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DETAILED IMPLEMENTATION PLAN

for the  
I.E.F. - USAID Cooperative Agreement  
#OTR-0284-A00-0073-00

MULTIPLE INTERVENTION STRATEGY  
TO IMPROVE VITAMIN A NUTRITION  
IN ALTA VERAPAZ, GUATEMALA

MARCH 1991

the  
International  
Eye Foundation



"A MULTIPLE INTERVENTION STRATEGY  
TO IMPROVE VITAMIN A NUTRITION  
IN ALTA VERAPAZ, GUATEMALA"

Submitted by: The International Eye Foundation

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Contact: Mr. John Barrows  
Public Health Program Coordinator  
International Eye Foundation  
7801 Norfolk Avenue  
Bethesda, Maryland 20814

Dr. Gustavo Hernandez Polanco  
Project Director  
National Committee for the Blind and Deaf  
Guatemala City, Guatemala

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SECTION A. DIP COUNTRY PROJECT SUMMARY TABLE  
(See format A. on preceding 3 pages).

SECTION B. LOCATION AND FORMAL AGREEMENTS

B.1 The International Eye Foundation (IEF), in conjunction with The National Committee for the Blind and Deaf (NCBD), initiated the vitamin A project in October, 1991. The current project builds on an earlier vitamin A intervention project, NutriAtol, funded by the U.S.A.I.D. Office of Nutrition from 1987 to 1989. Based on the experiences gained during that period it was decided to 1) limit the geographical area from two to one rural Province, 2) develop inter-sectorial activities with local Ministries, 3) establish a permanent field office and improve supervision structure, 4) select limited (feasible) project activities and develop more modest objectives. In the present project, an emphasis is placed on strengthening the health delivery infrastructure at the community level and integration of vitamin A into existing Child Survival activities.

Therefore, the vitamin A Intervention Project will be carried out in 40 rural communities in the south-central portion of the Providence of Alta Verapaz. The 40 rural communities are specifically located in the municipalities of Carcha, Chamelco, and San Cristobal. (SEE MAP IN APPENDIX 1). These communities are scattered throughout a mountainous broken terrain and are characterized by dispersed settlement patterns often isolated from the main population centers. The majority of the population are of Mayan descent and speak the indigenous languages of Ketchi and Pokamchi. The primary economic activities are subsistence farming, lumbering, and contract labor on local coffee and cardamon farms.

The three municipalities are divided into four working districts. The following chart shows the three municipalities, the four working districts, the number of target communities, and the total estimated population and households for each area.

MUNICIPALITY	# COMMUNITIES	*POPULATION	# HOUSEHOLDS
1. Chamelco	8	10,098	1,772
2. Carcha #1	13	5,762	1,011
3. Carcha #2	9	6,030	1,058
4. San Cristobal	10	4,077	706

\* Population data from the Ministry of Health, Alta Verapaz. The 40 initial project communities are listed in APPENDIX 2.

B.2 There have been changes in the selection of the project areas. The areas in the Province of Santa Rosa in the south-eastern quadrant of Guatemala, originally proposed to be included as a project area have been omitted due to the anticipated logistical and administrative constraints of one field office in Coban, more than a 100 miles to the north.

The project area of Alta Verapaz was selected after considering: 1) evidence of a continued presence for hypovitaminosis A in the Alta Verapaz region, and 2) the majority of the population consume "panella," an unrefined molasses product rather than the commercially refined and vitamin A fortified sugar.

The criteria for selection of the individual communities were: 1) continuation of activities begun in the NutriAtol project, 2) no projects of a similar nature are being carried out at present by the Ministry of Health and Ministry of Agriculture, 3) many of the areas are underserved by the Ministry of Health and Ministry of Agriculture, 4) in many of the communities existing self-help groups are presently operating but lack support and resources, and 5) communities were chosen by selecting those within which the Development Committees exist and are willing to participate in project activities.

The following constraints may apply:

1) many of the areas are physically isolated and accessibility by road in the rainy season is limited, 2) many of the communities are characterized by widely scattered settlement patterns, 3) culturally, the indigenous population of Ketchi and Pokamchi are reserved and initially distrustful due to conflict in the area during the early to mid 1980's, 4) potential cultural constraints related to food consumption patterns and habits as well as a potential resistance to the introduction and increasing the consumption of some vitamin A rich foods, 5) a changing subsistence economy creating competing demands between food production for consumption and sale, 6) a significant portion of the women are illiterate or with limited primary school education thus placing a constraint on the content and types of educational materials which can be effectively utilized, and 7) time available to the community volunteer and to mothers to participate in project activities can be limited due to the necessity of household and other income-generating activities.

B.3 The International Eye Foundation has been active in the Republic of Guatemala since 1987. The IEF works primarily through the National Committee for the Blind and Deaf (NCBD), a private organization dedicated to the prevention of blindness and care of the indigent blind and deaf, through its network of hospitals and clinics. In 1985, the NCBD was officially designated by the MOH of Guatemala as the entity responsible for the nation's prevention of blindness and rehabilitation activities for the southern portion of the country. Recent recognition of the NCBD from the Office of the President, Jorge Serrano Elias, further strengthens the relationship between the NCBD and the GOG. (SEE APPENDIX 3, Letter of Support). Meetings at the Provincial level offices of the Ministries of Health, Agriculture, and Education in Alta Verapaz have concluded with agreements of cooperation. An agreement with Peace Corps/Guatemala for inclusion of Peace Corps Volunteers in the project is under consideration.

A. PLANNED INTERVENTIONS AND SIZE OF THE BENEFICIARY POPULATION

Number of Beneficiaries

Intervention	0-11 Months	12-23 Months	24-59 Months	0-71 Months Vitamin A Only	Women 15-44 Years	Total Beneficiary Population <sup>1</sup>
ORT						
Immunization						
Nutrition					4,577	4,577
Vitamin A				5,193		5,193
High Risk Births						
Malaria Control						
Other Gardening					4,577	4,577

<sup>1</sup>Total number of women and children who are eligible to receive project direct services

Specify Data Source (circle one):

DC PVO Data Collection System; BG Best Guess; DK Don't Know; Other (specify) MOH Census Data

Calculation of A.I.D.\$ per Potential Beneficiary per Year

Number of women 15-44 years	<u>4,577</u>
Number of children 0-59 months	<u>5,193</u>
Estimated number of live births	
year 2	<u>790</u>
year 3	<u>800</u>
Total Potential Beneficiaries	<u>11,360</u>

\* Divide total A.I.D. Funding for the project by the total number of potential beneficiaries:  $\frac{398,250}{\text{A.I.D.}\$} + \frac{11,360}{\text{Poten Ben}} = \frac{35.05}{\text{Sub Total}}$

Then divide by 3 (length of project):  $\frac{35.05}{\text{Sub total}} / \frac{3}{\text{L.O.P.}} = \frac{11.68}{\$/\text{Potential Beneficiary/Year}}$

\*Total AID field costs

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# DIP SECTION A: COUNTRY PROJECT SUMMARY TABLE (cont'd)

Organization International Eye Foundation  
Country Guatemala

## B. ACTIVITIES: Circle all activity codes that apply for each intervention

### 1. ORT

- 01 - Distribute ORS packets
- 02 - ORT training
- 03 - Promote ORT home-mix
- 04 - Promote ORT home-base mix
- 05 - Dietary management of diarrhea
- 06 - Hygiene education
- 35 - Other -----  
(Specify)

### 6. Malaria Control

- 27 - Training
- 28 - Health education
- 29 - Treatment
- 30 - Environment actions
- 31 - Residual insecticides
- 32 - Larvaciding
- 33 - Provision of bednets
- 34 - Provision of commodities
- 35 - Other -----  
(Specify)

### 2. Immunization

- 07 - Distribute vaccines
- 08 - Immunize mother/children
- 09 - Promote immunization
- 10 - Training in immunization
- 35 - Other -----  
(Specify)

### 7. Other Specify

-----  
-----  
-----  
-----  
-----

### 3. Nutrition

- 11 - Distribute or provide food
- 12 - Distribute or provide iron & folic acid
- 13 - Distribute or provide scales & growth charts
- 14 - Counsel mother on breastfeeding and weaning practices
- 15 - Promote growth monitoring
- 16 - Training in breastfeeding & weaning practices
- 17 - Training in growth monitoring
- 18 - Sponsor mother-to-mother breastfeeding/ support groups
- 35 - Other -----  
(Specify)

### 4. Vitamin A

- 18 - Vitamin A nutritional education
- 19 - Vitamin A food production
- 20 - Vitamin A supplementation
- 21 - Vitamin A deficiency treatment
- 22 - Vitamin A fortification
- 35 - Other NutriAto1 Gardening  
(Specify)

### 5. High Risk Births

- 23 - Distribute contraceptives
- 24 - Sponsor training sessions on high-risk births
- 25 - Promote exclusive breastfeeding to delay conception
- 26 - Promote child spacing or family planning or space births
- 35 - Other -----  
(Specify)

