

Report to  
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Honduras

Office of Rural Development

# Implementation and Impact Evaluation of PL480 Title II Program

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**IMPLEMENTATION AND IMPACT EVALUATION  
OF PL480 TITLE II PROGRAM**

Report of  
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Study Team

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to

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## EXECUTIVE SUMMARY

The United States has donated food and maternal/child health and school feeding programs under Title II of PL480. Recent adoption of the management-by-objective system by USAID/Honduras requires greater program accountability. An evaluation of the impact of PL480 Title II in Honduras was conducted by Winrock International during the spring of 1987. USAID/Honduras will use the results of the evaluation to further mission objectives and to assist voluntary agencies and the Government of Honduras improve the targeting and effectiveness of the program.

This report evaluates the impact of food that is imported by CARE (about 90%) for use in maternal/child health and school feeding programs which provide food to about 446,000 person in 16 of the 18 departments of the country. Food-for-word and refugee feeding programs, which reach approximately 10,000 people, were not evaluated.

The survey design suggested by USAID/Honduras was modified because of methodological and logistical problems. Stratified random samples of maternal/child health beneficiaries and school children were selected. Questionnaires for each sample and type of program were developed and pretested. All school children, maternal/child health and school feeding program beneficiaries, and controls were weighed and measured. Data were gathered during the last week of February and the first three weeks of March 1987. Data analysis began in the local Winrock office and was completed at Kansas State University.

Math and social science grades were positively affected by drinking the beverage prepared from nonfat dry milk and corn-soy-milk. The benefits of the beverage are greatest to the poorest children who need it the most and drink it more often than other children. There was no direct relationship between drinking the beverage and absenteeism, grade point average, weight for age, or height for age.

Women's success in childbearing and children's height for age was improved by eating the foods, either at a feeding site or at home. Public health programs were well targeted to individuals with nutritional problems. Few Junta and community programs have surveillance programs to assist in targeting.

The system of food delivery is well controlled by CARE until it reaches the program site. Sufficient problems were found at program sites to suggest that communication between the sites and government agencies, voluntary agencies, or CARE must be improved.

Recommendations included:

- The Ministry of Public Health should strengthen programs that encourage women to limit the number children they have.
- The Ministry of Public Health should strengthen communication with nutrition auxiliary personnel so that problems can be resolved more easily.

- The Ministry of Public Health should consider using a chart to record weight gain during pregnancy.
- The Ministry of Public Health program objectives should be clarified and restated.
- Junta programs should be better targeted.
- Junta objectives should be clarified and restated.
- Junta technicians should become independent of political changes.
- The Ministry of Education should increase the caloric content of the beverage.
- A longitudinal study of the impact of the beverage on attendance, grades, and growth of school children should be made.
- Community programs should be evaluated by outside evaluators or by the donor agencies to determine program impact.
- Supervision of community programs and communication with the donors should be strengthened.
- CARE supervisors should confirm that the food actually reaches program beneficiaries.
- Nutrition education should be a part of the maternal/child health programs.
- Greater use of the PL480 foods in food-for-work programs should be considered.
- The use of the foods in processed products should be considered.
- The possibility of a food production disincentive should be investigated.
- Future evaluations must use a more realistic timeframe.

Suggestions for implementing the recommendations are made when appropriate.

**IMPLEMENTATION AND IMPACT EVALUATION  
OF PL480 TITLE II PROGRAM**

**INTRODUCTION**

Under Title II of PL480, the United States donates food for humanitarian purposes to over 40 countries, most of which have per capita incomes of less than \$795 per year. The food is used primarily for maternal\child health, food-for-work, and disaster relief programs. The PL480 program has operated for almost 30 years in Honduras, bringing in about 305 millions tons of food worth approximately \$48.7 million dollars. Currently about 116,000 children and pregnant and lactating women participate in maternal/child health programs and 6,000 people in food-for-work programs. An additional 330,000 children in grades 1 through 6 receive supplementary beverages or snacks made with foods donated under PL480. Despite the magnitude of this program, few evaluations have been made, and most of those have focused on delivery of food rather than its impact on the nutritional status of the beneficiaries.

Recently USAID/Honduras adopted the management-by-objective system, which requires more program accountability than the previous system. All human resource programs must now be defined within the mission objectives. The maternal/child health and food-for-work programs seemed to fit the objectives of decreasing infant mortality and increasing life expectancy, and the school feeding program seemed to fit the objective of increasing the proportion of primary students who complete the sixth grade. Unfortunately there were no data to support these assumptions.

Winrock International was contracted by USAID/Honduras during the spring of 1987 to evaluate the impact of PL480 Title II. The results of the evaluation were to be used by USAID to further mission objectives and by voluntary agencies and Government of Honduras agencies to improve the targeting and effectiveness of the program.

**BACKGROUND**

PL480 commodities are imported into Honduras under the auspices of Catholic Relief service (CRS) and CARE. These agencies prepare annual food requests, process the paperwork, and import the food into the country. CRS transfers the food it imports (about 10% of PL480 Title II food imports) to CARITAS, an agency of the Catholic church, for maternal/child health and food-for-work programs.

The remaining food is imported by CARE for use in maternal/child health, school feeding, food-for-work, and refugee feeding programs in 16 of the 18 departments. The Bay Islands and Mosquitia are excluded from the program because transporting the food to these areas is difficult and few potential beneficiaries live there. The food-for-work and refugee feeding programs provide food for about 10,000 people.

School feeding programs are managed jointly by the Ministry of Education and CARE. CARE transports the food from the dock to the ministry's warehouses and has developed an extensive system to ensure that the food is delivered to the schools and is properly stored. Recipes for using the foods in nutritious snacks are provided to each school. About 330,000 of the country's 750,000 schoolchildren receive food under this program. Most of the others receive milk from the European Economic Community. So between the two programs almost all children attending public school in Honduras receive a nutritional supplement at school.

The objective of the program is to improve school attendance, thereby helping achieve the USAID mission's objective of increasing the proportion of children who complete the sixth grade. A ration of 1.5 lb of nonfat dry milk and 2.5 lb of corn-soy-milk (CSM) per month is allocated for each student. Depending on a child's age, this food provides the following proportions of daily nutritional requirements (see table 1):

Calories	8% to 10%
Protein	27% to 33%
Calcium	89% to 130%
Iron	70%
Thiamine	40% to 50%
Riboflavin	43% to 54%
Niacin	19% to 24%
Vitamin C	80%

Table 1. Nutrients provided by the school feeding program.<sup>1</sup>

	Age 7-9 years	% of daily rqmts.	Age Males V10-12	% of daily rqmts.	Age Females V10-12	% of daily rqmts.
Kcal	2050	10	2500	8	2250	9
Protein <sup>b</sup>	39	33	48	27	47	28
Calcium	450	130	650	89	650	89
Iron	10	70	10	70	10	70
Thiamine	0.8	50	1.0	40	0.9	44
Riboflavin	1.1	54	1.4	43	1.1	50
Niacin	13.5	24	16.5	19	14.8	22
Vitamin C	20	80	20	80	20	80

<sup>a</sup>WHO/FAO recommendations.

<sup>b</sup>60% utilization.

The food is usually prepared as a beverage or snack. It is available to any child who wants to participate. Priority is given to preschool children, rural children, and children in grades 1 to 4, on the assumption that they are at greatest risk of malnutrition.

The maternal/child health program is more complicated. There are two basic types of programs: take home and on site. The objective of both programs is to improve the nutritional status of children under age 6 and of pregnant and lactating women. The take-home program is administered by the Ministry of Health, primarily through regional health centers (CESAMOs) and smaller area centers (CESARs). Each CESAMO has a physician in charge; CESARs are run by auxiliary nurses. In the CESAMOs, the physician refers people to a auxiliary nutritionist or social worker who administers the program. In the CESARs, the auxiliary nurse often sees the patients and distributes the food. All family members who meet the criteria are eligible for food. Each beneficiary receives 2.5 lb of nonfat dry milk, 2.5 lb of rice, 2 lb of wheat flour, and 2 lb of soy oil per month. Most beneficiaries pay 50 centavos per distribution to help pay for the transportation costs from the CARE warehouse to the health center and for the plastic bags in which the food is distributed.

The Junta Nacional de Bienestar Social (National Welfare Board) or "Junta" distributes food for its programs and those run by various government or private voluntary agencies. Most of the Junta programs use feeding centers (lactarios) run by local homemaker clubs. These centers usually provide one meal a day to all eligible women and children in the community. The PL480 food is often supplemented by food donated by other community organizations or by club members. Each participant is allotted 2.5 lb of milk, 2.0 lb of CSM, 2 lb of rice, 2 lb of wheat flour, and 1 lb of soy oil. This food provides 23% to 59% of the FAO recommended dietary allowance for calories, depending on the age of the recipient (see table 2). This food is a nutritious supplement for children. It provides them with less than two-thirds of the FAO recommended daily allowance for niacin and calories but at least that much of protein, calcium, iron, thiamine, riboflavin, and vitamin C. It is not as good a supplement for pregnant or lactating women. They receive two-thirds or more of their requirement for calcium and riboflavin only. Lactating women also receive 86% of their vitamin C requirement. Caloric supplementation is particularly low, 23% to 25%, in light of the knowledge that caloric supplementation, especially during the last trimester, is positively related to birth weight of the infant.

Centers run by other community organizations receive the same commodities but their programs vary significantly. Some are daycare centers for the children of working women, some are strictly feeding centers run by church groups, some are run by national or international organizations, and some are run by local clubs or organizations. The number of meals and snacks varies according to the amount of outside support a center receives. Some centers are closely supervised by their sponsors; others receive only CARE supervision.

Table 2. Nutritive value of the Junta and community program foods by percentage of recommended daily allowance.<sup>a</sup>

Nutrient	Preg- nant	Lactat- ing	6-8 months	9-11 months	1 year	2 years	3 years	4-6 years
Energy, Kcal	25	23	62	59	53	45	39	35
Protein, g <sup>b</sup>	41	36	138	124	103	89	83	75
Ca, Mg	76	76	15	152	186	186	186	186
Iron, Mg	24	23	67	67	67	67	67	67
Thiamin, Mg	60	60	150	150	120	120	120	86
Riboflavin, Mg	77	71	200	167	167	143	111	100
Niacin, Mg	30	27	75	70	63	53	47	41
Vitamin C, Mg	6	86	74	74	74	74	74	74

<sup>a</sup>WHO/FAO recommendations

<sup>b</sup>60% use

Because of the diversity of the programs' objectives and delivery, we had to conduct three separate evaluations. We found that school feeding programs do have a positive impact on attendance, academic performance, and nutritional status. As the child's nutritional status improves, so does his learning performance. The food is most beneficial when sufficient amounts are consumed regularly. Take-home feeding programs, such as the public health program, have difficulties assuring that the food is actually consumed by the beneficiaries. Most programs assume that at least some portion of the food is consumed by all family members. The true amount of sharing is difficult to ascertain because beneficiaries fear they will be removed from the program if they are truthful about who consumes the food. Many of the Junta and community programs supplement the PL480 food with fruits, vegetables, or meats donated by agencies or community organizations. This makes it difficult to determine the nutritional contribution of the PL480 foods to the total diet.

The best way to measure the impact of any feeding program is to measure growth over time. A point-prevalence study can determine how the program functions at one point in time and makes inferences about the causes. This type of study requires a large sample size to compensate for sampling error. A control group is essential in a point-prevalence study. The controls should be similar to the beneficiaries except for program participation.

