awareness of patient knowledge and beliefs about health and illness and of opinions and complaints about health services.
2. To adjust the structure and content of programs to suit local circumstances.
3. To aid in the development of educational materials for both providers and users of health services.
4. To help in the development of mass communication programs.
5. To improve relations between providers and users of health services.
6. To help evaluate program process and impact.

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II. THE IMPACT OF ORAL REHYDRATION THERAPY, GROWTH MONITORING AND EDUCATION PROGRAMS - SENTINEL AREAS -

Diarrheal diseases and malnutrition are the leading causes of death in children in developing countries and a frequent cause of the demand for health services in most developing countries. However, INCAP studies reveal that less than 50% of the children suffering from either simple diarrhea or diarrhea with blood and mucus actually seek care at the clinic.

These results, and data showing that the use of health services improves health, particularly in those children who are more malnourished, support the need for the integration of educational activities with simplified health care programs. Nonetheless, the effects of integrated health and education activities with supporting nutritional and health interventions at the community level on mortality and morbidity rate associated with diarrheal diseases and malnutrition has never been properly evaluated. That growth monitoring promotes action on the part of mothers and health providers that improve health and institutional status is an assumption that is widely held but it remains to be documented that it is in fact the case and the extent to which it is true. The purpose of this study is to evaluate the process and impact of a program of oral rehydration, growth monitoring and education for health providers and users.

A. Objectives

1. To evaluate the impact of an integrated program of oral rehydration therapy and health education on morbidity and mortality rates in children.
2. To identify the correlates of infant mortality and to assess the relative contribution of diarrheal diseases and protein energy malnutrition.
3. To measure the use of services and to identify the factors associated with use.

B. Methods

The study is to be carried out during five years in rural and urban areas in four of the Central American countries. Mortality rates before and during the implementation of the national programs will be compared using the statistical methodology available for case control studies. Analyses will also be carried out to identify the relative importance of the correlates of infant deaths, in particular the role of diarrheal diseases and of growth faltering.

Among the factors to be considered are obstetric, demographic, socioeconomic and maternal characteristics. In similar fashion, multivariate analyses will be carried out to identify those factors associated with poor utilization of services. Finally, the trends in mortality noted in the prospective study will be compared to those revealed by the official statistics in order to test the hypothesis that the latter, though underestimates, are useful nonetheless for detecting trends.

III. NUTRITIONAL REHABILITATION OF CHILDREN SUFFERING DIARRHEAL DISEASES

A. Background

Acute diarrheal diseases, and particularly repeated episodes of chronic diarrhea, produce nutritional damage that can lead to growth retardation and malnutrition in children. The timely and appropriate feeding of children ill with diarrhea, in combination with oral rehydration therapy, is thought to lessen the severity and duration of episodes and also to prevent excessive weight loss. Efforts must, therefore, be made to promote appropriate dietary regimens that are feasible and cost effective for use in institutions in the management of children with diarrhea. At the same time, an effort must be made to instruct mothers in the appropriate feeding of children ill with diarrhea. These efforts must start with a thorough inventory of attitudes, knowledge and practices regarding the feeding of children with diarrhea. In order to reduce costs and to promote self-reliance, the food items selected should be low cost and should be locally available.

Furthermore, there are areas in Central America such as parts of the highlands of Guatemala, where it will prove difficult to use oral rehydration packets and where instead, one should aim at the development of home solutions such as rice water, teas and soups or community preparation of sugar/salt solutions.

B. Objectives

1. To assess knowledge, attitudes and practices regarding the feeding of children during and after episodes of diarrhea.
2. To develop cost effective food preparations that are nutritionally appropriate for the feeding of children with diarrhea and during the convalescence period, applicable at the institutional, community and family level.
3. To develop and test alternatives to the WHO-UNICEF formula packets for a variety of settings including institutions and isolated rural areas.