## DIP SECTION A: COUNTRY PROJECT SUMMARY TABLE (con't)

International Eye

Organization Foundation

Page 3 of 3

Country Guatemala

### PROJECT DURATION

1. Start Date October 1, 1990  
MM      DD      YY

2. Completion Date September 30, 1993  
MM      DD      YY

### CHILD SURVIVAL BUDGET

I. By Year (In thousands of dollars)	A.I.D. Contribution	PVO Contribution	Other Funds (Identify)	Total
Year 1	110,414	34,548		144,962
Year 2	135,132	42,950		178,082
Year 3	152,704	30,048		182,752
Subtotal-Field Costs	398,250	107,546		505,796
Subtotal-HQ/HO Costs	59,750	45,120		104,870
<b>TOTAL</b>	<b>458,000</b>	<b>152,666</b>		<b>610,666</b>

### PERCENT OF TOTAL A.I.D. CHILD SURVIVAL FUNDS BY INTERVENTION (Sum to 100%)

1.ORT.....	_____	%
2.Immunization.....	_____	%
3.Nutrition.....	<u>60</u>	%
Breastfeeding.....	<u>10</u>	%
Weaning Practices....	<u>10</u>	%
Maternal Nutrition...	<u>10</u>	%
Vitamin A.....	<u>30</u>	%
4.High Risk Births.....	_____	%
5.Malaria.....	_____	%
6.Other (specify).Gardening	<u>40</u>	%

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## SECTION C. PROJECT DESIGN

### C.1 The project consists of three key project interventions:

1. Vitamin A supplementation (annual high dose vitamin A capsule/liquid, and provision of NutriAtol), to children aged 6-72 months.
2. Provision of related nutrition education to mothers of children aged 0-71 months.
3. Promotion of vitamin A food production through school and household gardens.

The project is community-based and depends upon the daily home visits by a cadre of community health volunteers (CHV) selected by the communities and supervised by project staff. The CHVs will be trained in project and other child survival interventions, and will be given a specific set of tasks to guide household visits and education of mothers. Quarterly "mini-campaigns" will be organized in each of the communities in coordination with the local Ministry of Health to be the primary mechanism for vitamin A distribution and immunization. Those households not attending the mini-campaign will be targeted for a home visit by the CHV to complete vitamin A supplementation, provide NutriAtol and nutrition counselling, and promote ORT. The CHV will make routine home visits to all of her households 1-2 times per month and will hold regular group meetings of all of her households in small groups once per month. The IEF staff of 8 Promoters (working in teams of 2) are assigned a specific area and will provide monthly supervision, continued training of the CHVs and quality control of the MIS. Two Leaders (nutrition and horticulture) will supervise the promoters and will serve as permanent trainers for promoters, volunteers and other auxiliary, extension and professional staff representing the Ministries of Health, Agriculture and Education. The gardening intervention will consist of training for school teachers and community leaders. School gardens, supported by a revolving seed bank, will serve as a focal point in each community for the promotion of food production techniques. Each of the interventions will be phased into the project.

C.2 A population-based registration system will be established in all 40 communities. Each of the CHVs will be responsible for 30-50 households (depending on the settlement patterns). The volunteers will be supervised by a promoter who will be responsible for 11-12 volunteers each. Children under age 6 years, their mothers and pregnant women will be identified through a household register, and their participation in the quarterly mini-campaigns and monthly CHV nutrition meetings will be tracked through this system. The promoters will abstract information from the CHV registers and submit a report of all CHV

households (aggregated) on a monthly basis. These reports will be collated by the project leaders and summarized by the Project Coordinator. Although the reports will initially be hand tabulated, a computerized MIS program will be developed with assistance from the IEF part-time data analyst in Guatemala City. A baseline and end-of-project sample survey will be performed on an estimated sample of 480 households. The types of data to be collected are basic demographic, vitamin A coverage, food consumption, dietary history, and bio-chemical analysis of serum retinol. The baseline is scheduled to be performed in April '91 and results will be presented to all involved parties within one to two months of completion. The results of the survey will also be reported to the local leaders and used in the training of the CHVs. At EOP, the baseline will be repeated utilizing the same methodology and results will be distributed in a similar fashion.

3c.1 Although the project will not address a specific intervention on breast feeding, improved weaning practices, nor improved nutrition of the pregnant and lactating women, elements of these behaviors are included in the health and nutrition education package that will be promoted by the project. Children under age six and their mothers will be identified through the household registration system. Although the size of each of the selected communities is difficult to assess, it is estimated that the total population is 25,967. The expected sizes of each of the project's target populations are estimated as follows:

annual pregnancies/live births	790
infants (0-11 mos)	740
children 12-59 mos	3,562
children 60-71 mos	891
women 15-49 yrs	4,577

\* Estimates are based on available MOH data, 1990-1991.

3.c.2 Data from the baseline survey conducted by the Cooperacion Guatemalteco Alemana Alimentos Por Trabajo (COGAAT) financed by the German government (GTZ) and performed in 1988 indicates that malnutrition continues to be a problem in the Providence of Alta Verapaz. The following table outlines summarized grades of malnutrition:

Nutritional Status of Children Less than 5 Years  
According to Grade of Malnutrition in Alta Verapaz  
Expressed as a Percent

<u>Indicator</u>	<u>Weight/Age</u>	<u>Height/Age</u>	<u>Weight/Height</u>
Normal			
+ - 1 SD	29.0	12.7	87.1
Moderate			
<1/2 SD	37.5	23.2	11.5
Severe			
<2/3 SD	33.5	64.1	1.4

3c.3 According to the COGAAT survey conducted of 1988, "83% of infants 0-5 months of age and 40% of infants 6-11 months of age are exclusively breast fed". Although there is no data from the COGAAT study concerning specific foods used during weaning local health practitioners maintain that childhood diets are typified by corn tortillas with salt, leafy vegetables, tubers, fruits, corn-based cereal and coffee. Seventy percent of mothers have begun mixed feeding by 8 months of age. Although there is no data available, it is suggested that the continued devaluation of the currency (Quetzal) and structural readjustment policies as well as increasing reliance on a cash economy have impacted on the availability of food stuffs and consumption and feeding patterns of infants and young children.

Evidence is not systematically gathered on vitamin A deficiency in Alta Verapaz. However, two small studies performed in 1987 indicated a continued presence of vitamin A deficiency in the Alta Verapaz preschool population, at a level of Category III in the WHO classification for endemic vitamin A deficiency. (See Section 3.c8, page 10). The current project will determine the extent of hypovitaminosis A in the Alta Verapaz area through a comprehensive dietary intake history and a bio-chemical analysis of serum-retinol levels.

3c.4 The project's strategy for improving the nutritional status of infants and children will be three-pronged consisting of vitamin A supplementation (capsule/liquid and NutriAto1), nutrition education and gardening promotion, supported by EPI and ORT promotion.

After the initial training of the promoters and the baseline survey (part of the promoters training), each of the communities will be contacted to hold a meeting of the Development Committee. At that meeting, the local leaders will be asked to select initial candidates as community health volunteers based on the criteria of literacy, willingness to promote project activities, and credibility within their community in matters of child care. CHVs will receive an initial basic training at a central location in vitamin A and nutrition and will be given a specific set of tasks to be completed on a monthly basis.

The project will first begin activities with vitamin A supplementation and nutrition education, phasing in gardening promotion after the volunteers are functioning and the MIS is operative. Activities will begin simultaneously in all four areas. However, because many of the communities have larger populations and a dispersed settlement pattern, many communities will require several CHVs to be identified and trained to assure that approximately 30-50 households with children under age 6, their mothers and pregnant women are served by each CHV. This optimum ratio will not be achieved until the end of 1991.

The two mechanisms of delivery for project interventions are community "mini-campaigns" and follow-up home visits. Community "mini-campaigns" (to be located at area primary schools where possible) will provide the venue for vitamin A supplementation to children aged 0-71 months: (100,000 IU to infants aged 6-11 months, 200,000 IU to children aged 12-71 months annually); nutrition education; immunization for children and women (following MOH protocols); and ORT promotion. Also at these campaigns, staff from the NCBD eye health center in San Pedro Carcha will provide ocular screening services. The CHV will conduct a monthly home visit to every home on her register to follow-up on those mothers and children not attending the "mini-campaign" and to conduct nutrition counseling and update the register. The CHV will also meet with her mothers in small groups on a monthly basis for group demonstration sessions.

There are many constraints to reducing vitamin A deficiency and improving nutritional practices in children. Knowledge is limited concerning the importance of vitamin A and the use of available vitamin A and energy dense foods in the home. By using a woman selected by the community, mothers will receive nutrition education from a peer. The limited geographic area allows the CHV to meet in groups and individually with mothers on a frequent basis. This allows the repetition of nutrition messages and one-on-one counseling with mothers.