#### EVALUATION OBJECTIVES

USAID/Honduras developed the following objectives for the evaluation:

1. to assess the program's efficiency; that is, to learn how well the program planned and applied strategy, objectives, and targeting

mechanisms and managed available resources, including coordinating, and monitoring of activities undertaken

2. to assess the impact of the school feeding program on a) school enrollment, b) school attendance (average attendance in selected schools during months of high and low attendance -- March and June), and c) annual retention rates (initial versus final enrollment)
3. to assess the impact of the maternal/child health subprogram on the demand for health center services and on the nutritional status of beneficiaries as reflected by anthropometric indicators
4. to assess the adequacy of the nutritional composition of rations for overcoming nutritional deficiencies
5. to assess the impact of the food-for-work activities on the socio-economic development of the family and community, particularly on producing food, developing community health facilities, and improving the communal standard of living
6. to assess the cost effectiveness of the Title II program, which must include a calculation of the per capita cost of the food served or the cost per ration distributed

The plan of work was specific about the survey design and sample selection (see appendix 1). The evaluation was to include a field survey of beneficiaries from all three maternal/child health programs and the school feeding program with a control group for each. A stratified random sample was to be drawn so that the data could be stratified by magnitude of malnutrition, rural/urban residence, sex, length of participation in the program, and degree of efficiency of program management. Anthropometric measurements were to be made of all participants and controls. Control communities were to be selected in the vicinity of program communities.

## **METHODOLOGY**

At the beginning of the study we assumed that the CARE system for delivering the commodities from the port to regional warehouses or distribution points was well controlled and that the commodities were reaching the intended program sites. Therefore, we concentrated on the end user of the commodities. The questions we wanted to answer were

1. Are the beneficiaries the group targeted by the respective agencies?
2. Do the intended beneficiaries actually receive the commodities?
3. If so, what impact do the commodities have on the nutritional status of the beneficiaries?

## Sample Selection

Sample selection was divided into the following five stages:

- Stage 1, departments. All departments were eliminated that had less than 1% of the total program beneficiaries or lacked one or more of the programs. The departments that were dropped were Colon (1% and public health programs), Intibuca (4% and no community programs), Ocotepeque (.5% and public health programs), Copan (1%), and Islas de la Bahia and Gracias a Dios (no PL480 Title II programs).
- Stage 2, departments. Choluteca and Valle were selected because they had the highest anticipated degree of malnutrition, and Atlantida and Cortes were selected because they had the lowest. Francisco Morazan was selected to assure a large urban sample. From the remaining departments, the two with the greatest geographic diversity and concentration of beneficiaries were selected: El Paraiso and Choluteca.
- Stage 3, municipalities. Municipalities within each department that had all of the maternal/child health programs and the school feeding program were eligible for selection. The first municipality in each department was selected, if it qualified; one to three other municipalities were randomly selected, depending on the required sample size.
- Stage 4, programs. Programs were chosen randomly from the eligible municipalities. The number of programs selected from each agency was proportional to the number of that agency's programs in the department.
- Stage 5, beneficiaries. The size of the sample from each department was proportional to the percentage of program beneficiaries in the department. The average size of each program was calculated and then divided by the number of interviews required in each program to determine the interval between beneficiaries on the program list. Every nth person (determined by interval size) was then interviewed.

Methodological problems that affected the survey design and sample selection were as follows:

- no baseline data
- lack of clearly defined objectives for each program
- lack of clearly defined indicators of program success
- lack of control group for the school
- multitude of maternal/child health programs
- lack of CARITAS program data at the national level
- large number of breakdowns and variables requested
- unrealistic time frame

Additional problems encountered in the field that affected the survey included the following:

- length of time required to reach isolated centers
- need to return to schools or programs that were not in session on original day of visit
- program changes or suspensions of which we were not aware
- lack of data in the schools for transfer students
- lack of data on days of actual school session

Because of these problems the original survey design was modified. CARITAS programs, which were evaluated in May 1985, were eliminated from this evaluation. Since schools without feeding programs were scarce, the controls were children who did not drink the beverage provided by the program. The sample size was reduced by one-third (from 600 plus 300 controls to 600 including controls).

### Questionnaire Design

Two basic questionnaires were designed: one for maternal/child health program beneficiaries (see appendix 2) and one for school feeding program beneficiaries (see appendix 3). The questionnaire used for the controls consisted of the demographic/socioeconomic and anthropometric sections of the maternal/child health program questionnaire. Health questions focused on where beneficiaries received medical assistance, the frequency of children's diarrhea and colds, what immunizations the children had received, if the mothers had received a tetanus immunization, and how many times a family member had visited the health center since the beginning of the year (about 2 months). Women were asked about the number of pregnancies they had experienced and the outcome of those pregnancies. Socioeconomic indicators included types of water source, sanitary service, floor material of the house, cooking facility, transportation owned, and household goods (radio, sewing machine, radio/cassette recorder, television owned). Beneficiaries of the public health program were asked how long they had participated in the program, what they believed its benefits were, how they used the foods, and which foods they preferred. All of the donated commodities on hand at the time of the interview were weighed. Beneficiaries of the Junta and community programs were asked about program participation, benefits, and additional foods they ate at a feeding center.

The school feeding questionnaire contained the basic demographic questions and specific questions relating to that program. Children and their mothers were asked separately what were the benefits of the beverage and how often the children drank it. Each child's grades and number of days absent during the previous school year were recorded directly from school records.

Three additional questionnaires were prepared -- one each for Junta and community programs (see appendix 4), schools (see appendix 5), and public health centers (see appendix 6). Information on size, operation, costs, and benefits of the program were recorded on these forms.

## Testing

The questionnaires were tested in a rural community near Tegucigalpa. They were modified at that time and after the interview training. Fidel Barahona Lopez, director of the national nutrition survey that was being conducted at the same time, also reviewed the questionnaires.

## Interviewers

Eight experienced interviewers were provided through a subcontract with ADAI. Training for this survey consisted of discussions of the objectives of the survey, discussion of each question, role playing, field training, instruction in coding, and training in weighing and measuring children and adults. (As part of the anthropometric training, the interviewers each weighed four children and two adults; then they compared their results with each other's and the trainer's). Each interviewer received a copy of the study protocol (see appendix 7).

## Data Collection

Data were gathered the last week in February and the first three weeks in March of 1987. (See appendix 8 for communities and departments visited). Data collection began in Choluteca, where it was hoped that the commodity distribution for the school program had begun; however, none of the schools in the survey received food before the interviews. Data collection continued in Valle, then in the north and the west. Tegucigalpa was the last area surveyed. Data was collected by two teams of experienced interviewers. The supervisor of each team interviewed the person in charge of the school or center, explained the study, and received permission to interview beneficiaries. Schoolchildren were interviewed, weighed, and measured at the school. The interviewers accompanied the children to their homes to interview the mothers. Public health, Junta, and community beneficiaries were identified from lists at each center. Usually the beneficiaries were not at the center and the interviewers had to go to their houses. This was time consuming since the surveyors had to cover large distances in the rural areas and received inaccurate directions in the cities.

Anthropometric measurements were made at the time of the interview. Two of the days that data was collected in Tegucigalpa were food pickup days at the clinic. About one-third of the beneficiaries were at the clinic and were interviewed there.

## Controls

The control group was recruited by going from house to house in control communities. These communities were selected because they had no more than one of the programs being evaluated. Since the food assistance programs are targeted to the poorest communities, those communities that received no food assistance were assumed to be better off economically than communities that did receive it. We attempted to overcome this bias by dividing each control community into four quadrants. Interviewers began on the outer edge of each quadrant, where we expected to find the poorest families, and moved inward, interviewing a resident

at every third house that had a pregnant or lactating woman or a child under 5 years of age.

### Data Analysis

Data were coded in the field by the interviewers and by Dr. Smith. Further coding was done in Winrock's local office. Data were entered on IBM-compatible computers using a Wordstar nonformatted document. The data tapes were cleared and preliminary analysis was done at the Winrock office. The Statistical Package for the Social Sciences program for personal computers (SPSS/PC) was used for all data analysis. Final data analysis was done in Dr. Smith's office at Kansas State University. Statistical analysis began with frequencies, cross tabulations using the chi-square statistic, and t-tests followed by correlations and regression equations.

### SCHOOL FINDINGS

A total of 201 children and their mothers (or primary caretakers) were interviewed as follows:

<u>Region</u>	<u>% of sample</u>	<u>Department</u>
Southern	45.8	Cholulteca Valle
Western	25.4	Olancho El Paraiso
Northern	16.9	Atlantida Cortes
Urban	11.9	Francisco Morazan

The number of schoolchildren sampled from each region was proportional to the number of beneficiaries in each region. Only three of the eight schools sampled were in urban areas, and two of these were in the south, resulting in a sample of 53.2% urban students -- higher than the national proportion of 37% urban. Distribution by sex was almost equal: 50.7% males to 49.3% females.

First, data were analyzed to determine whether there were any unexpected differences due to region of the country, rural/urban residence, or sex. The relationships were examined between drinking the beverage and school grades, being in the correct grade for age, nutritional status, socio-economic indicators, and family variables. The relationships were then re-examined controlling for sex and rural/urban residence. Further analysis examined the effect of drinking the beverage on school attendance, grades, and anthropometric measurements. An attempt was made to explain the variance in school attendance, grade point average, weight for age, and height for age. Because most of the children in the first grade had not had an opportunity to drink the beverage, they were eliminated from cross tabulations that used drinking or not drinking the beverage as one of the variables.

## Descriptive Findings

### Malnutrition

Slightly over one-fourth (27.8%) of the schoolchildren were "stunted" -- less than 90% of the recommended height for age. Only 2.6% were "wasted" -- less than 80% of the normal weight for their height. Three children were both stunted and wasted. Stunting, or low height for age, is an indicator of past nutritional deprivation while wasting, or low weight for age, indicates current malnutrition. A child who is both stunted and wasted is chronically and currently malnourished. Therefore, although about one-fourth of the children had been malnourished in the past, only 2.6% were currently severely undernourished, and only 1.6% were both chronically and currently malnourished.

### Nonsignificant Findings

Of the 201 schoolchildren surveyed, 72% drank the beverage most of the time. When the first graders were eliminated from the subsample, 76.4% of the students drank the beverage. There were no significant differences between the drinkers and nondrinkers based on rural/urban residence, sex, grade in school, number of days absent the previous year, height for age, weight for age, science grade, Spanish grade, literacy of mother, mother working outside the home, father living in the home, number of persons living in the house, source of water, sanitary service, floor material of house, cooking facility, mother belonging to a homemaker club, or mother receiving nutrition information. Neither sex of the student nor rural/urban residence had any effect on these variables.

### Rural/Urban Differences

There were some regional differences that were consistent with nutritional status. The largest number of children who were malnourished (that is, below normal weight or height for their ages) were found in the west. The largest proportion of children who drank the beverage -- 95.6% -- also was found in this region. The north had the lowest amount of malnutrition and the fewest beverage drinkers: 52.2%. Rural children were older than their urban counterparts but the urban children were heavier. Urban families rated higher on the socioeconomic index. More mothers of urban schoolchildren worked outside the home, which may account for the weight and socioeconomic findings. There were no other sex or rural/urban effects.

### Beverage Drinkers versus Nondrinkers

Children who were behind the grade for their age were more likely to drink the beverage than other children. This difference was especially pronounced in urban children. These children tended to be more undernourished and from poorer families than children who were in the correct grade for their age. They were older, shorter, weighed significantly less, and came from larger households than the normal group. They also were absent from school more frequently during the previous year. There

were no significant differences between sexes, although females who were behind the grade for their age tended to drink the beverage more often than males.