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C. Methods

Related projects are proposed which seek to improve the nutritional rehabilitation of children suffering from diarrheal diseases. 1) First ethnographic information will be obtained about attitudes and practices regarding the feeding of children while ill with diarrhea diseases and during the convalescence period. These data will be collected concurrently with those of the larger anthropological project in all countries of the region. 2) Food technologists will attempt to develop food preparations that are nutritionally appropriate for the feeding of children with diarrhea diseases. The products will be culturally appropriate, will use locally available food and will be easy to prepare. 3) A clinical investigation will be carried out in hospitalized children utilizing the selected formulas. The nutritionally improved preparations could be especially useful in severe diarrhea particularly in the early stages when children are unable to consume much if any food. As part of the third subproject, efforts will be made to identify and test alternatives for areas where an efficient distribution network of ORT packets is not expected. Among the aspects to consider are name or community preparations of sugar/salt mixtures and the identification and promotion of locally known and used beverages. 4) A fourth subproject will seek ways to adapt successful aspects of the tested technologies for use at the village and community level.

IV. RISK FACTORS OF LOW-BIRTHWEIGHT AND NEONATAL DEATH

A. Background

Low birthweight has been identified as a risk factor for depressed immunocompetence, high morbidity, growth faltering and infant mortality. Therefore, attempts to reduce diarrheal and infant mortality rates should include efforts to improve newborn status at birth. The present project will explore in Central American populations, the validity of the indicators previously developed in the context of primary health care programs and in hospitals in the region. In addition, the project will explore alternative interventions to be implemented in order to reduce the risks of low-birthweight and neonatal mortality in these populations.

B. Specific Objectives

1. To develop a risk score for the identification of mothers with the highest risk of having a low-birthweight baby or neonatal death.
2. To test the predictive capacity of the risk score developed.

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3. To evaluate the impact of specific interventions aimed at reducing the risk of low-birthweight babies and neonatal death.

C. Methods

Two studies are proposed here which will extend INCAP's considerable expertise in this area.

1. Risk factors of low-birthweight and neonatal death

Two approaches are proposed for this sub-project. 1) First, data available from previous INCAP studies will be analyzed to assess the significance of low birthweight for growth faltering, diarrheal diseases and infant mortality. Also, the correlates of low-birthweight will be identified and risk scales will be derived. The response in birthweight in high and low risk mothers supplemented during pregnancy will be examined in data already available. 2) The next step proposed is a one year investigation to be carried out in urban hospitals and rural areas in four of the countries of the region. The risk scale developed will be used to select high risk mothers. These will be randomly assigned to treatment or control groups, the latter receiving the usual prenatal and postnatal care. The effectiveness of the intervention will be measured in terms of improved birthweight and lower neonatal deaths.

2. Maternal indicators of nutritional status

This sub-project also proposes to analyze existing data at INCAP as well as carry out a new, small-scale investigation. In terms of the analysis of existing data, we propose to investigate the following: 1) The assessment of body composition changes (as ascertained through anthropometry) during pregnancy and lactation; 2) the relationship between these changes and low birthweight and growth faltering.

These analyses will inform us as to the impact of pregnancy and lactation on maternal nutritional status and will also give us information about the effects of maternal body composition changes on the fetus and the child. Through this work, the most sensitive anthropometric indicators will be identified.

The new investigation proposed is a study to validate anthropometric indicators of nutritional status using underwater weighing and urinary creatinine excretion data as reference values. Together, these lines of research will result in the development of risk scales for use in the region and in a package of interventions of known effect of birthweight and neonatal mortality rates of children of high risk mothers.

V. EPIDEMIOLOGY OF DIARRHEAL DISEASES, SPECIALLY IN CASES OF CHRONIC DIARRHEA

A. Background

Diarrheal diseases are an important cause of morbidity worldwide and a major cause of mortality among children of underprivileged areas of the world. The deleterious effect of diarrheal episodes, not only in terms of their incidence but also in terms of their duration, on nutritional status has been clearly demonstrated in different settings.

Oral rehydration therapy (ORT) can be successfully used in cases of diarrhea to prevent mortality, to shorten the period of hospitalization, and to reduce the negative effects of diarrheal on nutritional status. It is necessary however, to implement preventive measures aimed at reducing the incidence rate of diarrheal disease among children of underprivileged areas of the world.

In order to implement preventive measures aimed at controlling diarrheal morbidity, it is imperative that information be collected to achieve a better understanding of the most important factors in the genesis of acute and chronic diarrheal and thus to be able to design effective interventions. The purpose of this project is to obtain information on the factors that may influence incidence, severity and seasonality of acute, persistent and chronic diarrhea among rural children less than two years of age. The information to be obtained will be basis for the formulation of strategies aimed at reducing the incidence and severity of diarrheal diseases.