Messages delivered through these contacts will be selected as appropriate based on the age of the children in the household, and to the extent possible, relevant to the constraints of time and availability at the household level. A limited set of basic messages are being developed. A process of "concept testing" of messages to better understand the factors that motivate, reinforce, and/or block acceptance of a particular behavior message will be explored in focus groups to be conducted by the project leaders under supervision of the coordinator. All messages will be translated into local dialect and guidelines developed for their use. Several methods of delivery (facilitation, demonstration, story telling) will be used on several levels (individual, group, mass communication). A local radio station, "Tezulutlan", located in each of the project areas will provide air-time to broadcast vitamin A nutrition and production messages in Ketchi and Pokomchi languages. (It is estimated that the majority of the population (72%) has/access to a radio).

To address the possible issues concerning availability of vitamin A foods at the household, gardening promotion will emphasize production of a number of improved varieties of plants (Beta III Carrot) as well as promotion of indigenous varieties. Emphasis will be on production and processing of an adequate amount of food stuffs for both consumption and sale. Both the mother and the father will be included as targets in gardening promotion.

School gardens will provide the venue to demonstrate gardening techniques and food varieties to household members and community leaders. A revolving seed bank will make available, at cost, selected seed varieties to households and community members. Gardening messages will be introduced to the CHVs in late 1991 after initial training for teachers and Ministry personnel is completed.

The project nutrition leader and horticulture leader will have the responsibility of training the promoters and CHVs under the overall supervision of the Project Manager. Additional technical assistance for any further evaluation purposes will be provided by staff from the Center for Studies of Sensory Impairment, Aging and Metabolism (CESSIAM). Assistance in developing the social marketing strategy and conducting focus groups will be sought through a VITAP consultant and a Guatemalan medical anthropologist from the University Del Valle.

3c.5 The objective for nutrition education, the indicators, and benchmarks established for the nutrition education intervention are as follows:

Objective:	Provide annual nutrition education related to vitamin A to 100% (4,577) of mothers with children less than age 6, ensuring that 75% can identify two or more locally available vitamin A rich food.
Indicator:	Percent of mothers reached annually. Percent of mothers who can identify 2 or more vitamin A rich foods.
Benchmarks:	880 mothers by September, 1991 4,577 total mothers by November, 1991 4,577 mothers from January to June, 1992 4,577 mothers from January to June, 1993

The monitoring system will tally the numbers of mothers reached on a monthly basis. The percentage of women achieving the knowledge indicator will be evaluated by a sample of beneficiaries at the mid-term and at the end-of-project evaluation.

3c.6 (not applicable)

3c.7 The nutrition education messages the project will develop for the training of CHVs will stress important behaviors of breast feeding, introduction of complementary foods, nutritional practices during and after the occurrence of infectious disease (diarrhea and ARI), and consumption of vitamin A and energy dense foods. As mentioned earlier, the project will attempt to develop a set of culturally appropriate and age-specific messages using a variety of simple delivery methods that will be communicated on multiple levels (individual, group, and mass communication). A process by which nutrition behaviors are investigated through simple qualitative research methods (focus groups) will be an on-going component of the project.

3c.8 The major objective of this project is the prevention and treatment of vitamin A deficiency. There is no data available on the prevalence of night blindness in the country. However, evidence on vitamin A deficiency in Alta Verapaz (although not systematically gathered) indicates a problem exists. In a survey conducted in March 1987 by CESSIAM, a research branch of the NCBD, data indicated that the median intake of vitamin A in a sample of preschool children was 229 RE/day.

In a smaller population-based study conducted in 1987, prior to the first NutriAtol project, data indicated that 56% of the sample had a mean circulating retinol concentration of 18.7 ug/dl, considered to be low to deficient. A year later, this rate was still 48%, and the mean retinol level was 20 ug/dl, even after the introduction of fortified sugar and participation in capsule distribution. The data from these two studies indicates a continued presence of vitamin A deficiency in the Alta Verapaz preschool population, at a level of Category III in the WHO classification for endemic vitamin A deficiency. A secondary objective of the current project will be to determine the extent of hypovitaminosis A in the Alta Verapaz area through a dietary intake history and a bio-chemical analysis of serum-retinol levels in a sub-sample of the population.

Although there is a national mandate to fortify all sugar in the country, recent economic analysis indicates that the increased costs resulting from fortification that are passed to the consumer, may be discouraging households from purchasing sugar. This is particularly true in the rural areas where the majority of households purchase the cheaper and more available molasses byproduct "panella" for use as the household sweetener. There are numerous sources of vitamin A rich foods available in Guatemala and the Province of Alta Verapaz. A study funded by the U.S.A.I.D. Office of Nutrition (conducted by the current IEF project coordinator) and completed in 1989, identified important sources of vitamin A rich vegetables. The sources include a variety of exotic (introduced) and important indigenous vegetable sources that are grown and foraged. The information gained from this survey is assisting the project in developing the horticulture intervention.

3c.9 The project will follow the national and local policies of the Ministry of Health for vitamin A capsule/liquid distribution. The age group dosage is 100,000 IU for infants aged 6-11 months and 200,000 IU for children 12-71 months of age. Supplementation will be on an annual basis. Vitamin A capsules or liquid will be distributed during the mini-campaigns in conjunction with the MOH immunization activities. At the household level, the CHV will provide capsules to those children who fail to attend the mini-campaign. The CHV will be supplied a small quantity (10+) of capsules, stored in a plastic film canister, which will be monitored on a monthly basis by the promoters. Distribution will also take place through the normal MOH delivery structure at their regular health centers.

The project will train the following categories and numbers of health and other workers in the prevention/treatment of vitamin A deficiency, and production of vitamin A foods:

TYPE	NO.	INITIAL TRAINING	IN-SERVICE
Community Volunteer	94	28 hours	Monthly 1-3 hrs
IEF Promoters	8	70 hours	Monthly 3 hrs
Ministry Staff:			
Health	20	7-14 hours	Annually
Agriculture	20	7-14 hours	Annually
Education	40	7-14 hours	Annually

The training of Promoters has been completed. The training of CHVs will begin in May and will be completed by July '91. Training for Ministry staff will begin in May '91. The in-service training for Promoters will be provided at routine meetings at the end of each month and in-service training for the CHVs will be provided by the Promoters on an on-going basis. A simple module consisting of vitamin A nutrition and horticulture will provide the basis for the training of all categories of worker.

3c.10 (A). The objective for vitamin A distribution (high dose), the indicators, and benchmarks established for the vitamin A supplementation intervention are as follows:

- Objective: Provide vitamin A capsules/liquid to 90% (4,677) of the children 6-71 months of age annually.
- Indicator: Percent of eligible children who have received vitamin A annually.
- Phasing: 3,000 children by August 1991  
4,677 total children by October 1991  
4,677 children from August to October 1992  
4,677 children from August to October 1993

Pending definition of MOH policy, breast feeding mothers who are within two months of delivery of their infants may be included in the project population to receive vitamin A capsule supplementation. This will be clarified at the mid-term evaluation. The number of potential beneficiaries is approximately 790 women annually.

3c.10 (B). The objective for NutriAtol distribution, the indicators, and benchmarks established for the vitamin A supplementation intervention are as follows:

- Objective: Provide (packages of 8) to 100% (4,577) of the households ensuring that 60% of mothers administer to their children after an infectious disease episode (diarrhea/ARI).

Indicator: Percent of households receiving package sets annually.  
Percent of eligible children receiving after an infectious disease episode (diarrhea/ARI).  
Benchmarks: 880 households by September 1991  
4,577 total households by November 1991  
(On-going as required).

NutriAtol is a vitamin A-rich refeeding medicinal food for children convalescing from an infectious disease episode (diarrhea/ARI/measles). It comes pre-packaged in individual servings containing 20g of product. Each 8-oz serving contains 2 to 2.5 times the daily vitamin A requirement for children 6-71 months, and 15g of sugar. Each packet is printed with a pictorial and written instructions for preparation. SEE APPENDIX 4, Composition of NutriAtol. It is specially designed to replace losses of hepatic vitamin A stores due to withholding of food and catabolic wastage occurring during the illness.

The rationale for inclusion of the NutriAtol component is to further assess the role of a fortified food product in a population where it has been previously utilized. Although it is understood is not a sustainable strategy primarily due to costs, the product serves to focus mothers attention on feeding children after and during an illness, a period in which children are at a greater risk of vitamin A deficiency.

It is anticipated that the NutriAtol component will be phased out. Increasingly, nutrition education will emphasize the use of locally available sources of vitamin A rich foods. The possibility of marketing NutriAtol or its nearest equivalent "Vitatol" as a consumer product will be considered.