Drinking the beverage was positively associated with math and social studies grades but not with science or Spanish grades. On a scale of 1 to 5, where 1 was the lowest grade and 5 the highest, children who drank the beverage had significantly more 4s and fewer 2s than those who did not drink it. This was even more pronounced in the rural areas, where children who drank the beverage had the best grades and those who did not had the worst. There were significant differences among the boys but not the girls. None of the males with the lowest math grade drank the beverage while more than expected with 4s or 5s did. Social studies grades were similarly associated with drinking the beverage. Significantly more of those with 2s did not drink it. This pattern was the same for both sexes and for both rural and urban residents.

Children from homes with no household goods (radio, sewing machine, radio/cassette recorder, television) were most likely to drink the beverage (97.1%). In contrast, only 63.8% of those from homes with televisions drank it. This association was particularly strong in the urban areas, where all of the children from homes with no household goods and 85% of those from homes with only a radio drank the beverage versus only 47.1% of those from homes with television sets. These findings were the same for boys and girls.

Although 76.6% of the children said they drank the beverage and 84% of their mothers said they did, the correlation between what a child reported about himself and what his mother reported he did was only .47. A cross tabulation of children's responses with their mothers' revealed even greater disagreement. These findings were not affected by sex or rural/urban residence.

#### Nutrition Education

Children whose mothers received nutrition information from a homemaker club were much more likely to drink the beverage than those whose mothers did not participate in such clubs. Families of schoolchildren participated in very few other feeding programs. Only 1.5% participated in the public health program, 4% in Junta programs, 8% in community programs, and 2% in food-for-work programs.

#### Perceived Benefits

Children and their mothers perceived the same benefits from the program. The most important benefits to both groups were nutritional or health benefits. Overall, 59% of the children and 70% of their mothers cited nutrition, health, growth, or development benefits of the program. Greater desire to study was important to 16% of the children and 11% of the mothers. Happiness or a greater desire to play was cited by 15% of the children. Other reasons cited by both groups related to hunger, economics, or flavor. Of both the children and the mothers, 6% said that they received no benefit from the beverage. The reasons that the children did not drink the beverage were overwhelmingly related to

diarrhea, stomachache, or other illness. Again, children and mothers were in agreement. Flavor was the second-most cited reason for not drinking the beverage.

### Statistical Findings

We attempted to explain differences in the number of days absent the previous year, grade point average, weight for age, and height for age with the predictors drinking the beverage, present grade level, correct grade for age, height for age, weight for age, and grades attained the previous year for math, science, social studies, and Spanish. Each regression equation included a dependent variable (such as days absent the previous year) with appropriate predictors (such as drinking the beverage, current grade level, weight for age, height for age, and the four grades from the previous year). The only significant relationships were the expected direct relationships between days absent and grades and between weight for age and height for age. Drinking the beverage was most positively associated with grade point average and was positively associated with number of days absent, weight for age, and height for age. However, these associations were not significant; therefore, any differences in absenteeism during the previous school year, grade point average, weight for age, or height for age were not related to drinking the beverage.

### Conclusions

#### Impact

We found that math and social studies grades were positively affected by consumption of the beverage and that the children who need the nutrition supplement the most are drinking it. The benefits of the beverage seem to be greatest to this group. We did not find a direct relationship between drinking the beverage and school attendance, overall grades, or growth.

#### Targeting

Although the beverage is available to all schoolchildren, it is consumed more often by children who have the greatest need for it: children who are more likely to be malnourished, who are in lower grades than they should be for their ages, and whose families have few household goods. Benefits seem to be greatest for groups that have the greatest need; that is, for those who are behind the grade for their ages and who live in rural areas. Drinking the beverage may have a beneficial effect on the cognitive skills needed for learning mathematics or social studies.

#### Perceived Benefits

Although the beverage could not be shown to directly affect growth, absenteeism, or grade point average, most mothers and children who participated felt the beverage made the children healthier or improved their school performance.

## MATERNAL/CHILD PROGRAMS

The sample included 237 program beneficiaries and 150 controls randomly selected from the areas of estimated high and low malnutrition and from rural and urban areas (see table 3). Of those surveyed, 77.8% were children, 10.1% were pregnant women, and 12% were lactating women. The children were almost evenly divided between males (50.8%) and females (49.2%).

Table 3. Distribution of sample by program and rural/urban residence.

Program	Rural		Urban		Total	
	%	N	%	N	%	N
Public health	32.6	28	67.4	58	22.2	86
Junta	98.9	86	1.1	1	22.5	87
Community	37.5	24	62.5	40	16.5	64
Control	67.3	101	32.7	49	38.8	150
Total	61.8	239	38.2	148	100.0	387

## Descriptive Findings

### Malnutrition

Almost half of the children were normal (48.9%). Only one case of third-degree malnutrition was found -- a child in one of the community programs. This case was included in the second-degree malnourished group for analysis. There were significant differences in nutritional status among participants in different programs. Public health programs had more first- and second-degree malnourished and fewer normal children than did the other programs. Regional differences were as expected. More children were normal and fewer had first-degree malnutrition in the northern departments of Cortes and Atlantida. The southern departments of Choluteca and Valle had 49% normal children and only 34% first-degree malnourished -- only in the north were fewer cases of first-degree malnutrition found. In contrast, the western departments of Olancho and El Paraiso had 13% second-degree and 51% first-degree malnourished participants.

### Rural/Urban Differences

All findings were controlled for rural or urban residence. Beneficiaries who lived in the major city of a department, such as Choluteca, Nacaome, San Pedro Sula, or Tegucigalpa, were classified as urban residents. All others were classified as rural. Approximately one-third of the sample (38.2%) was urban and two-thirds (61.8%) was rural; was rural; the Junta sample was almost entirely rural (98.9%). The rural and urban participants were expected to have differences in access to

services such as hospitals and public transportation. There were no differences between rural and urban respondents in the number of times they had visited a public health center during the previous 3 months, although it took rural women an average of over an hour to reach a clinic compared to about 40 minutes for urban women. There were no differences in weight for age or height for age between rural and urban children. Other rural/urban differences are discussed in the following sections.

### Controls

In general, the control group was better educated and had better housing conditions than the sample groups. There were no differences between program beneficiaries and controls for sex of the child, father living in the house, recent episodes of diarrhea, number of children small at birth, or number of children who died before their first birthday. Public health and Junta beneficiaries were most similar. The community program participants and the controls were more similar to each other than to the other two groups. This may be partially explained by the large number of mothers of children in community programs who worked outside the home and thus contributed to family income. The average ages of the public health children and the control children were almost the same (49 months and 47 months respectively). Children in the Junta and community programs sometimes included children up to age 7, or even older, while the public health programs were more likely to include children in the program for 1 year or until they reached age 6.

### Literacy

Approximately 85% of the sample said they were literate. Illiteracy was much higher in the rural areas, especially in the public health and Junta programs, where approximately 25% to 30% of the sample said they could not read. In contrast, all of the urban community program sample and 95% of the urban controls could read.

### Women's Occupations

Although 83.7% of all women surveyed said they were primarily housewives, there were significant differences by program and area of residence. Some of the differences were due to the composition of the sample: two large community programs were sampled that care for children of low-income working mothers. As a result, 50% of the women in the community sample worked outside the home whereas only 3.4% to 16% of the women in the other samples did so.

### Household Composition

Rural households were significantly larger than urban households (see table 4). However, there were no other differences in household size related to program, mother or child beneficiary, mother working, father living in the house, protein-calorie malnutrition, child with diarrhea the previous week, or family food production. The father was present in two-thirds of the families. When the father lived in the house, the mother had significantly more births (3.9 versus 5.0), more live births

(3.6 versus 4.6), and more living children (3.2 versus 4.2). The presence of the father had no effect, however, on the size of child at birth, infant mortality, height for age, or weight for age.

Table 4. Rural/urban demographic differences.

<u>Demographic</u>	<u>Rural</u>			<u>Urban<sup>a</sup></u>		
Household size	7.0	+	0.20 <sup>b</sup>	6.1	+	.21
Pregnancies	5.2	+	0.21 <sup>c</sup>	3.9	+	.22
Live births	4.7	+	0.20 <sup>c</sup>	3.6	+	.22
Children born small	0.4	+	0.06	0.6	+	.09
Children dead first year	0.4	+	0.06	0.3	+	.10
Children living now	4.2	+	0.18 <sup>c</sup>	3.3	+	.18

a = x SE

b = sig .01

c = sig .0001

The number of children in rural households was significantly greater than the number in urban households (4.2 versus 3.3). Rural women also had significantly more live births. There were no rural/urban differences in the number of children who were small at birth or who died during the first year of life. Women whose children were stunted (less than 90% of normal height for their age) had more pregnancies and more children born small than women whose children were not stunted. However, they did not have more living children, more children who died within the first year of life, or children who had more diarrhea or visited health centers more often than children who were not stunted. Women whose children weighed less than 80% of the National Center for Health Statistics (NCHS) standard for their age had more pregnancies than women whose children exceeded 80% of the standard. There were no other differences between these children.

#### Food Production

As expected, rural participants produced more food than urban participants. Meat and dairy items were the most common products; vegetables were produced least often (see table 5). There were significant differences in food production among the rural groups but not among the urban groups. Rural controls were twice as likely as other groups to produce vegetables. They also produced more fruit.

The community beneficiaries were more likely to produce grains, beans, or meat. The Junta and public health groups were highest only in dairy production. The total number of food crops produced had no effect on the nutritional status of the children or the child-bearing success of the mothers in the sample groups.

Table 5. Percentage of rural and urban food production by PL480 Title II program participants and controls, Honduras, 1987.

Program	Fruit		Vegetables		Grains		Beans		Dairy		Meat	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Public health	26.7	15.5	6.7	8.6	44.8	15.5	37.9	17.2	73.3	17.2	66.7	19.0
Junta	43.4	-	9.6	-	68.7	-	62.7	-	78.3	-	78.8	-
Community	41.7	17.5	8.3	5.0	83.3	2.5	83.3	5.0	66.7	7.5	83.3	10.0
Control	63.7	20.4	17.6	18.4	45.1	16.3	33.3	18.4	53.9	20.4	63.7	20.4
Rural/urban	b		c		d		a					
Total	49.8	17.6	12.6	10.8	57.1	12.2	49.2	14.2	66.1	15.5	71.4	16.9
Total	37.3		12.0		39.5		35.3		46.7		50.1	

- a - sig < .01
- b - sig < .001
- c - sig < .0001
- d - sig < .00001

### Socioeconomic Index

The controls rated higher than the sample groups on almost all of the socioeconomic indices. Only one-fourth of the controls lived in houses with dirt floors versus two-thirds of the public beneficiaries and three-fourths of Junta program participants. The controls were most likely to have a cement floor (60.6%). In all groups, urban residents were more likely to have a cement floor and rural residents to have a dirt floor. There were no rural/urban differences in type of cookstove. About half of the community program participants had some type of transportation; the proportion was lower in the urban areas where people had access to public transportation. Controls were most likely to use public transportation. Almost all of the Junta group either used an animal such as a donkey for transportation or had no means of transportation. Junta beneficiaries were least likely to have any type of household good, including a radio. In the urban areas, 60.4% of the public health beneficiaries, 72.5% of the community, and 91.9% of the controls had a radio, radio/cassette recorder, or television. In rural areas, ownership of household goods ranged from 42% of the public health beneficiaries to 58.9% of the controls.