B. Specific Objectives

To determine:

1. The role of infant feeding practices and nutritional status, (including growth faltering) of the child in determining the incidence and severity of episodes of diarrhea of various etiologies.
2. The degree of contamination in weaning foods fed to children and its relationship to types and incidence rates of episodes of diarrhea.
3. The factors that may influence the development of chronic diarrhea, in relation to the etiology of the episode.
4. The mechanisms of transmission of the most important pathogens of diarrhea in the community.

C. Methods

This three year study will be carried out in rural Guatemala. The study will be longitudinal and 150 to 200 children will be followed during the first two years of life. Information about household composition, socioeconomic status, availability and use of water and type of excreta disposal will be obtained at the beginning of the study for each household. During the first two years of the field operation, field workers will visit the homes of the participants twice a week to inquire about the presence of signs of diarrhea (five or more loose stools in a 24-hour period) in the child. As soon as an episode of diarrhea is identified, fecal samples will be obtained for the isolation and identification of the agents. The specimens will be collected on the day when the case is detected and on the two following days. If the episode persists for more than five consecutive days, additional samples will be obtained in the 6th, 7th and 8th days of illness. A control child matched for age, sex and breastfeeding status will be cultured in parallel to each case. Also, fecal specimens will be collected routinely once a week during the first four months, and once a month thereafter.

Other information to be obtained routinely for each child includes feeding pattern, anthropometry, morbidity and presence of intestinal parasites. Analyses of bacterial contamination in drinking water and in weaning foods will also be carried out periodically.

CHILD SURVIVAL PROGRAMS PROPOSED BY
CENTRAL AMERICAN/PANAMA COUNTRIES

The reduction of infant and child mortality and protein-energy malnutrition through primary health care are stated priorities for the Central American countries and international organizations in the subregion. The Peace Bridge (Puente para la Paz), an initiative of the Contadora Group to help Central American countries define and obtain financing to meet their most pressing health needs, as well as the continual efforts of PAHO, INCAP, UNICEF, USAID and PVO's, will provide the CA/P countries with technical resources aimed at reducing infant and child mortality, morbidity and malnutrition over a five-year period.

At present, the Central American countries with technical assistance from UNICEF, INCAP and PAHO are proposing the following strategies to deal with the principal nutrition and health problems in the area:

1. Coordinate efforts from international and bilateral agencies in support of the countries' needs.
2. Identify high-risk areas or regions in each country, based on data already available, and identify resources already available in these regions.
3. Concentrate promotional and planning activities, research and technologies development, technical assistance and technical transfer and training on addressing the constraints to the effective use of simple and effective health care technologies in the identified high risk areas of each country.
4. Maximize the utilization of existing knowledge and technical resources in the region.
5. Promote the involvement of different disciplines, sectors, as well as different levels within each sector in the countries. Because of its clear and practical utility, health care and its delivery system can be an especially effective vehicle for initiating and organizing programs of a broader scope.
6. Provide training to health personnel in regional and national institutions in appropriate technologies to be utilized in primary health care.

Based on these strategies, the Central American countries with technical assistance of INCAP, PAHO and UNICEF, have been developing proposals to be

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considered for funding by UNICEF during 1985. The main objectives of these five-year projects are to reduce infant and child mortality, morbidity and severe malnutrition in Central America and Panama and to improve the quality of life of the surviving children. The strategy is to strengthen national capacities to increase coverage and/or effective use of growth and development monitoring, oral rehydration therapy, breastfeeding and infant feeding, immunizations, family planning and the therapy for acute respiratory infections (GOBI-F-IRA).

Some examples of the projects being prepared to be submitted by the Central American countries to UNICEF are:

1. Guatemala

- a. Strengthening of maternal and child care program in high-risk rural areas.
- b. Extension of maternal and child care program to high-risk urban areas.
- c. Promotion and health education in the delivery of services and community participation.

The total amount being requested by Guatemala is approximately US\$18.0 million for the five-year period. The activities to be implemented under this project are GOBI-F-IRA.