#### SECTION C.3e DIP FOR OTHER PROJECT INTERVENTIONS

The objective for school gardens, the indicators, and benchmarks established for the horticulture intervention are as follows:

Objective: Establish demonstration gardens at 40 schools by the end of the project.  
Indicator: Number of functioning demonstration school gardens.  
Benchmarks: 8 gardens by June 1991  
16 gardens by August 1991  
28 gardens by October 1991  
40 gardens by January 1992

The rationale for inclusion of a horticulture intervention is to address the issues of availability of vitamin A rich foods at the household level. Primary schools in the project communities will be the primary focus of this intervention. The schools will

provide the venue to demonstrate improved gardening techniques, to introduce improved varieties of vitamin A-rich vegetables, and to promote indigenous varieties of vitamin A-rich foods. Primary school teachers will be trained in vitamin A nutrition and gardening techniques and will be loaned a set of simple gardening tools. Selected seed varieties will be packaged and provided. CHVs and staff representing the Ministries of Health, Agriculture and Education will be provided training in vitamin A nutrition and gardening. Meetings to demonstrate gardens will be held with Community Development Committees and local leaders in all communities to demonstrate gardens. A revolving seed fund will be made accessible to the community for those households willing to purchase the seeds at cost.

Training of all persons will be the responsibility of the project Leaders (Nutrition and Horticulture). Supervisory visits to the school gardens will be made by the promoters on a monthly basis as they visit the CHVs. The CHVs will also hold some of their meetings with mothers at the school sites. On prearranged dates, a field day will be organized in conjunction with the Ministry of Agriculture staff for all community members willing to participate. Food production and storage messages will be developed along with the nutrition messages. Following the same procedures of concept testing and message development in focus groups each of the production and storage messages will be developed. The use of additional focus groups utilizing men will also be explored.

The possibility of adding a primary eye care intervention will be explored at the mid-term evaluation.

#### SECTION D. PROJECT HEALTH INFORMATION SYSTEM

D.1 The HIS is being developed primarily by Dr. Ivan Mendoza a physician working on a part-time basis with IEF projects and part-time as a researcher for CESSIAM. Additional backstopping will be provided by the IEF Bethesda office.

The system is designed to be functional by manual tabulation and by computer. An initial analysis of data will be made when the promoter makes his/her monthly supervisory visit to each of the CHVs. A computer software program made on D-Base III will also assist with further tabulation, analysis and display at the field office level. Dr. Mendoza will provide the technical backstopping to the project field office on request by the Project Coordinator. All field staff will complete a basic course at a local college to develop a basic knowledge of microcomputers and word processing, spreadsheet and data based programs. Additional assistance from VITAL under an original request to assist the project will be further explored. The HIS will be ready for presentation to the CHVs before the first CHV

training in April.

D.2 The HIS will provide both continuous monitoring of inputs and outputs at the community level and periodic assessments using surveys at baseline and at end-of-project. Project inputs and outputs are monitored monthly to provide the "benchmark" estimates of progress towards achievement of project coverage objectives.

The CHVs interface with the project beneficiaries by conducting home visits on a monthly basis. Each CHV will be responsible for approximately 30-50 households with pregnant women, children under 6 years of age and their mothers, depending on the size and settlement pattern of the community. The beneficiary-specific information will be kept in the CHV's registers only. Once a month the promoters, during their regular supervisory visits to the CHVs, will review the registers and abstract data using a form designed for this purpose. Key data to be monitored by the CHVs and collected by the Promoters are demographic, coverage of vitamin A interventions, group nutrition education, and morbidity (diarrhea/ARI). SEE APPENDIX 5, Monthly Reporting Form.

The data required to assess the effectiveness of the project objectives is defined by the project indicators. The data sources for the indicators include the Promoters' monthly reports and the evaluations conducted at baseline and at end-of-project. Progress towards the coverage objectives (vitamin A, and nutrition education) will be monitored monthly through the Promoter supervisory reports and through the surveys. Progress towards achieving the gardening objective will be monitored by a separate visit to be conducted by the Leaders on a monthly basis at schools.

The HIS emphasizes the importance of immediate use of information for supervision and for motivation of the CHVs and communities. To achieve this immediate feedback, data is aggregated during the monthly supervisory sessions held by the promoters with the CHVs whom they supervise. At this level, the promoter can detect errors using a simple data quality check list, and can also provide the CHV with immediate feedback on her performance.

Each of the promoters monthly reports are reviewed and summarized by the Leaders under supervision of the Project Coordinator. Summary reports are made by Promoter, area, and by CHV. To aid the analysis of monthly reports, a computer program will be developed to summarize data by CHV by month and area and displayed in tables and graphs. Descriptive statistics will be used for this purpose. Monthly reports will be used at the end-of-month staff meetings to provide feed back to the Promoters. During these meetings, the supervisory schedule is developed for each team. Each of the teams will use the summarized data during

their monthly supervisory visits with each CHV and communities. The summary of this data will be used for the annual reports for submission to Bethesda and AID.

In addition to the quantitative assessments of project effectiveness, other quantitative and qualitative activities will be investigated. For instance, later in 1991, a small survey will be designed and conducted to investigate the most culturally appropriate methods of presenting coverage statistics to the CHVs and other community members (for example, a percentage depicted by a bowl of beans, one half full and one full). Additionally, periodic assessments of the quality of project activities (correct dosing, correct target groups, correct identification of diarrhea/ARI and message delivery/demonstration, appropriateness of educational messages) will be performed.

D.3 The project and the HIS are population based. The project will work initially with 40 communities. The estimates for population in each of the communities were made by MOH technicians and have not been verified. The CHVs will have the primary responsibility to maintain a household register of all households with children under age 6, their mothers and pregnant women. Each CHV of the 94 CHV's will have approximately 30-50 households and will be supervised by 8 Promoters. Updating of the registers will be on-going. Simple codes will be developed for pregnancies, birth outcomes, and migration. These data will be collected periodically by the Promoters using a special form.

D.4 All project staff will receive training in the HIS registration and reporting system by Dr. Ivan Mendoza. Initial training will consist of two parts. Part one will be instructions on the household register form and the monthly supervisory report form. The manual data quality check list will be reviewed. All CHVs will receive training in the completion of the HIS registration and monthly forms during their initial training, and will receive monthly follow-up support during the monthly supervisory visits by Promoters. The second part of the initial training will be on the baseline survey to be performed in the first two weeks of April. On-going training will take place at the end-of-month staff meetings as required. An additional in-service training to be conducted by Dr. Mendoza will be on the use of simple descriptive statistics and their application.

D.5 The baseline survey will be conducted during the first two weeks of April. A random sample of children from 120 households in each of the four project areas will be selected for a total sample of 480 children households. The survey will consist of two parts. Part one will consist of household and child data (demographic, coverage of EPI and vitamin A, history of diarrhea and ARI, dietary history, anthropometric measurements, household food production, and simple knowledge data) to be performed by

teams of the Promoters. Simultaneously, 4 teams of 2 persons from CESSIAM will collect blood samples for serum-retinol analysis using high pressure liquid chromatography technology (HPLC) through CESSIAM in Guatemala City. All training and supervision will be the responsibility of Dr. Ivan Mendoza with oversight by Dr. Noel Solomons, Senior Scientist of CESSIAM.