### Program Overlap

The greatest amount of overlap -- where beneficiaries selected for one program also participated in another program -- was found between the community and Junta programs (see table 6). One-fourth of the community beneficiaries also participated in Junta programs, but only 10.3% of the

Junta beneficiaries also participated in community programs. Public health beneficiaries were least likely to participate in other programs. The controls seldom participated in any of the programs. Only 2% used the public health clinics and less than 1% used the other two programs. The school feeding program had the greatest overlap with other programs. There was a strong rural/urban difference with 25.5% of the rural families but only 6.1% of the urban families participating. Twice as many Junta beneficiaries (24.1%) than community beneficiaries (12.5%) were enrolled in school feeding programs. Only 2.8% of the sample participated in food-for-work programs, and almost all of these individuals were community program participants.

Table 6. Participation in other PL480-supported programs (percentage).

	Public health	Junta	Community
Public health	-	8.1	5.8
Junta	10.3	-	10.3
Community	7.8	25.0	-
Control	2.0	0.7	0.7

### Program Delivery

We observed some problems with program delivery; for example, the home of public health program beneficiaries contained only small quantities of donated commodities and many times beneficiaries selected for a program did not receive food from the program. Most of the public health program participants did not have any of the donated foods at the time of the study; 34 families had milk, 32 had flour, 25 had rice, and 24 had oil in quantities ranging from .3 lb to 8 lb. Community programs in rural areas seemed to have the greatest problems with delivery: only 54.2% of these beneficiaries actually received food. In the urban areas, 70% of the listed community beneficiaries attended the centers. Both of the urban community centers selected were Ministry of Work daycare centers for the children of working mothers. Perhaps the beneficiary lists of the community centers surveyed were not current. Junta programs seemed to be reaching the greatest proportion of the listed beneficiaries: 90.8%. Approximately 83% of public health beneficiaries in both rural and urban areas were receiving food. Of all the respondents who participated in the public health program, 80.9% were beneficiaries selected for the study. The remainder were beneficiaries of other programs or were controls who also received food from public health clinics. In the Junta programs, 76.7% of those participating were selected beneficiaries. For the community groups the proportion was 73.2%.

## Nutrition Education

Beneficiaries of public health programs were more likely than participants in other programs to receive nutrition information (65.1%; see table 8). More than half (56.0%) of the Junta, only 36.5% of the community groups, and 45.6% of the controls had received nutrition information. There were no rural/urban differences. Public health centers and homemaker clubs were the most frequently cited sources of information; about one-third of the public health beneficiaries received nutrition information at the public health center. Although most of the Junta programs sampled were sponsored by homemaker clubs, only 19.1% of participants in those programs said they received nutrition information from a club. Nutrition auxiliaries were most likely to provide information to community groups. Next to family and friends, schools and the radio provided the least amount of information.

Women in the public health programs either taught themselves or learned from a relative how to prepare the commodities. Only 20% learned at the health center and 6.8% from homemaker clubs. Although about half said their families did not like at least one of the commodities (milk, flour, rice, and oil), 85.1% said they used all of the donated foods. Milk, flour, and rice were preferred about equally. Oil was preferred least.

Table 7. Source of nutrition information (percentage).

	Public Health	Junta	Community Control	Total	
Do not receive	34.9	44.0	63.5	54.4	49.2
School	6.5	5.9	-	9.6	7.1
Health center	32.6	17.2	14.1	16.0	19.6
Nutrition auxiliary	9.1	8.8	17.9	0.7	6.2
Homemaker club	20.8	19.1	-	4.4	11.4
Family/friends	-	4.4	3.6	2.2	2.3
Radio	7.8	4.4	3.6	12.7	8.8
Total	111.7 <sup>a</sup>	103.8	102.7	100.0	104.6

<sup>a</sup>More than one source possible

### Statistical Analysis Findings

Significant positive correlations were found between participation in one or more PL480 Title II programs and food production, number of pregnancies, number of live births, and number of living children. The PL480 food, whether consumed at home and shared with the entire family or consumed at a feeding site, had a positive impact on the woman's success in childbearing. Program participation was negatively

correlated with women's education and the time it took to get to a health center, which suggests that women with little or no formal education and women living in more isolated communities were less likely to participate in a program than other women. There was a strong correlation between food production and number of pregnancies, number of live births, number of living children, and household size. We could not determine whether this was because larger households have more labor available and can therefore produce more food or because women from households with greater food production were healthier and thus more successful in childbearing. The positive findings were supported by a regression analysis of number of live births was affected by household size, number of children dying before their first birthday, program participation, number of children born small in size, father living in the house, and household goods, in that order. Although less significant, program participation did also help explain the differences in the number of children born small and child's height for age. None of the variables used in this study explained variance in the children's weight for age.

## Conclusions

### Impact

The PL480 food, whether consumed at a feeding site or consumed at home and shared with the entire family, improved women's success in childbearing and children's growth (height). According to the Population Reference Bureau, the current fertility rate (the average number of children a woman will have during her childbearing years) is 6.1 in Honduras. The findings of this study suggest that the PL480 foods are related to successful pregnancies, therefore exacerbating the population growth rate.

### Food Production

The donated foods are more likely to be produced in the rural areas than supplemental foods such as fruits and vegetables, especially among Junta and community program families. However, only about half of the families produced foods to supplement staple or donated foods. The overlapping of program participation and the reluctance of Junta and community programs to narrowly target their programs indicate some food scarcities in the rural areas. Families participating in PL480 programs were less likely than control families to produce food for family consumption. Public health program participants were less likely than beneficiaries of other programs to produce food for family consumption, especially beans, grains, and fruits.

### Targeting

Although there is limited targeting at the program level, there is some evidence that the program participants are poorer and have less education than nonparticipants. Targeting is greatest in the public health programs, especially the CESAMOs. Children and pregnant and lactating women are referred to those programs by physicians for nutritional or socioeconomic reasons. These beneficiaries are weighed

monthly; children remain with the program until they meet its guidelines and women until they deliver a healthy child or wean their child. The success of this targeting is demonstrated by the number of malnourished children participating in the public health programs. Over three-fourths were malnourished according to weight for age.

Targeting in the other programs is minimal, at best. Usually all pregnant and lactating women in the community who wish to participate may do so. Because the Junta and community programs do not have scales to weigh the children, all children 6 months of age and older are accepted whether or not they are malnourished. Children also are not weighed regularly to determine whether they still need nutritional supplementation. These factors probably contributed to the finding that at least half of the children in these programs were of normal weight for their age.

The Junta served more second-degree malnourished children than the community programs, but the only severely malnourished child was found in a community program. Most of the programs cited economic need as one of the reasons for starting or continuing a feeding program. Indeed, although it was not stated as a reason for targeting, the greatest benefit to these programs may be economic rather than nutritional.

### Surveillance

Surveillance, or a continued monitoring of change in key indicators, is a part of the public health programs only. Some public health programs have begun to use growth charts on which they plot the weight/age of each child each month. The chart, which is in addition to each child's growth chart, allows a mother to compare her child with other children in the center. No evidence of surveillance was found in the Junta or community centers; however, individuals at several centers mentioned that a supervisor or other person came every 3 to 6 months to weigh the children. In none of these centers did the mothers or center personnel have weight cards for each child.

### Delivery

Neither the Honduran agencies nor CARE consistently followed up to determine that the programs were actually receiving and using the food. According to CARE all maternal/child health centers are visited at least twice per year. When the supervisory visit data provided by CARE was examined, the maternal/child health centers averaged 1 visit per year in FY86 and .6 for the first 8 months of FY87. Three centers had no supervisory visits in FY86 while three others had received no visit yet in FY87. This does not include the Junta center that was not operating during FY86. Four of the selected schools chosen for study could not be used because their programs had been suspended or canceled, they had not received food for 3 or more months, the person in charge was not available and no substitute had been appointed, or they could not be reached by road. CARE ensures that the food reaches the warehouse but does not always seem to be aware of whether the food is being used by the intended beneficiaries. Centers are not required to verify their current numbers of beneficiaries -- indeed, this is not considered when setting allotments, so centers are not encouraged to keep their beneficiary lists current. On the average, 70% to 80% of persons whose

names appeared on beneficiary lists were not current participants. The reasons for this seemed to be related more to organizational problems than to fraud; however, the lack of current lists could provide a means for hiding food disappearance or misuse.

The greatest problems with program delivery occur within the programs sponsored by community organizations. The public health programs, which were the most closely supervised, had more than expected problems due to illness, injury, pregnancy, or resignation of the person in charge of the program. If a substitute had not been appointed, the most recent food allotment had not been received. We did not determine whether this information simply was not communicated to the regional personnel or it was not acted upon for some reason. In Nacaome the amount of foods received depended upon the amount of money paid by the beneficiary, especially for favored foods such as rice. In general there were more delivery problems in Choloteca and Nacaome than in the other departments. All public health program beneficiaries paid a small sum for the entire package of foods to cover local transportation and distribution costs. Beneficiaries in Nacome who paid an additional amount received more of the preferred commodities, especially rice. This may be related to the tremendous amount of donated food and other aid currently pouring into the region rather than fraud.

Other nutrition-related programs in the country, such as oral rehydration therapy for children with diarrhea and immunization campaigns, have increased the number of immunized children and may be responsible for the fact that neither incidence nor duration of diarrhea was a factor in child growth in this study. Sanitation conditions such availability of latrines and potable water were not important factors in nutritional status.

## RECOMMENDATIONS

Commodities donated under PL480 Title II improve the nutritional status of pregnant and lactating women and the height of children less than 6 years of age. They also have a positive effect on mathematics and social studies grades of schoolchildren. The foods are reaching the poorest and most needy public health and Junta beneficiaries and schoolchildren. Each type of program has strengths and weaknesses. With greater targeting and some changes in delivery, the programs can become even more effective. Specific recommendations follow.

1. The Ministry of Public Health should strengthen programs that encourage women to limit the number of children they have while continuing to ensure that their children are healthy.
2. The Ministry of Public Health should strengthen communication with nutrition auxiliary personnel in remote areas so problems can be resolved more easily.
3. The Ministry of Public Health should consider adopting one of the pregnancy weight gain charts to record the number of women who

achieve satisfactory weight gain during pregnancy. Weight at conception as well as weight gain during pregnancy are very strong predictors of pregnancy outcome and the child's birth weight. (The number of pounds gained during pregnancy must be evaluated in conjunction with the woman's prepregnancy weight). Women with insufficient weight gain, especially during the third trimester, could be targeted for additional food.

4. Ministry of Public Health personnel should clarify the ministry's objectives by stating the outcomes they want in a way that can be measured. Appropriate objectives are
  - a. to increase coverage of targeted pregnant women in the area served by a CESAR or CESAMO by 10% during 1987
  - b. to increase the number of pregnant women enrolling in the clinic at the beginning of the their second trimester by 20% by the end of 1988
  - c. to increase the number of clinic visits per pregnancy by 20% by the end of 1988
  - d. to decrease the number of children who are born small for date by 20% during 1987.
  - e. to decrease the number of spontaneous abortions from nutritional causes by 50% at the end of 3 years
5. Programs of the Junta Nacional de Bienestar Social should be better targeted. Overlap between Junta programs and those of other community organizations should be eliminated. Any change in policy to increase targeting in the lactarios must be carried out with the cooperation of the women's groups sponsoring the lactarios. Growth monitoring would improve targeting. Centers that have scales can weigh children to determine their nutritional status. Centers or lactarios without scales can use height for age. This is a good indicator of long-term or chronic nutritional status. Arm circumference could also be used but it is a better indicator of severe malnutrition, while children in Honduras are more likely to be moderately malnourished. Volunteers can be easily trained to measure the height of children 2 years of age and older. Measuring younger children is more difficult because the children must be measured lying down; however, measuring boards are inexpensive and easy to make, and volunteers can be trained to use them. Given the large number of normal children found in the Junta and community programs, it seems that greater targeting could be accomplished without denying food to those who truly need it.
6. The Junta should re-examine and restate its objectives in a way that can be easily measured. Centers that have scales can weigh children to measure their nutritional status. Centers or lactarios without scales can use height for age as the indicator of long-term (chronic) nutritional status. Arm circumference could also be used;

consumes the supplement, he/she should color in the amount consumed on the glass or snack picture. The cards and attendance and grade information could be forwarded to Tegucigalpa for analysis. Height should be measured again at the end of the year. Because grades can be affected by teacher bias, a subsample should be given some type of standardized test at the beginning and end of the study, perhaps one of the nonculturally-biased tests of cognitive development used in Guatemala.