2. Costa Rica

- a. Perinatal care to high-risk groups.
- b. Family planning.
- c. Control of diarrheal disease .
- d. Promotion of lactation and infant feeding.
- e. Immunizations.
- f. Control of acute respiratory infections.
- g. Growth and development evaluation.
- h. Process and impact evaluation of primary health care programs.

The amount to be requested is of the order of US\$13.0 million.

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3. Panama

- a. Health communications.
- b. Perinatal care to high-risk groups.
- c. Growth and development.
- d. Breastfeeding and infant feeding.
- e. Control of diarrheal diseases.
- f. Immunizations.
- g. Control of acute respiratory infections.

Panama will be requesting approximately US\$8.5 million for the five-year period.

The other Central American countries are developing programs similar to those listed for Guatemala, Panama and Costa Rica. The funding of these projects is highly probable by the first semester of 1985. The funds being requested by the countries will allow them to implement at the national level the activities in ORT, GM and EPHC being proposed by the INCAP Project.

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CENTRAL AMERICAN CHILD SURVIVAL GOALS
AND FUNDS REQUIRED TO MEET THEM

PROGRAM: CONTROL OF DIARRHEAL DISEASES

COUNTRY	Goals (As stated by countries)	Funds Requested (\$000)	
		International	National
COSTA RICA	Reduce infant mortality due to diarrheal diseases to less than 1/1000 in high risk areas.	3,197.6	631.0
	Reduce by 25% the number of hospitalizations due to diarrheal diseases and dehydration.		
EL SALVADOR	Treat 100% of cases of diarrhea and rehydration with ORT.	Approx. 1,500	Approx. 250
	Reduce by 25% child mortality due to diarrheal diseases.		
GUATEMALA	<u>Urban Area</u>	2,278	N.A.
	Treat 100% of cases of diarrhea and dehydration with ORT.		
	Reduce child mortality due to diarrhea in children less than 5.		
	<u>Rural Area</u>	Approx. 2,000	
	Reduce by 40% child mortality due to diarrheal diseases.		

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COUNTRY	Goals (As stated by countries)	Funds Requested (\$000)	
		International	National
HONDURAS	Increase coverage of appropriate treatment of diarrhea, from 40 to 80%.	47.4	N.A.
NICARAGUA	Reduce by 20% child mortality due to diarrheal diseases.	2,920	N.A.
	Provide opportune oral rehydration to at least 50% of cases with acute diarrheal diseases.		
	Promote oral rehydration therapy in 100% of families.		
PANAMA	Reduce by 60% child mortality rate.	781	N.A.
	Reduce by 50% the number of hospitalizations due to diarrheal diseases and dehydration.		
	Educate 80% of families living in marginal areas and provide them with ORT.		

PROGRAM: GROWTH AND DEVELOPMENT MONITORING

COUNTRY	Goals (As stated by countries)	Funds Requested (\$000)	
		International	National
COSTA RICA	Obtain periodic information on growth and development in 50% of children less than 6 years of age in a 2-year period.	723.7	145.0
	Train 85% of personnel in a 3-year period.		
	Develop an information system on growth and development.		
EL SALVADOR	Increase coverage of growth and development to 100% of children less than 5 years of age.	Approx. 1,200	Approx. 200
	Identify and treat 100% of children with protein-energy malnutrition.		
GUATEMALA	Urban areas. Cover 80% of children less than 5.	Included in a package of activities. Total cost: US\$640	
	Rural areas. Increase coverage by 60% in children less than 5.	Package of activities total Cost: US\$2,214	
HONDURAS	Increase coverage of growth and development monitoring from 41 to 80%.	249.9	50.0

COUNTRY	Goals (As stated by countries)	Funds Requested (\$000)	
		International	National
NICARAGUA	<p>Increase coverage of growth and development to 100% of children less than 6 years old attending the health services.</p> <p>Treat 100% of malnourished children.</p> <p>Treat 60% of children with psychosocial developmental problems.</p>	3,237	N.A.
PANAMA	<p>Extend coverage for growth and development to</p> <p>90% newborns</p> <p>80% infants less than 1 living in marginal areas;</p> <p>60% children 1-2 years living in marginal areas;</p> <p>30% children 2-4 years living in marginal areas.</p>	1,261	N.A.

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