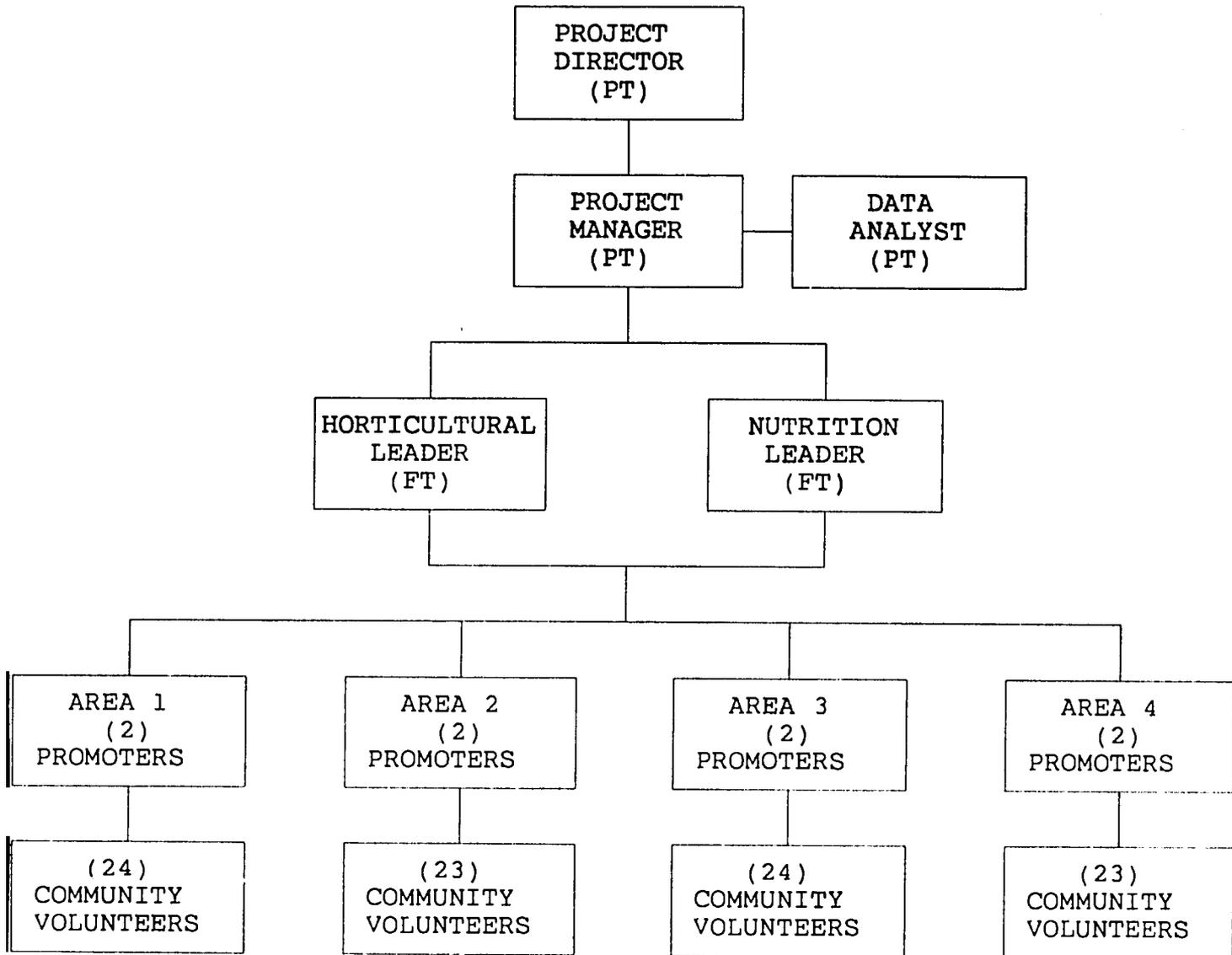
All local leaders representing the 40 communities will be informed of the purpose and content of the survey prior to conducting the survey. Where they already exist, CHVs will be asked to assist the survey teams going house to house. The purpose and content of the survey has also been presented to representatives of the MOH on the regional and local level. An adequate budget has been set aside and a complete costing of total actual costs will be made part of the final report. The analysis and report will be completed no later than the end of May, 1991. The results will be presented to project staff and the MOH, MOA, MOE representatives. The results will be further summarized for presentation to local community leaders during monthly visits by the Promoters. The content and findings of the survey will be used to assist in the development of education messages where appropriate. The same methodology will be used at the end-of-project survey.

#### SECTION E. HUMAN RESOURCES

E.1 The overall organizational chart of the project is presented on the following page. There are five key professional positions, eight promoter-level positions and one support position. The five key professional positions are:

- A. The Project Director, Dr. Gustavo Hernandez Polanco, is a Guatemalan physician with over 20 years of administrative experience in health care. Most recently Dr. Polanco has been the Medical Director for the National Committee for the Blind and Deaf/Medical Division. Dr. Polanco will work for the project on a part-time basis in Guatemala City. The Project Director will provide overall leadership to the project and provide coordination between the field office, Guatemala City, and the IEF Bethesda Office in financial and management concerns with Bethesda. The Director will be responsible for communication with Ministry Offices.
- B. The Project Coordinator, Mr. Bill Scott is an expatriate with experience in the administration of community projects. Mr. Scott was most recently responsible for the management of the IEF/NCBD Onchocerciasis project and was the field investigator for a study on carotene-containing plants and vegetables completed in 1990 for the USAID Office of Nutrition. Mr. Scott is bi-lingual (English-Spanish) and will serve on a full-time basis. The Project Coordinator will have over-all responsibility for implementation of the

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project at the field level including supervision, training of staff, logistical planning, and reporting to the central office. The Project Coordinator will be responsible for communication with Ministry offices at the local level.

- C. The Nutrition Leader, Ms. Irma Bailon, is a Guatemalan with a background in adult education with the Ministry of Education. She is bi-lingual in Spanish and Ketchi and will serve on a full-time basis. The Nutrition Leader will be responsible for the development of the nutrition component of the project, supervision and training of the Promoters and CHVs. The Nutrition Leader will work directly with the Horticulture Leader.
- D. The Horticulture Leader, Mr. Guillermo Segura, is a Guatemalan with a background in horticulture, with specialized experience with the native wild plants used for food and medicines in the Alta Verapaz area. He will serve on a full-time basis. The Horticulture Leader will be responsible for the development of the gardening component of the project as well as supervision and training of the Promoters and CHVs. The Horticulture Leader will work directly with the Nutrition Leader.
- E. The Project Analyst, Dr. Ivan Mendoza, is a Guatemalan physician with experience in bio-medical research. Dr. Mendoza will serve on a part-time basis with the project and will serve as a link to the CESSIAM research branch of the NCBD in Guatemala City. The Project Analyst will be responsible for assisting the project in all data needs.
- F. The project will also employ eight Promoters to work on a full-time basis. The Promoters are bi-lingual in Spanish and Ketchi/Pomkchi and will be cross-trained in the health, nutrition and horticulture components of the project. The Promoters will work in teams of two and will be responsible for the supervision and support of the CHVs.

A list of tasks for the Promoters and CHVs are found in APPENDIX 6.

Additional support staff will include an experienced tri-lingual (English/Spanish/Ketchi) secretary, Ms. Violeta Molina Fuentes, who will serve in a part-time capacity. The Peace Corps office in Guatemala City has been formally requested to provide the project with one or more Peace Corps Volunteers. The request is pending.

The responsibility for the specified functions will be shared by key personnel as follows:

- 1) Project Administration and Management: The duties of administration and management of the project will be shared between the Project Director and the Project Manager. The institutional relationships between the IEF Guatemala office and the IEF Bethesda office will be conducted by the Project Director. The Director will have responsibility for the in-country aspects of the project, and will be the immediate supervisor of the Project Manager. The Director will have primary responsibility for personnel and employment issues, budgeting, financial disbursement and accounting, and the filing of reports. Administration in the field will be the responsibility of the Project Manager.
- 2) Oversight of Technical Health and Horticulture Activities: The technical oversight for the project will be shared between the Project Manager and the Project Leaders. The Project Manager will have overall responsibility for development of training and services for each of the interventions of the project including the HIS. Each of the Project Leaders will have the responsibility to implement their respective components of the project under supervision of the Project Manager. Technical backstopping for the project will be shared between the Project Analyst, Dr. Mendoza in Guatemala City, and the Public Health Program Coordinator, Mr. John Barrows at the IEF office in Bethesda, Maryland. Dr. Mendoza will provide specialized backstopping for the monitoring and evaluation activities, including on-going training for staff in computer application. Mr. Barrows will make 2-3 technical support visits annually in support of the project and a like amount of time at headquarters. He will also participate in the mid-term and end-of-project evaluations. He will also be responsible for the timely forwarding of technical resource material for project staff and coordination of additional technical assistance for the project. Additional technical assistance will be provided from CESSIAM and the NCBD as the need is identified.
- 3) Health Information System: The planning for the HIS will be undertaken primarily by the Project Analyst, Dr. Mendoza, with backstopping from IEF/Bethesda. The Project Manager, assisted by the Project Leaders, will have the overall responsibility for the daily monitoring of the HIS and the monthly reporting of project outputs. The baseline survey, mid-term and end-of-project surveys will be the responsibility of the Project Analyst with backstopping from IEF headquarters. Additional technical assistance from VITAL will be investigated.

E.2 To complete coverage of all estimated households at an optimum ratio of one CHV to 30-50 households, approximately 94 CHVs will be required. Eight Promoters will supervise 11-12

CHVs (23-24 per team) and they in turn will be supervised by two Leaders. The Promoters will visit each of the CHVs 2-3 times a month. Supervision will be individually and in small groups. Individual supervision will consist of maintenance of the household register, review of the report forms for data quality, and household visits to review nutrition counseling of mothers. The Promoters will also arrange group meetings of CHVs at a central site, e.g., school, to discuss CHVs' problems and introduce or review nutrition and/or horticulture information on a monthly basis. The Project Leaders will also include the CHVs during their scheduled focus group activities.

The incentives for the CHVs will be primarily the training and supervision. The provision of a small quantity of vitamin A capsules and ORT sachets along with the training will serve to increase the status of the CHV in the community. No incentives will be provided. However, other non-monetary incentives in the form of a badge, bag, or an item like soap will be investigated. The topic of incentives will be discussed with the MOH and other area organizations working with volunteers.