10. Community programs should be evaluated by an outside evaluator or by the donor agency to determine if continued assistance is justifiable. The diversity of the community programs makes recommendations difficult. The food is used as a financial aid to the center, as one part of an integrated program, as an incentive to participate in income-generating activities, produce food, or attend health centers. Community programs have the least amount of targeting and surveillance.
11. Supervision of the programs and communication with the donors should be strengthened. Given the minimal supervision the programs receive, it is amazing that more difficulties were not encountered. Volunteers and auxiliary personnel in charge of many programs do not seem to fully understand the program or why they are or are not receiving food. At all of the centers encountered during the survey that were not receiving food, personnel indicated that they did not know why they were not receiving food or how they could start receiving it again. (It may be that the representatives of some centers did know, especially when they had been dropped for a just reason, but thought the survey team could provide more food.) Remote or isolated centers are difficult to supervise. CARE should develop a short guide to program protocol and provide copies to each center.
12. CARE supervisors should confirm that the food reaches the program beneficiaries. CARE follows up in the school feeding program, but it seems less concerned about what happens to the food in the maternal/child health programs after it leaves the CARE warehouse. CARE supervisors rarely visit most of these programs. When they do visit, they should make very clear what agency they are representing.
13. Nutrition education should be part of food distribution to the maternal/child health programs as is to the school feeding programs. Information could be made available by homemaker clubs, social workers, or nutrition auxiliaries at public health clinics. Nurses at the CESARs are too busy during clinic times to teach patients about nutrition. Given the large number of families with radios, a mass media nutrition-education campaign might be considered. This would require external funding.
14. Greater use of PL480 food in food-for-work programs should be considered. The food could be used to pay trained volunteers for taking measurements or keeping records of program surveillance, preparing food in centers, distributing food at public health

centers, or providing nutrition education. Food could be provided to a family for a short period (3 months to 1 year) to enable family members to learn job skills, plant new crops, plant a home garden, or use new agricultural technology. The food would let the family try something new without risking hunger.

15. Use of the food in processed products should be considered. The CSM and milk can be combined with a source of calories, such as oil or sugar, to provide a baked product that is higher in calories. Perhaps some of the commodities can be used as payment to the bakeries. A weaning food, similar to Incaparina, can be developed for use in the maternal/child health programs. Any products should be taste tested by consumers. Some schools, Junta centers, and community centers probably already offer such products. They should be identified by the CARE supervisors, and their products should be tested by other centers.
16. The possibility of a food production disincentive should be investigated. There should be a follow-up on the lack of household food production, especially among the rural public health beneficiaries versus the control group. Perhaps the public health beneficiaries are landless or have less access to technology. If that is the case, PL480 food might be used to provide food to rural families until they can adopt new agriculture technologies.
17. Future evaluations must use more realistic time frames. The scope of work for this evaluation clearly defined the work to be done but did not realistically plan how to accomplish it. The work actually involved three evaluations, one for each program: the school feeding program, the public health food distribution program, and the Junta and community on-site feeding programs. For each of these at least 3 months were required to plan, collect data, analyze, and report. At least 1 month is required to design and test a questionnaire and train interviewers before data collection can begin.

#### **PROPOSAL FOR FUTURE DATA COLLECTION FOR MATERNAL/CHILD HEALTH CENTERS IN THE PL480 TITLE II PROGRAM**

Maternal/child health centers, especially those staffed by volunteers or paraprofessionals with little or no formal education, need a simple method for collecting data for program evaluation. The method suggested below assumes that the objective of the PL480 Title II program is to improve the nutritional status of preschool children. It uses the GOBI indicators (growth, oral rehydration, breast feeding, and immunization) promoted by the the World Health Organization. The system is not designed for health centers (CESARS or CESAMOS) that have trained personnel and equipment and functioning monitoring systems.

##### **A. Feeding centers**

1. Monthly attendance sheets should be developed that list all beneficiaries. For children under 6 years of age there should

be two columns per day, one to check attendance and one to check whether the child has diarrhea.

2. At the beginning of each month each child's arm circumference should be measured with a Shaker strip. This screening tool is made from a strip of nonstretching material, such as used x-ray film. Colors are added to indicate values greater than 13.5 cm (green, or safe), 13.5 to 12.5 cm (yellow or caution) and less than 12.5 (red, or danger). This strip can easily be used by illiterates and is sensitive to severe malnutrition. The number of children having each value should be recorded each month.
3. All lactating mothers should be asked at the beginning of each month if they are still breast feeding and if they have introduced supplemental foods.
4. A nonstretchable tape measure can be mounted to one wall of the center. Once a month the heights of all children at least 2 years of age should be measured. If possible, the measurements should be plotted on growth charts (or perhaps one large one for the center for a 6-month or 1-year period). Mothers should be taught that regular increases in height are good and stalled growth is bad.
5. Once a month the center director should indicate how many children entered the program and how many left, noting a reason for each loss.
6. On each child's birthday, his or her immunization record should be checked to be sure the immunizations are appropriate for the child's age. If they are not, a note should be made in the file.

B. At 6-month visits, supervisors should

1. Weigh all children and chart their growth. Perhaps the weight chart could be printed on the reverse side of the height chart.
2. Calculate and note average attendance per month.
3. Calculate and record
  - a. percentage of children with one or more episodes of diarrhea per month
  - b. average days of duration of diarrhea
  - c. percentage of children with red, yellow, or green arm-circumference values by month
  - d. percentage of children less than 18 months (or usual weaning age) being breast fed

e. percentage of children with correct immunizations

Note: If a pretest shows little monthly variance, these can be reported quarterly.

4. Report change (plus or minus) on each indicator (including weight).

This system must be carefully designed with input from volunteers and paraprofessionals at the centers. It should then be extensively field tested for ease of application.

**APPENDIX 1**  
**OBJECTIVES AND SCOPE OF WORK:**

The evaluation of the PL480 Title II efforts in Honduras were described in Work Order No. 1 prepared in the Winrock office in January 1987. The sections relating to this aspect were described as follows:

**I. Objectives:**

2. To determine the extent to which Title II commodities are being targeted, the impact of the school feeding program on school enrollment, attendance and retention, and the nutritional impact of the Maternal Child Program.
3. To recommend appropriate action depending on findings including appropriate levels and types of PL 480 commodities for the near future, program reorganization, reduction in coverage and even phaseout, if needed.

**II. Scope of Work:**

**B. Title II:**

In coordination with the Office of Human Resources Development/Health, Winrock International will be expected to:

1. Assess program efficiency, that is, definition and application of planned strategy, objectives and targeting mechanisms and management of available resources including coordination and integration of activities and monitoring and evaluation of activities undertaken.
2. Assess the impact of the school feeding program on:
  - (a) total school enrollment with respect to school enrollment capacity
  - (b) school attendance as measured by average attendance observed in selected schools during months of high and low attendance (i.e., March and June)
  - (c) annual retention rates (i.e., initial vs final enrollment)
3. Assess the impact of the Maternal/Child Health subprogram on the demand for health center services, and on the nutritional status of beneficiaries as reflected by anthropometric indicators. Reg. # days used = length of time in program + days diarrhea + distance from Health Center + (SESI) + source H<sub>2</sub>O + flour.
4. Assess the adequacy of the nutritional composition of rations for overcoming nutritional deficiencies.

5. Assess the impact of the food for work activities on the socioeconomic development of the family/community, particularly with respect to increased food production, creation and/or improvement of community health facilities and overall improved communal standard of living.
6. Assess the cost effectiveness of the Title II program. This must include a calculation of the per capita cost of the food served or the cost per ration distributed to recipients.

### III. Methodological Guidelines

#### B. Title II

To carry out duties B-2 to B-4, field research will be needed. The PL480 Title II program has three components: the school feeding program, maternal/child health, and food for work. To assess program impact, beneficiary samples for the three different components must be drawn.

A multistage approach in sample selection will be adopted. Winrock International will first identify regions of interest based on criteria defined below.

Impact analysis should allow the mission to determine effect of interventions in areas characterized by different degrees of malnutrition. Schools, health centers and communities to be visited should be selected from two areas: those where malnutrition is supposed to be higher and those where it is supposed to be lower. For example, previous studies have indicated that southern and western Honduras would fall into the first category whereas northern Honduras would fall into the second. Samples should be selected from such contrasting regions. Within those regions, emphasis must be placed on areas where program activities are more intense. Characteristics of elements of the universe from which the sample must be drawn are:

- (a) location in region of either high or low malnutrition
- (b) location in an area within that region where there is concentration of program activities

School impact data should be collected only for a number of grades in each school, preferably from first to third grade as constitutes the core target age group for the program. In addition, information on individual variables indicated below (e.g., parental occupation, family size) should be collected only for a number of children within each grade. The selection of these students should be based on a stratified random sampling technique. Children should be stratified by sex.

Random sampling techniques should also be utilized in the selection of beneficiaries of the maternal/child health program (e.g., every

nth patient coming in for consultation on given days). Anthropometric measurements to determine program impact will be taken, and visits to health centers should take into account monthly variations in patient demand for services (e.g., beginning vs end of the month).

To determine impact of nutritional program on school enrollment, school attendance and retention, possible confounding variables are:

- (a) characteristics of school environment (e.g., degree of teacher training, magnitude of teacher absenteeism, significance of multigrade teaching)
- (b) characteristics of children (e.g., occupation of parents, family size, sex)

Indicators for dependent variables associated with the school feeding program could be initial enrollment with respect to enrollment capacity of school, average attendance of selected children during anticipated period of high and low attendance during the school year (e.g., initiation of school year and land preparation period, respectively) and final vs initial enrollment per grades during one academic year. School year for which information must be gathered should be selected in the vicinity of experimental communities.

A contrast between project and nonproject participants will be required for the school feeding and maternal/child health programs. Control communities should be selected in the vicinity of experimental communities.

The number of program sites should not exceed 35. Control sites should also be within that limit. To the extent possible, sites to be chosen should be those where at least two types of interventions can be found (e.g., SF and MCH).

Data analyzed must be disagreed by:

- (a) magnitude of problem (e.g., regions with high and low malnutrition)
- (b) location (e.g., urban and rural)
- (c) sex
- (d) length of participation in the program
- (e) degree of efficiency in program management (e.g., efficient vs deficient distribution centers)

#### IV Reports

The evaluation team will provide USAID/Honduras:

- (a) 10 copies of a draft report, which is to be discussed with concerned offices and participating agencies
- (b) 10 copies of a final report incorporating all changes suggested by personnel involved in the review process

The draft evaluation report will be presented before departure of the evaluation team from Honduras. The final evaluation report will be submitted within one month after receiving mission reaction to the draft document. The final report must be translated into Spanish.

The reports, draft and final, must have an executive summary. This summary must include the following sections: purpose of evaluation, methodology used, findings, conclusions, program's development impact, lessons learned and recommendations.

#### V. Terms of Performance

January 15, 1987 - May 15, 1987

#### XI. Proposed Time Schedule

Winrock International will work from January 15, 1987, through May 1987 to allow to complete final report 30 days after receiving mission reaction and to translate into Spanish. All work except for preparation of the final report will be performed in country. It is suggested that six weeks' work will be performed in country with one week reserved for final report preparation at home office.