E.3 The Promoters received an initial 6 week training in health, nutrition, gardening, health education, and community development with assistance from ASECSA, a local organization specializing in training. A practical component of the training includes conducting the baseline survey, holding community meetings and training the CHVs. Training for the Promoters is considered on-going with 1-3 hours set aside at the end of the month to review and introduce new technical material. The Project Manager and Project Leaders will receive additional technical training in micro-computer operation and software application (Word Perfect, Lotus 1-2-3, D-Base) at a local technical College and from the Project Analyst. Additional technical training for the Leaders in applied nutrition and basic community epidemiology will also be designed and conducted using resources from the CESSIAM and the NCBD.

All staff will be required to complete a motorcycle safety and maintenance course to be conducted by an instructor/mechanic from the Coban area. The Nutrition Leader will be encouraged to secure a driver's license.

Pending further clarification of training needs of both the Guatemala project and the similar project in Honduras, a the possibility of joint in-service training of key staff from both projects will be investigated. The possibility of a further training in social marketing and focus group formative research activities will be investigated using an in-country consultant from the University Del Valle (a Medical Anthropologist) and an outside expert consultant identified with assistance from VITAP.

## SECTION F. MANAGEMENT AND LOGISTICS

F.1 The only expatriate is the Project Manager. All other staff including the Project Director are Guatemalan nationals and permanent residents in Guatemala. The Project Manager is on a short-term contract and will overlap with a Guatemalan replacement to be identified later in 1991 to assure continuity in project administration. In addition to the in-service training discussed above in section E.3, the IEF headquarters administrator, Mr. Ed Henderson, visited Guatemala in February to work with the Project Director and Project Manager on financial reporting systems. Additional visits will be made on request of the Project Director. The Project Director and the Project Manager will develop a personnel assessment form to be used for annual job performance reviews. The Project Director and Project Manager will attend appropriate conferences (e.g. IVACC conference in Ecuador) and workshops.

F.2 One Izuzu Trooper (4x4 station wagon) has been purchased for the project. An existing Suzuki, 4x4 jeep used in a previous project will also be utilized. Four motorcycles (Yamaha 125-175 cc) will be purchased for use by the Promoters. Vehicles will be managed by the Project Manager on a daily basis. A local contract for servicing the four-wheel drive vehicles will be established with a local service company in Coban and in Guatemala City. A local motorcycle mechanic will be contracted to service the motorcycles routinely. Log books will be kept daily on all vehicles and their use strictly monitored.

The majority of the Promoters live within the areas assigned to them. The motorcycles will be used to travel to the more distant communities within each area. Many of the communities are still only accessible by foot.

F.3 The equipment and supplies required for the project are: vitamin A capsules, ORT sachets (provided by MOH/UNICEF), four salter scales, equipment and supplies pertaining to the HPLC machine for completion of blood serum-retinol analysis, medical supplies for drawing blood, and a computer and software. These items are either already in-country or are on order from various suppliers. A shipping agent has been contracted to ship supplies and equipment to Guatemala. Clearing through customs will be the responsibility of the Project Director through the NCBD in Guatemala City.

SECTION G. DIP SCHEDULE OF ACTIVITIES  
(See following pages).

SECTION H. COUNTRY PROJECT BUDGET  
(See following pages).

DIP SECTION G: COUNTRY SCHEDULES OF ACTIVITIES

Organization International Eye Foundation  
 Country Guatemala

SCHEDULE OF ACTIVITIES BY QUARTER (Check box to specify quarter and year)

	Year 1				Year 2				Year 3			
	1	2	3	4	1	2	3	4	1	2	3	4
<b>1. Personnel in Position - specify e.g.</b>												
Project Manager	X											
Technical Coordinator	X											
Community/village health workers		X										
Health Information System		X										
Other Support:		X										
<b>2. Health Information Systems (HIS) - specify e.g.</b>												
Consultants/contract to design HIS		X										
Develop and test HIS		X										
Baseline survey												
Design/preparation		X										
Data collection and analysis		X										
Dissemination and feedback to community and project management		X										
Registration/Record/System												
Design/preparation		X										
Implementation		X	-	-	-	-	-	-	-	-	-	-
Dissemination & feedback to community & Project Management		X	-	-	-	-	-	-	-	-	-	-
<b>3. Training - specify e.g.</b>												
Design		X										
Training of trainers		X										
Training manual and materials		X	X									
Training sessions		X	-	-	-	-	-	-	-	-	-	-
Evaluation of knowledge of skills		X	-	-	X	-	-	-	-	-	X	-
<b>4. Procurement Of Supplies</b>												
	X	X	-	-	-	-	-	-	-	-	-	-

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DIP SECTION G: COUNTRY SCHEDULES OF ACTIVITIES

Organization International Eye Foundation  
 Country Guatemala

SCHEDULE OF ACTIVITIES BY QUARTER (Check box to specify quarter and year)

	Year 1				Year 2				Year 3			
	1	2	3	4	1	2	3	4	1	2	3	4
<b>6. Service Delivery to be Initiated</b>												
<b>AREA 1</b>												
<b>ORT</b>												
Immunization												
Nutrition												
Breastfeeding/Weaning Education		X	-	-	-	-	-	-	-	-	-	-
Vitamin A		X	-	-	-	-	-	-	-	-	-	-
Maternal Nutrition												
Growth Monitoring Promotion												
High Risk Birth Prevention												
Other Gardening			X	-	-	-	-	-	-	-	-	-
<b>AREA 2</b>												
<b>ORT</b>												
Immunization												
Nutrition												
Breastfeeding/Weaning Education												
Vitamin A												
Maternal Nutrition												
Growth Monitoring Promotion												
High Risk Birth Prevention												
Other												
<b>6. Technical Assistance Visits Scheduled</b>												
HQ/HO/Regional office visits	X	X		X		X			X			X
Local Consultants		X		X		X						
External technical assistance		X				X						X
<b>7. Progress Reports Required</b>												
Annual project reviews					X				X			
Annual reports					X				X			
Midterm evaluation						X						
Final evaluation												X

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FORMAT 6: ESTIMATED COUNTRY (GUATEMALA) PROJECT BUDGET

	Year 1		Year 2		Year 3		Total		Total
	AID	IEF	AID	IEF	AID	IEF	AID	IEF	
<b>I. PROCUREMENT</b>									
<b>A. EQUIPMENT and SUPPLIES</b>									
<b>TECHNICAL</b>									
1. Vehicles (2)	0	13,000	0	13,000	0	0	0	26,000	26,000
2. Motorcycles (5)	0	7,000	0	1,700	0	0	0	8,700	8,700
3. Camera	0	200	0	0	0	0	0	200	200
<b>OFFICE EQUIPMENT</b>									
1. Computer Upgrades	0	750	0	0	0	0	0	750	750
2. Volt. Reg./UPS	0	1,200	0	0	0	0	0	1,200	1,200
3. Office/House Fur.	1,500	0	0	0	0	0	1,500	0	1,500
<b>SUPPLIES</b>									
1. General Office	1,000	0	1,100	0	1,200	0	3,300	0	3,300
2. Paper/Printing	500	0	600	0	700	0	1,800	0	1,800
3. NutriAto1	0	8,000	0	12,000	0	12,000	0	32,000	32,000
4. Garden tools	2,000	0	2,500	0	0	0	4,500	0	4,500
5. Train. Materials	1,500	0	1,000	0	500	0	3,000	0	3,000
6. Medical Supplies	200	0	0	0	500	0	700	0	700
<b>B. SERVICES</b>									
Consultants (DIP, MIS, Baseline)	0	0	0	0	0	0	0	0	0
DIP Admin Support	250	0	0	0	0	0	250	0	250
Local Consultants (25 days @ \$50)	500	0	750	0	1,000	0	2,250	0	2,250
Enumerators & logistic support	1,000	0	0	0	1,250	1,250	2,250	1,250	3,500
<b>SUBTOTAL I.</b>	<b>8,450</b>	<b>30,150</b>	<b>5,950</b>	<b>26,700</b>	<b>5,150</b>	<b>13,250</b>	<b>19,550</b>	<b>70,100</b>	<b>89,650</b>
<b>II. EVALUATIONS</b>									
Consultants	0	0	5,000	1,500	5,000	1,500	10,000	3,000	13,000
Travel/Per Diem	0	0	2,500	1,000	2,500	1,000	5,000	2,000	7,000
Admin/Report Cost	0	0	750	0	750	0	1,500	0	1,500
Midterm/Final Eval	0	0	1,500	0	2,000	0	3,500	0	3,500
Local fees, per diem									
<b>SUBTOTAL II.</b>	<b>0</b>	<b>0</b>	<b>9,750</b>	<b>2,500</b>	<b>10,250</b>	<b>2,500</b>	<b>20,000</b>	<b>5,000</b>	<b>25,000</b>

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FORMAT 6: ESTIMATED COUNTRY (GUATEMALA) PROJECT BUDGET

	Year 1		Year 2		Year 3		Total		Total
	AID	IEF	AID	IEF	AID	IEF	AID	IEF	
III. INDIRECT COSTS (See 6 & A line item)									
IV. OTHER PROGRAM COSTS									
A. PERSONNEL									
1. Project Director (50%)	19,500	0	21,500	0	22,500	0	63,500	0	63,500
2. Project Coord. Fringe (25%)	30,000 7,500	0 0	26,000 6,500	5,000 1,250	27,000 6,750	5,000 1,250	83,000 20,750	10,000 2,500	93,000 23,250
3. NutriAtol Coord.	2,000	0	3,640	0	4,960	0	10,600	0	10,600
4. Garden Leader	3,850	0	4,160	0	5,760	0	13,770	0	13,770
5. Admin. Assist.	700	0	2,080	0	2,550	0	5,330	0	5,330
6. Promoters (8)	5,500	0	12,500	0	16,200	0	34,200	0	34,200
SUBTOTAL IV. A.	69,050	0	76,380	6,250	85,720	6,250	231,150	12,500	243,650
B. TRAVEL AND PER DIEM									
1. Short-term									
Local staff per diem	2,500	0	4,000	0	5,500	0	12,000	0	12,000
Local staff travel	500	0	550	0	600	0	1,650	0	1,650
2. Long-term									
Project Coordinator Relocate (rt air)	650	0	325	0	800	0	1,775	0	1,775
Shipping	0	0	0	0	1,000	0	1,000	0	1,000
Subtotal IV. B.	3,650	0	4,875	0	7,900	0	16,425	0	16,425

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FORMAT 6: ESTIMATED COUNTRY (GUATEMALA) PROJECT BUDGET

	Year 1		Year 2		Year 3		Total		Total
	AID	IEF	AID	IEF	AID	IEF	AID	IEF	
<b>C. Other Direct Costs</b>									
<b>1. Vehicle Operat.</b>									
Fuel	3,000	0	4,500	0	5,500	0	13,000	0	13,000
Maint./Spares	1,228	0	3,000	0	3,500	0	7,728	0	7,728
Ins/Lic/Reg	0	1,500	0	1,600	0	1,700	0	4,800	4,800
<b>2. Motorcycle Oper.</b>									
Fuel	400	0	800	0	1,000	0	2,200	0	2,200
Maint./Spares	400	0	600	0	800	0	1,800	0	1,800
Ins/Lic/Reg	0	300	0	325	0	350	0	975	975
<b>3. Office Operations</b>									
Office Rent	2,150	0	2,600	0	3,000	0	7,750	0	7,750
Telephone	100	200	150	500	150	600	400	1,300	1,700
Postage/Courier	150	0	250	0	300	0	700	0	700
<b>4. Training Sessions</b>									
Per Diems	1,000	0	1,000	0	1,000	0	3,000	0	3,000
Supplies	500	0	500	0	500	0	1,500	0	1,500
Facilities	500	0	500	0	500	0	1,500	0	1,500
Subtotal IV. C.	9,428	2,000	13,900	2,425	16,250	2,650	39,578	7,075	46,653
SUBTOTAL IV. A.B.C.	82,128	2,000	95,155	8,675	109,870	8,900	287,153	19,575	306,728
SUBTOTAL	90,578	32,150	110,855	37,875	125,270	24,650	326,703	94,675	421,378
G & A 21.9%	19,836	2,398	24,277	5,075	27,434	5,398	71,547	12,871	84,418
TOTAL	110,414	34,548	135,132	42,950	152,704	30,048	398,250	107,546	505,796

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## SECTION I. DIP SUSTAINABILITY STRATEGY

I.1 The communities chosen for the project were those with an interest in the project interventions and a functioning Development Committee. The selection of the CHVs by the local leaders and community will help assure that the communities' interests will be reflected, and that the CHV will be supported in her work. Local leaders will be contacted regularly by the Promoters to discuss project and community concerns. During one of the meetings data on the area participation at the most recent mini-campaign will be presented for comments. Community participation will be monitored primarily by the participation during the mini-campaigns and coverage of services. Other support for project activities will be assessed informally during meetings with local leaders and the Development Committee. Additional community-expressed needs will be assessed, and if appropriate, incorporated into future training for the Promoters and CHVs. It is also anticipated that support of project activities will be reflected in requests for additional CHVs and from other neighboring communities to be included in the project. Participation of local leaders in the development of the DIP has been limited to informal informational meetings.

I.2 Project staff have been identified and met with key staff representing the Ministries of Health, Agriculture, and Education, and other development agencies. The key staff are:

### Ministry of Health

Regional	Dr. Hector Armando Ponce Morales	Regional Dir.
Coban	Dr. Roderico Monzon Arroyo	Area Chief,
	Lic. Leticia Juarez de Vargas	Area Nurse,
	Dr. Raul Ponce Ramirez	Hospital Dir. Coban
	Dr. Julio Enrique Rosales	Dir. of Health Ctr.
	Lic. Ana del Carmen de Lopez	Professional Nurse
Carcha	Dr. Jose Hernandez	Dir. of Health Ctr.
	Lic. Floridalma Bailon	Professional Nurse

### Ministry of Education

Regional	Lic. Cesar Augusto S. Juarez	Reg'l Dir. North Zone
	P.C. Elizardo Guzman	Administrator
Coban	Erick Barrientos	Educ'l Coord. Teacher
Chamelco	Ricardo Rey	Educ'l Coord. Teacher
Cristobal	Rene Cardoza	Educ'l Coord. Teacher

### Ministry of Agriculture

Regional	Otoniel Gamboa Javier	Tech. Reg'l Dir.
Carcha	Zoel Sierra	Extensionist Direc.
Chamelco	Luis Sierra	Sub-Dir. Reg. II-II

The DIP has been discussed with Ministry personnel to review areas where coordination is anticipated. Where possible, the project will schedule mini-campaigns with the MOH in those areas

where existing mobile EPI activities are currently established. The Project Director and Project Coordinator will request a formal letter of understanding outlining inputs of the IEF project and of the MOH for the purpose of establishing the mini-campaigns. In addition a list of candidates representing the MOH, MOA, MOE, to be included in training in the project interventions will be requested by April. There is no financial exchange anticipated between the Ministries and the project. Where appropriate, the project will assist each Ministry with supplies (vitamin A capsules, seeds). The ASECSA, was contracted by the project to help design and conduct the initial training for the Promoters. No other in-country agencies were contracted to develop the DIP.

I.3 The IEF would like to establish as an outcome of the project an infrastructure for the delivery of services assisted by a simple health information system. The service delivery strategy utilizing CHVs as the primary link to the community can be utilized for the delivery of a variety of health services. It is hoped that the MOH and the staff from the NCBBD Regional Eye Hospital in San Pedro Carcha, can improve their coverage and effectiveness of existing services by adopting a similar system within their existing program activities with selection of CHVs by their own communities, it is hoped that demand for services will increase.

Additional training for Ministry staff on vitamin A nutrition and horticulture, will provide key staff with a better understanding of the importance of vitamin A strategies (short-term supplementation, medium-term fortification, and long-term production and nutritional improvements) and incorporate aspects into their training curricula. The project will also work with the MOH to improve its supply of essential commodities (vitamin A capsules), and improve their capacity to conduct evaluation. With the development of simple formative research activities (focus groups) and the development of a social marketing strategy model, it is hoped that participating Ministries can utilize the same or a similar model for their purposes. The project will also have a better understanding of food fortification issues and its role in a service delivery project.

To achieve sustainability, the project will increasingly improve its relationships with local Ministries through training and incorporation of vitamin A nutrition and food production into their agendas. By the establishment of a field office in Coban and the employment of full-time project staff, the NCBBD will gain additional experience and capacity to design and manage community-based programs. The NCBBD (Eye Hospital in San Pedro Carcha with assistance from Guatemala City) will assume increasing responsibilities for the recurrent costs of the project (salaries, transport, commodities). It is also hoped that the San Perdo Carcha Eye Hospital will expand its primary

eye care outreach activity into the project area. With experience gained from such a program, specific elements (community programming and ocular epidemiology) can be incorporated into the Robles Hospital Residency program.

It is understood that the NutriAtol component alone is likely to be insufficient to redress chronic vitamin A deficiency in the population and is understood not to be a sustainable intervention due to costs. However, further assessment of and a similar commercialized product "Vitatol" will provide a better understanding of the potential for production and promotion of a product that can be sold commercially at local area markets.

I.4 There are no cost recovery plans anticipated for the project. It is considered that the community is providing a contribution through the CHVs and their time taken in which to conduct meetings and participate in field extension days. While vitamin A capsules and nutrition education do not lend themselves to cost-recovery mechanisms, the project will establish a small revolving fund for seeds and will ask for community support in the form of tools if communities decide they wish to establish additional and larger community gardens.

The possibility of marketing NutriAtol or its nearest equivalent "Vitatol" as a consumer product will be considered to determine consumer demand, as well as supplier production and availability. Funds generated by the sale of either product, possibly to support a CHV, could be addressed at the MTE through assistance of a marketing consultant.