APPENDIX 2

CUESTIONARIO PARA MUJERES EMBARAZADAS Y LACTANTES  
Y MADRES CON HIJOS EN PROGRAMAS DE ALIMENTACION

Fecha: \_\_\_\_\_

A. IDENTIFICACION

1. Departamento: \_\_\_\_\_

2. Municipalidad: \_\_\_\_\_

3. Comunidad: \_\_\_\_\_

4. Programa: \_\_\_\_\_ SALUD PUBLICA \_\_\_\_\_ CESAMO \_\_\_\_\_ CESAR  
 \_\_\_\_\_ JNBS \_\_\_\_\_ CEDIN \_\_\_\_\_ CNS \_\_\_\_\_ LACTARIO  
 \_\_\_\_\_ Comunidad \_\_\_\_\_ Vaso \_\_\_\_\_ Comedor  
 \_\_\_\_\_ Ministerio de Educacion  
 \_\_\_\_\_ Control  
 \_\_\_\_\_ embaraz \_\_\_\_\_ lactante \_\_\_\_\_ niño \_\_\_\_\_ escolar

5. Número del Beneficiario \_\_\_\_\_

B. CUESTIONARIO GENERAL PARA TODAS

1. Nombre del beneficiario \_\_\_\_\_

2. Fecha de nacimiento: \_\_\_\_\_ día \_\_\_\_\_ mes \_\_\_\_\_ año;

Edad \_\_\_\_\_ meses

Verificado \_\_\_\_\_ no \_\_\_\_\_ si

3. Sexo: \_\_\_\_\_ masculino \_\_\_\_\_ femenino

4. Nombre del entrevistado: \_\_\_\_\_

5. Edad de ella \_\_\_\_\_ años

6. Relación con el beneficiario:

\_\_\_\_\_ ella misma

\_\_\_\_\_ madre

\_\_\_\_\_ madrastra

\_\_\_\_\_ abuela

\_\_\_\_\_ hermana

\_\_\_\_\_ tía

\_\_\_\_\_ otros \_\_\_\_\_

7. Cuantos años de escuela ha hecho? \_\_\_\_\_

8. Sabe leer? \_\_\_\_\_ no \_\_\_\_\_ si

9. Ocupación de la madre: \_\_\_\_\_



24. Cuántas veces ha visitado (el beneficiario) un puesto de salud este año? \_\_\_\_\_
25. Cuánto tiempo le toma a usted llegar al puesto de salud? \_\_\_\_\_ minutos
26. Recibe usted o alguno de sus familiares: (Señale todas las que recibe)
- |   |       |       |
|---|-------|-------|
| comida de un puesto de salud            | _____ | _____ |
| vaso nutricional o merienda de la Junta | _____ | _____ |
| comida de un centro en la comunidad     | _____ | _____ |
| vaso nutricional en la escuela          | _____ | _____ |
| alimentos por trabajo                   | _____ | _____ |
27. Qué alimentos produce su familia para su propio consumo? (Señale todas las necesarias)
- |                              |       |       |
|------------------------------|-------|-------|
| no hay producción familiar   | _____ | _____ |
| frutas                       | _____ | _____ |
| vegetales                    | _____ | _____ |
| arroz, maíz, otros granos    | _____ | _____ |
| frijoles                     | _____ | _____ |
| leche, queso, huevos         | _____ | _____ |
| cerdos, gallinas, otra carne | _____ | _____ |
28. De dónde consigue agua para cocinar y tomar?
- |                                      |       |
|--------------------------------------|-------|
| _____ río o quebrada                 | _____ |
| _____ pozo                           | _____ |
| _____ ilave de la comunidad          | _____ |
| _____ tubería dentro de la propiedad | _____ |
| _____ tubería dentro de la vivienda  | _____ |
29. Que tipo de servicio sanitario tiene usted?
- |  |       |
|--|-------|
| _____ en el suelo                      | _____ |
| _____ letrina improvisada              | _____ |
| _____ letrina con piso de cemento      | _____ |
| _____ letrina lavable (tasa campesina) | _____ |
| _____ servicio sanitario inodoro       | _____ |
30. De qué material está hecho el piso de su casa?
- |                           |       |
|---------------------------|-------|
| _____ tierra              | _____ |
| _____ madera              | _____ |
| _____ ladrillo rafón      | _____ |
| _____ cemento rústico     | _____ |
| _____ ladrillo de cemento | _____ |

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31. Qué utiliza para cocinar la comida para su familia? \_\_\_\_\_
- fuego en el suelo
  - fogón
  - estufa de leña
  - fogón mejorado (estufa lorena)
  - estufa de gas o eléctrica
32. Qué tipo de transporte usa su familia? \_\_\_\_\_
- ninguno
  - burro, mula, caballo
  - bicicleta
  - motocicleta
  - carro/camión
- 33.Cuál de las siguientes tiene su familia? \_\_\_\_\_
- radio
  - maquina de coser
  - grabadora o casetera
  - televisión
  - ninguno
34. Es usted miembro del club de amas de casa? \_\_\_\_\_
- no  si
35. Por cuánto tiempo? \_\_\_\_\_ meses/años \_\_\_\_\_
36. A cuántas otras organizaciones de la comunidad pertenece usted? \_\_\_\_\_
37. Cuántos puestos de responsabilidad ha ocupado usted en estas organizaciones? \_\_\_\_\_
38. Ha recibido usted alguna información acerca de los mejores alimentos para su familia, una buena nutrición o cómo tener una familia saludable?  no  si
39. Dónde recibió usted esta información? (Señale todas las necesarias)
- escuela \_\_\_\_\_
  - centro de salud \_\_\_\_\_
  - axiliares de nutrición \_\_\_\_\_
  - club de amas de casa \_\_\_\_\_
  - familiares/amigos \_\_\_\_\_
  - radio \_\_\_\_\_
  - no se aplica \_\_\_\_\_
  - otro (Explique) \_\_\_\_\_

C. SOLO PARA LOS PROGRAMAS DE SALUD PUBLICA:  
Si no recibe alimentos de un puesto de salud avance a la seccion D.

1. Cuando fue la última vez que recibió alimentos del puesto de salud? \_\_\_\_\_ (numero de días) \_\_\_\_\_  
(conforme a los registros del puesto de salud? \_\_\_ si \_\_\_ no) \_\_\_\_\_

2. Cuantos meses ha estado recibiendo estos alimentos? \_\_\_\_\_

3. Cuantos son los beneficiarios registrados en la familia?  
\_\_\_\_ ella \_\_\_\_\_  
\_\_\_\_ hijos (numero que los recibe) \_\_\_\_\_  
\_\_\_\_ hijas (numero que los recibe) \_\_\_\_\_  
(es conforme a los records del puesto de salud \_\_\_no \_\_\_si) \_\_\_\_\_

4. Cuanto paga cada vez que recibe los alimentos? \_\_\_\_\_  
\_\_\_\_\_ centavos

5. Cual es el mayor beneficio que recibe (el beneficiario) de los alimentos? \_\_\_\_\_  
\_\_\_\_\_

6. Cuales son otros beneficios que recibe (el beneficiario)? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. Que comida le gusta más a su familia?  
(Señálelo según el orden de preferencia)  
\_\_\_\_ leche \_\_\_\_\_  
\_\_\_\_ harina de trigo \_\_\_\_\_  
\_\_\_\_ arroz \_\_\_\_\_  
\_\_\_\_ aceite \_\_\_\_\_

8. Cual comida no le gusta a su familia?  
leche \_\_\_\_\_  
harina de trigo \_\_\_\_\_  
arroz \_\_\_\_\_  
aceite \_\_\_\_\_  
comemos todo \_\_\_\_\_

9. Generalmente, como prepara usted estas comidas?  
leche \_\_\_\_\_  
harina de trigo \_\_\_\_\_  
arroz \_\_\_\_\_  
aceite \_\_\_\_\_

10. Quien le enseñó a preparar estas comidas?

- nadie, aprendí sola
- mamá u otro pariente
- un amigo o vecino
- alguien del centro de salud
- club de amas de casa
- otro (explique) \_\_\_\_\_

11. Qué precios tienen estos alimentos en el mercado local?

- leche \_\_\_\_\_ por \_\_\_\_\_ (unidad de medida) \_\_\_\_\_
- harina de trigo \_\_\_\_\_ por \_\_\_\_\_ (unidad de medida) \_\_\_\_\_
- arroz \_\_\_\_\_ por \_\_\_\_\_ (unidad de medida) \_\_\_\_\_
- aceite \_\_\_\_\_ por \_\_\_\_\_ (unidad de medida) \_\_\_\_\_

12. Qué cantidad de estos alimentos tiene ahora? (peso del entrevistador)

- leche \_\_\_\_\_ libras \_\_\_\_\_
- harina de trigo \_\_\_\_\_ libras \_\_\_\_\_
- arroz \_\_\_\_\_ libras \_\_\_\_\_
- aceite \_\_\_\_\_ libras \_\_\_\_\_

D. SOLO PARA LOS PROGRAMAS DE LA JUNTA O DE LA COMUNIDAD

Si el entrevistado no pertenece a la Junta o a los Programas de la Comunidad pasar a la letra E.

1. Cuando fué la última vez que (el beneficiario) recibió su vaso o comida?

- ayer
- hace dos días
- la semana pasada
- Otro \_\_\_\_\_

2. Hace cuánto tiempo ha estado recibiendo su vaso o comida del centro? \_\_\_\_\_ (mes) \_\_\_\_\_

3. Cuántas veces a la semana, (el beneficiario) va al centro por la comida? \_\_\_\_\_

4. Cuánto tiene que pagar por recibir esta comida? \_\_\_\_\_  
\_\_\_\_\_ centavos

5. Cuál es el mayor beneficio que (el beneficiario) recibe de esta comida? \_\_\_\_\_
6. Qué otros beneficios recibe? \_\_\_\_\_  
\_\_\_\_\_
7. Quién le dió información sobre nutrición o salud en el centro?  
 \_\_\_\_\_ nadie  
 \_\_\_\_\_ encargada del centro  
 \_\_\_\_\_ auxiliar de nutrición  
 \_\_\_\_\_ voluntario  
 \_\_\_\_\_ visitante del centro  
 \_\_\_\_\_ otra persona (explique) \_\_\_\_\_
8. Qué otro alimento come (el beneficiario) los días en que come en el centro? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
9. Qué alimento come (el beneficiario) cuando no come en el centro? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
10. Quién lleva al (beneficiario) al centro de alimentación?  
 \_\_\_\_\_ nadie, va solos  
 \_\_\_\_\_ otro hermano  
 \_\_\_\_\_ familiar o vecino  
 \_\_\_\_\_ ella  
 \_\_\_\_\_ otra persona (explique) \_\_\_\_\_

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11. Quien le prepara la comida para su familia cuando lleva (el beneficiario) al centro? \_\_\_\_\_

- \_\_\_\_\_ hija
- \_\_\_\_\_ madre
- \_\_\_\_\_ hermana, amigo o familiar
- \_\_\_\_\_ ella
- \_\_\_\_\_ no se aplica porque ella no va al centro
- \_\_\_\_\_ otra persona (explique) \_\_\_\_\_

E. ANTROPOMETRICOS

Madre: peso \_\_\_\_\_ lb/kg; \_\_\_\_\_

talla \_\_\_\_\_ cm. \_\_\_\_\_

Hijo: peso \_\_\_\_\_ lb/kg; \_\_\_\_\_

talla \_\_\_\_\_ cm. \_\_\_\_\_

NOTAS:

F. ENTREVISTADOR: \_\_\_\_\_

1. Estaba ahí el beneficiario para entrevistarlo? \_\_\_\_\_

\_\_\_no \_\_\_si

2. Si no fuè así, \_\_\_\_\_

a. Por què no estaba?  
\_\_\_\_\_

b. Còmo se escogió al entrevistado? \_\_\_\_\_

\_\_\_\_\_ el siguiente en la lista patròn

\_\_\_\_\_ otro (explique) \_\_\_\_\_

3. Cuànto durò la entrevista? \_\_\_\_\_ minutos \_\_\_\_\_

APPENDIX 3  
CUESTIONARIO NINOS ESCOLARES

A. IDENTIFICACION

1. Departamento: \_\_\_\_\_
2. Municipalidad: \_\_\_\_\_
3. Comunidad: \_\_\_\_\_
4. Programa:  Escuela  
 escolar
5. Número del Beneficiario \_\_\_\_\_

B. ESCOLAR

1. Nombre del beneficiario \_\_\_\_\_
2. Fecha de nacimiento: \_\_\_\_\_ día \_\_\_\_\_ mes \_\_\_\_\_ año:  
Edad \_\_\_\_\_ años  
Verificado  no  si
3. Sexo  masculino  femenino
4. En que grado está usted? \_\_\_\_\_ grado
5. Cuán a menudo come o toma la merienda?  
 nunca  
 de vez en cuando  
 la mayoría de las veces  
 cuando es servida

Si el niño come o toma la merienda la mayoría de las veces o cuando es servida, preguntar:

6. Cuál es el mayor beneficio que usted recibe de la merienda?  
\_\_\_\_\_  
\_\_\_\_\_

7. Qué otros beneficios recibe usted?  
\_\_\_\_\_  
\_\_\_\_\_

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Si el niño come o toma la merienda de vez en cuando o nunca, preguntar:

8. ¿Cuál es la razón principal por la cual usted no toma o come la merienda? \_\_\_\_\_

\_\_\_\_\_

9. Existen otras razones? \_\_\_\_\_

\_\_\_\_\_

10. ¿Cuántos días de escuela perdió este niño el año pasado? \_\_\_\_\_

\_\_\_\_ días (obtener dato de los registros del maestro)

11. ¿Qué notas sacó usted el año pasado? (Verifica con la profesora) \_\_\_\_\_

matemáticas \_\_\_\_\_ ciencias \_\_\_\_\_

estudios sociales \_\_\_\_\_ español \_\_\_\_\_

### C. MADRE DEL ESCOLAR

1. Nombre del entrevistado: \_\_\_\_\_

2. Edad de ella \_\_\_\_\_ años

3. Relación con el beneficiario:

\_\_\_\_ ella misma

\_\_\_\_ madre

\_\_\_\_ madrastra

\_\_\_\_ abuela

\_\_\_\_ hermana

\_\_\_\_ tía

\_\_\_\_ otros \_\_\_\_\_

4. ¿Cuántos años de escuela ha completado? \_\_\_\_\_

5. ¿Sabe leer? \_\_\_\_no \_\_\_\_si

6. Ocupación de la madre: \_\_\_\_\_

7. ¿Vive en la casa su padre? \_\_\_\_no \_\_\_\_si

8. Ocupación del padre: \_\_\_\_\_

9. ¿Cuántas personas viven en su casa? \_\_\_\_\_

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10. Recibe usted o alguno de sus familiares:  
(Señale todas las que recibe)

- comida de un puesto de salud \_\_\_\_\_
- vaso nutricional o merienda de la Junta \_\_\_\_\_
- comida de un centro en la comunidad \_\_\_\_\_
- vaso nutricional en la escuela \_\_\_\_\_
- alimentos por trabajo \_\_\_\_\_

11. De dònde consigue agua para cocinar y tomar?

- \_\_\_\_\_ rlo o quebrada
- \_\_\_\_\_ pozo comunitario
- \_\_\_\_\_ pozo propio
- \_\_\_\_\_ tubería de la comunidad
- \_\_\_\_\_ tubería de la casa

12. Que tipo de servicio sanitario tiene usted?

- \_\_\_\_\_ en el suelo
- \_\_\_\_\_ letrina improvisada
- \_\_\_\_\_ letrina con piso de cemento
- \_\_\_\_\_ letrina lavaable (tasa campesina)
- \_\_\_\_\_ servicio sanitario interno

13. De què material esta hecho el piso de su casa?

- \_\_\_\_\_ tierra
- \_\_\_\_\_ madera
- \_\_\_\_\_ ladrillo rafon
- \_\_\_\_\_ cemento rústico
- \_\_\_\_\_ ladrillo de cemento

14. Què utiliza para cocinar la comida para su familia?

- \_\_\_\_\_ fuego en el suelo
- \_\_\_\_\_ fogòn
- \_\_\_\_\_ estufa de leña
- \_\_\_\_\_ fogòn mejorado (estufa lorena)
- \_\_\_\_\_ estufa de gas o electrica

15. Què tipo de transporte usa su familia?

- \_\_\_\_\_ ninguno
- \_\_\_\_\_ burro, mula, caballo
- \_\_\_\_\_ bicicleta
- \_\_\_\_\_ motocicleta
- \_\_\_\_\_ carro/camiòn

16. Cuàl de las siguientes tiene su familia?

- \_\_\_\_\_ radio
- \_\_\_\_\_ maquina de coser
- \_\_\_\_\_ grabadora o casetera
- \_\_\_\_\_ televisiòn
- \_\_\_\_\_ ninguna

17. Es usted miembro del club de amas de casa?

- \_\_\_\_\_ no  \_\_\_\_\_ si

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18. A que otras organizaciones de la comunidad pertenece \_\_\_\_\_

usted? \_\_\_\_\_

19. Cuántos puestos de responsabilidad ha ocupado usted en estas organizaciones? \_\_\_\_\_

20. Ha recibido usted alguna información acerca de los mejores alimentos para su familia, una buena nutrición o cómo tener una familia saludable? \_\_\_\_\_ no \_\_\_\_\_ si

21. Dónde recibió usted esta información?

(Señale todas las necesarias)

escuela \_\_\_\_\_

centro de salud \_\_\_\_\_

axiliares de nutrición \_\_\_\_\_

club de amas de casa \_\_\_\_\_

familiares/amigos \_\_\_\_\_

radio \_\_\_\_\_

otro (Explique) \_\_\_\_\_

22. Su hija(o) come usualmente la merienda en la escuela? \_\_\_\_\_ no \_\_\_\_\_ si

Si la respuesta es si, preguntar:

23. Cuál es el mayor beneficio que su hijo(a) recibe de la merienda de la escuela? \_\_\_\_\_

\_\_\_\_\_

24. Qué otros beneficios reciben el/ella? \_\_\_\_\_

\_\_\_\_\_

Si el niño no come usualmente la merienda, preguntar:

25. Porqué su niño(a) no come la merienda? \_\_\_\_\_

\_\_\_\_\_

D. ENTREVISTADOR: \_\_\_\_\_

1. Estaba ahí el beneficiario para entrevistarlo? \_\_\_\_\_ no \_\_\_\_\_ si

2. Si no fue así, por qué no estaba? \_\_\_\_\_

\_\_\_\_\_

3. Cómo se escogió al entrevistado? \_\_\_\_\_

\_\_\_\_\_ el siguiente en la lista patrón

\_\_\_\_\_ otro (explique) \_\_\_\_\_

4. Cuánto duró la entrevista? \_\_\_\_\_ minutos \_\_\_\_\_

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APPENDIX 4  
INFORMACION DE LA JUNTA O DEL CENTRO COMUNITARIO

Fecha:

1. Departamento: \_\_\_\_\_

2. Municipalidad: \_\_\_\_\_

3. Comunidad: \_\_\_\_\_

4. Tipo de centro: \_\_\_\_\_

\_\_\_\_\_ lactario

\_\_\_\_\_ CNC

\_\_\_\_\_ Cedin

\_\_\_\_\_ merienda

\_\_\_\_\_ comida

\_\_\_\_\_ otro \_\_\_\_\_

5. Nombre del responsable: \_\_\_\_\_

6. Posición: \_\_\_\_\_

\_\_\_\_\_ voluntario

\_\_\_\_\_ madre del beneficiario

\_\_\_\_\_ auxiliar de nutrición

\_\_\_\_\_ enfermera auxiliar

\_\_\_\_\_ doctor

\_\_\_\_\_ otro \_\_\_\_\_

7. Número del beneficiario:

\_\_\_\_\_ mujer embarazada \_\_\_\_\_

\_\_\_\_\_ mujer lactante \_\_\_\_\_

\_\_\_\_\_ niños \_\_\_\_\_

\_\_\_\_\_ niñas \_\_\_\_\_

8. Existen listas actuales de los beneficiarios? \_\_\_\_\_ no \_\_\_\_\_

\_\_\_\_\_ si

9. Se almacena la comida adecuadamente? \_\_\_\_\_ no \_\_\_\_\_ si \_\_\_\_\_

10. Cuántas veces a la semana se prepara comida? \_\_\_\_\_

\_\_\_\_\_ días

11. Cuántas veces al día se sirve comida? \_\_\_\_\_

\_\_\_\_\_ meriendas

\_\_\_\_\_ comidas

12. Recibe otra comida además de las donaciones del CARE? \_\_\_\_\_

\_\_\_\_\_ no \_\_\_\_\_ si

13. Si es afirmativo, quièn se los provee? \_\_\_\_\_

\_\_\_\_\_ la Junta

\_\_\_\_\_ la Iglesia

\_\_\_\_\_ en el club de amas de casa

\_\_\_\_\_ organizaciòn comunitaria

\_\_\_\_\_ otra organizaciòn nacional

\_\_\_\_\_ otro \_\_\_\_\_

14. Cuáles son sus costos semanales al usar comida donada?

transporte \_\_\_\_\_

comida suplementaria \_\_\_\_\_

cocina \_\_\_\_\_

utilidades \_\_\_\_\_

otro (explique) \_\_\_\_\_

15. Còmo selecciona a la madre que comerà aqui? \_\_\_\_\_

\_\_\_\_\_

16. Por cuanto tiempo continúa la madre lactante comiendo aqui? \_\_\_\_\_

\_\_\_\_\_

17. Cuánto tiempo continúa el niño comiendo aquí?

\_\_\_\_\_

18. Cada cuanto se pesa el niño?

\_\_\_\_\_ semanalmente

\_\_\_\_\_ mensualmente

\_\_\_\_\_ cada 2 meses

\_\_\_\_\_ cada 3 meses

\_\_\_\_\_ de vez en cuando

\_\_\_\_\_ nunca

19. Cuál es el beneficio más importante que el niño recibe de su centro?

\_\_\_\_\_

20. Qué otros beneficios reciben ellos?

\_\_\_\_\_

21. Cuál es el beneficio más importante que reciben los niños de su centro?

\_\_\_\_\_

22. Qué otros beneficios reciben ellos?

\_\_\_\_\_

Si este es un Club de Amas de Casa:

23. Cuántos miembros hay en su club? \_\_\_\_\_

24. Cuántos años tiene su club? \_\_\_\_\_

25. Hace cuánto que su club patrocina este centro? \_\_\_\_\_
26. Quién prepara la comida? \_\_\_\_\_
- \_\_\_\_\_ todos los miembros del club se turnan
  - \_\_\_\_\_ algunos miembros del club se turnan
  - \_\_\_\_\_ se le paga a alguien
  - \_\_\_\_\_ otros \_\_\_\_\_
27. Si esta es una organización comunal, quién lo patrocina? \_\_\_\_\_
- 
28. Qué tipo de organización es esta? \_\_\_\_\_
- \_\_\_\_\_ grupo de iglesia local
  - \_\_\_\_\_ grupo de iglesia internacional
  - \_\_\_\_\_ organización internacional
  - \_\_\_\_\_ organización nacional
  - \_\_\_\_\_ organización local.