I.5 The NCBBD has in the past three years begun to gain experience in community-based programs through earlier nutrition projects and through nutrition, applied research, and onchocerciasis projects currently underway. The establishment of a part-time Director has only been established since late 1990. It is expected that the NCBBD will increasingly assume recurrent costs for existing programs. However, it is anticipated that further assistance will be required in the future.

**Appendices:**

1. Map
2. List of Communities
3. Letter of Support
4. NutriAtol Composition
5. MIS Monthly Reporting Form
6. Task Descriptions



## APPENDIX 2, LIST OF COMMUNITIES

AREA 1	NO. OF FAMILIES	POPULATION	NO. UNDER SIX
Lama	62	350	
Chitepet	210	1200	
Chamil	877	5000	
Candelaria	210	1200	
San Marcos	160	908	
Chirrecop	43	240	
Cacchibal	210	1200	
Santo Tomas	*	*	
SUBTOTAL:	<u>1,772</u>	<u>10,098</u>	<u>2,020</u>
AREA 2	NO. OF FAMILIES	POPULATION	NO. UNDER SIX
Tzunutz	60	342	
Tipulcan	97	550	
Chizon	44	250	
Esperanza	44	250	
Sehubub	70	400	
Secochoy	88	500	
Chinasis	63	360	
Caquipec	123	700	
Chirrukquin	63	360	
Semesche	94	540	
Chicacnab	88	500	
Sequila	63	360	
Charmal	114	650	
SUBTOTAL:	<u>1,011</u>	<u>5,762</u>	<u>1,152</u>
AREA 3	NO. OF FAMILIES	POPULATION	NO. UNDER SIX
Chiyo	190	1080	
Chitana	105	600	
Chimo	74	420	
Caquiton	*	*	
Pocola	105	600	
Chiquixji	131	750	
Rubeltem	48	270	
Chamtaca	274	1560	
Quixal	131	750	
SUBTOTAL:	<u>1,058</u>	<u>6,030</u>	<u>1,206</u>
AREA 4	NO. OF FAMILIES	POPULATION	NO. UNDER SIX
Guaxcuz	34	197	
Pamboncito	30	176	
Aldea Rancho	230	1336	
Chivorrón	115	657	
Mexabaj	69	396	
Pampache	49	280	
Pambon	26	152	
Pamuc Bella Vista	43	250	
La Providencia	89	508	
Quixal	21	125	
SUBTOTAL:	<u>706</u>	<u>4,077</u>	<u>815</u>
TOTAL:	<u>4,547</u>	<u>25,967</u>	<u>5,193</u>

Unverified Ministry of Health Data  
 \*Information Unavailable

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# PRESIDENCIA DE LA REPUBLICA

GUATEMALA, C A

ING JORGE SERRANO ELIAS

Guatemala, febrero 26 de 1991.  
PRES-0052/91

Dra. Señora  
Elisa Molina de Stahl, Presidente  
Comité Nacional Pro Ciegos y  
Sordos de Guatemala  
9a. Calle 3-07, zona 1  
Ciudad.

Estiamda Señora de Stahl:

Verdaderamente fue un gusto recibirlos el 21 de los corrientes y haber tenido la oportunidad de cambiar impresiones con ustedes.

He leído con atención el memorandum que en esa ocasión me entregaron y que describe la forma en que está integrada la Junta Directiva de ese Comité así como presenta sus diversos programas.

Siempre he admirado la labor que ustedes realizan y que sin duda alguna ha contribuido a la superación de quienes tienen el problema de la visión y la audición.

Gracias por la forma en que trabajan para nuestra Guatemala, desde luego cuentan con mi respaldo.

Cordialmente,



Jorge Serrano Elías

JK

TABLE 1.

## Breakdown of NUTRIATOL vs. INCAPARINA

The specifications for the basic product (an INCAPARINA-like atol) and for the vitamin A-rich analogue (NUTRIATOL) are shown below. INCAPARINA is a commercially-successful product made of locally-available basic ingredients (corn flour, cotton seed flour). A brief survey of urban mothers, followed up after release of their respective children from the rehydration unit of a general hospital after treatment for acute diarrhea, showed that virtually all fed some INCAPARINA as part of the convalescent refeeding regimen (Lopez, M. L.; Molina, S.: unpublished results, CeSSIAM).

Nutrient Content: per 100 g of powder

	<u>INCAPARINA</u>	<u>NUTRIATOL</u>
vitamin A	4500 IU (1364 RE)	9990 IU (3000 RE)
Niacin	13.62 mg	13.62 mg
Thiamin (B1)	1.70 mg	1.70 mg
Riboflavin	1.01 mg	1.01 mg
iron	11.20 mg	11.20 mg
calcium	305.00 mg	305.00 mg
phosphorus	68.00 mg	68.00 mg
Lysine	250.00 mg	250.00 mg

The amount of powder to be used for a serving is 20 grams. Thus each serving of INCAPARINA supplies 273 RE of dietary vitamin A activity and each serving of NUTRIATOL will supply 600 RE which represents 2.4 times the requirement of vitamin A for a 0-3 year old child and twice the requirement for a 4-6 year old according to the recommendations of FAO/WHO.



Task Description  
Project Promoter

The IEF/Guatemala Project Promoter will report directly to the Project Manager through the Project Leaders. These individuals will be responsible for supervision and support of the Community Health Volunteers in their daily activities, with duties to include:

1. Assist the Project Leaders in the training of the Community Volunteers. Specifically, the Promoters will hold regular meetings with their CHVs individually and in small groups to discuss activities including supplementation, nutrition education, and gardening.
2. Visit each assigned CHVs within 2 weeks of their initial training to encourage household register preparation and maintenance. If the register is not completed or requires maintenance the Promoter will ensure that the register is completed.
3. Conduct periodic meetings of all CHVs assigned. The Promoter will direct a 1-2 hour meeting by first conducting a health/nutrition education class. The first meeting will start within one month of the CHV training. During the meetings the Promoter will problem solve and discuss topics for future meetings. The Promoters will prepare a short checklist regarding the meeting. The checklist will include attendance, nutrition education topic(s) and any problems and topics of interest to be given to the Project Leaders.
4. The Promoter will visit each CHV 1-3 times a month. At this time the Promoters will restock commodities, and review the household register with the CHV. The Promoter will assist the CHV in assessing the adequacy of the diet of children, or mothers that failed to attend campaign services, and/or to follow up on those households with children who have experienced an infectious disease episode.
5. The Promoter will make 2-3 follow up visits with each of the CHVs in order to verify completeness of household registers, to observe nutrition education, and to verify accurateness of CHV's monthly report.
6. The Promoter will hold regular (monthly) meetings with the Development Committee and any Women' Groups to discuss project activities, conduct nutrition education, and coordinate campaign activities.
7. Maintain a working relationship with area health/extension/promotion workers representing the MOH, MOA, MOE, and other PVOs and NGOs.

Task Description  
Community Health Volunteer

The tasks to be completed by the CHV are as follows:

1. The CHV will create a register of 30-50 households in her assigned area. Children under the age of six years, their mothers, pregnant women, and infants delivered will be identified. The register will be maintained to include births, deaths, and migrations. The register will include the following information:
  - I. See Household register
2. The register will guide the CHV in her tasks. As such she will be involved in the following activities:
  - I. Provision of vitamin A, , and ORT sachets to children 0-72 months
    - a. After completion of the register, the CHV, in coordination with the Promoter (MOH and PVO personnel) administer one vitamin A dose to each child under 6 years of age who has not received it from any other source, and record receipt in the health card.
    - b. Follow up visits to children and mothers who did not attend campaigns and planned events.
    - c. Identify children experiencing diarrhea and/or ARI and provide ORT sachets and/or , and demonstrate appropriate educational messages
  - II. Provision of Vitamin A Supplementation to Mothers Within Two Months of Delivery
  - III. Investigation of Supplemental Foods Usage and provision of nutrition education
    - a. Identify whether women are exclusively breast feeding their infants (0-4 months of age).
    - b. Identify whether women are feeding their infants (4 months to 5 years) supplemental foods. Determine how many supplemental feedings are being done, and encourage 4 or more feedings per day.
    - c. If no supplemental foods are being given to the child identify whether vitamin A rich and energy dense foods are eaten by the family. If so, encourage feeding the child.
    - d. If no supplemental foods are being given to the child and vitamin A and energy dense foods are not in the family's diet encourage the addition of available vitamin A and energy dense foods to the child's diet.

- e. Identify those households with children who have experienced or are experiencing an infectious episode (diarrhea) and determine if and what mothers feed their children during and after diarrhea.
- f. Encourage mothers to continue feeding their children during and after an episode of diarrhea.

IV. Conduct Meetings

- a. Hold monthly meetings with mothers to discuss nutrition education and gardening activities.

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