APPENDIX 5  
INFORMACION DE LA ESCUELA

Fecha: \_\_\_\_\_

1. Departamento: \_\_\_\_\_

2. Municipalidad: \_\_\_\_\_

3. Comunidad: \_\_\_\_\_

4. Nombre de la escuela: \_\_\_\_\_

5. Nombre del director: \_\_\_\_\_

6. Numero de clases: \_\_\_\_\_

7. Numero de alumnos: \_\_\_\_\_

8. Numero de beneficiarios de CARE: \_\_\_\_\_

9. Ha recibo alimentos de CARE este ano?    \_\_\_no \_\_\_si

10. Como preparan los alimentos?  
\_\_\_\_\_  
\_\_\_\_\_

11. Quien prepara los alimentos?  
\_\_\_ profesora  
\_\_\_ voluntario  
\_\_\_ empleado  
\_\_\_ otra \_\_\_\_\_

12. Cuanto tiene que pagar por eso?  
\_\_\_\_\_ limpira por semana

13. Quien se lo paga?  
\_\_\_ no aplica porque no paga para preparar  
\_\_\_ la profesora  
\_\_\_ la comunidad  
\_\_\_ las padres  
\_\_\_ otra \_\_\_\_\_

14. Que otro alimentos se sirve con la merienda?  
\_\_\_\_\_  
\_\_\_\_\_

15. A que hora se sirve la merienda? \_\_\_\_\_

16. Generalmente cuantos estudiantes toman la merienda? \_\_\_\_\_
- \_\_\_\_\_
17. Cual es el mayor beneficio que ellos reciben de la merienda? \_\_\_\_\_
18. Que otros beneficios reciben? \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
19. Cuantos dias de sesion tuvo esa escuela en 1986? \_\_\_\_\_
- \_\_\_\_\_ dias
20. Se guarda los alimentos en la escuela? \_\_\_no \_\_\_si \_\_\_\_\_
21. Si no, donde se guarda? \_\_\_\_\_
- \_\_\_\_\_
22. Se guarda apropiadamente? \_\_\_\_\_no \_\_\_\_\_si \_\_\_\_\_
23. Que problemas tiene usted con este programa? \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

NOTAS:

Entrevistador: \_\_\_\_\_

Cuanto duro la entrevista? \_\_\_\_\_ minutos \_\_\_\_\_



11. Cuánto pagan los beneficiarios para recibir alimentos?  
 \_\_\_\_\_ centavos \_\_\_\_\_
12. Se guardan los alimentos en este centro?  
 \_\_\_\_\_ no \_\_\_\_\_ si \_\_\_\_\_
13. Se guardan apropiadamente? \_\_\_\_\_ no \_\_\_\_\_ si \_\_\_\_\_
14. Porque está dando esta comida a las mujeres embarazadas o lactantes?  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
15. Qué problemas tiene usted con este programa?  
 \_\_\_\_\_  
 \_\_\_\_\_
16. Cómo determina usted que niños pueden participar en el programa?  
 \_\_\_\_\_  
 \_\_\_\_\_
17. Cómo determina usted cuando un niño ya no necesita el programa?  
 \_\_\_\_\_  
 \_\_\_\_\_
18. Cuántos niños fueron añadidos el año pasado? \_\_\_\_\_

19. Cuántos niños se eliminaron el año pasado? \_\_\_\_\_

20. Cómo determina si una mujer embarazada necesita  
alimentos? \_\_\_\_\_

21. Cómo determina cuando una mujer lactante necesita  
alimentos? \_\_\_\_\_

22. Cuántos beneficiarios diferentes tuvo este programa  
el año pasado?

_____ embarazadas	_____	_____	_____
_____ lactantes	_____	_____	_____
_____ niños	_____	_____	_____
_____ niñas	_____	_____	_____

APPENDIX 7  
EVALUACION DEL PROGRAMA PL 480, TITULO II.

Protocolo para Estudio de Campo  
Febrero 23 - Marzo 20, 1987

Ministerio de Salud

1. Ir al centro; conocer a la persona encargada.
2. Explicar la encuesta.
3. Entrevistar a la persona a cargo.
4. Solicitar la lista de beneficiarios para verla.
5. Identificar a los beneficiarios que fueron seleccionados al azar.
6. Solicitar a la persona encargada que le acompañe, o que envíe a alguien más que conozca bien la dirección, a visitar primer beneficiario.
7. Entrevistar al beneficiario seleccionado o a la madre. Si la madre no es la persona que cuida al niño, entrevistar a la persona responsable por el niño.
8. Pesar y medir al beneficiario de acuerdo a las guías antropométrico.
9. Los pasos 6-8 serán repetidos hasta que todos los beneficiarios hayan sido entrevistados y medidos.
10. Mientras los entrevistados estén trabajando, el supervisor examinará los registros de los beneficiarios seleccionados para transcribir los datos requeridos.

JUNTA Y ORGANIZACIONES DE COMUNIDAD

1. Ir al centro; conocer a la persona encargada.
2. Explicar la encuesta.
3. Entrevistar a la persona encargada.
4. Solicitar ver la bodega.
5. Solicitar ver la lista de beneficiario.

6. Identificar a los beneficiarios que fueron seleccionados al azar.
7. Entrevistar a los beneficiarios seleccionados, o a sus madres si el beneficiario es un niño, que estén presentes en el centro.
8. Medir y pesar al beneficiario utilizando el equipo llevado al centro así mismo las guías antropométricas.
9. Si el beneficiario no está presente en el centro, pedirle a la persona encargada que le asigne a alguien que lo lleve a la casa del beneficiario y efectuar la entrevista ahí.
10. Medir y pesar al beneficiario utilizando el equipo que se lleva a la casa así mismo las guías antropométricas.
11. Repetir los pasos 7-10 hasta que todas las entrevistas se hayan hecho.

#### **ESCUELAS**

1. Conocer al director o al maestro encargado.
2. Explicar el estudio.
3. Entrevistar al director o al maestro.
4. Identificar a los niños previamente seleccionados.
5. Entrevistar al niño seleccionado.
6. Pesar y medir al niño utilizando las guías antropométricas.
7. Pedir al niño que le conduzca a su casa.
8. Entrevistar a la madre del niño o a la persona responsable por su bienestar.
9. Repetir los pasos 5-8 hasta que todos los niños hayan sido entrevistados.

#### **TRABAJO POR COMIDAD**

1. Ir a la comunidad con el representante de Caritas.
2. Conocer a la persona encargada del proyecto trabajo por comida.

3. Explicar el estudio.
4. Entrevistar a la persona encargada.
5. Inspeccionar el centro de almacenaje de comida del proyecto.
6. Entrevistar a los participantes del proyecto, seleccionados al azar.

## **GUIA ANTROPOMETRICA**

### **1. Peso**

- a. El peso se tomarà utilizando la balanza que el entrevistador llevarà para ello.
- b. La balanza se calibrarà a un peso ya estipulado, antes de pesar al beneficiario.
- c. Los individuos seran pesados con ropa normal (sin sueteres o chaquetas) y sin zapàtos.
- d. El peso se tomarà lo màs exacto posible, hasta la libra o kilogramo màs cercano.

### **2. Aitura**

- a. La altura de niños de 3 o màs años de edad y todas las mujeres embarazadas y lactando, se obtendrà colocando al individuo de espaldas a una pared recta.
- b. La cabeza deberà mantenerse firme, con la barbilla recta apuntando hacia enfrente, formando un àngulo de 90 grados con la nuca.
- c. Los tobillos se mantendran juntos, pegados a la pared.
- d. La espalda se mantendrà recta, con los hombros pegados a la pared.
- e. Se harà una marca con lapiz grafito en la pared y por encima de la parte superior de la cabeza del individuo.
- f. Una cinta mètrica vinilica seraph' llevada desde el suelo hasta la marca del lapiz.

- g. Los resultados serán leídos al centímetro más cercano.
- h. Niños menores de 3 años de edad serán medidos con una tabla de medir para infantes.
- i. Se le pedirá a la madre que sujete firmemente la cabeza del niño.
- j. El entrevistador se asegurará de que el niño esté acostado perfectamente recto con las rodillas rectas y los pies, perpendiculares a la tabla.
- k. La tabla de medir será colocada al nivel de los pies del niño.
- l. La altura se leerá al centímetro más cercano.

**APPENDIX 8**  
**List of Institutions and Sites Visited**

**1 ATLANTIDA**

MINISTRY OF HEALTH	Out of Hospital	
JUNTA	Lactario	Armenia, Bonito, La Ceiba
COMMUNITY	Guarderia	Barrio el Iman, La Ceiba
MINISTRY OF EDUCATION	Yarula Las Mangas	Minerva El Progreso

**2 CORTES**

MINISTRY OF HEALTH	CESAR Hospital Leo- nardo Martinez	Cofradia San Pedro Sula
JUNTA	Lactario  Lactario	Colonia Sinai, San Pedro Sula Quebrada Seca, Choloma
COMMUNITY	Guarderia #4 Guarderia Guamilito	San Pedro Sula  San Pedro Sula
MINISTRY OF EDUCATION	Monterrey	Jose Cecilio del Valle

**3 CHOLUTECA**

MINISTRY OF HEALTH	CESAR  CESAR	San Antonio de Padua, Pespire San Juan Bautista, Pespire
JUNTA	CNC  Lactario  Lactario	El Tablado, Pespire La Palma, Pespire Las Lajas, Pespire

COMMUNITY	Lactario, FEHMUC Lactario, FEHMUC	Guayabias, Choluteca El Papalon, Choluteca
MINISTRY OF EDUCATION	Choluteca	Jose Trinidad Cabañas
4 EL PARAISO		
MINISTRY OF HEALTH	CESAR  CESAR	Trojas, El Paraiso EL Paraiso
JUNTA	Lactario	El Jobal, Texiguat
COMMUNITY	Lactario  Lactario	El Retiro, Moroceli Los Limones, Moroceli
MINISTRY OF EDUCATION	El Portillo del Cerdo Rincon Largo	Republica de Honduras Esteban Guardiola
5 FRANCISCO MORAZAN		
MINISTRY OF HEALTH	CESAMO CESAMO	Barrio Morazan, DC Barrio El Chile, DC
JUNTA	Lactario  Lactario	Agua Dulce, San Ignacio El Pedregal, San Ignacio
COMMUNITY	Guarderia #3	1 Ave, 3 Calle, La Granja, D C
MINISTRY OF EDUCATION	El Carrizal #2	Republica Federal de Alemania
3 OLANCHO		
MINISTRY OF HEALTH	Hospital Inte- grado #3 CESAR  CESAR	Juticalpa Plan de Turcios, Juticalpa Jutiquile, Juticalpa

JUNTA	Lactario	Las Lomas, Catacamas
	Lactario	La Jagua, Catacamas

COMMUNITY	Centro de Capacitacion del PNA	Zopilotepe, Juticalpa
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MINISTRY OF EDUCATION	Mamasaica Las Flores	Maximo Galvez Naciones Unidas
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7 VALLE

MINISTRY OF HEALTH	CESAR CESAR	Nueva Concepcion Aceituno, Alianza
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JUNTA	Lactario	Quebrada Honda, Nacaome
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COMMUNITY	Lactario Escolar	Desvio Transito, Nacaome
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MINISTRY OF EDUCATION	Nacaome Las Mangas	Manuel Bonilla El Progreso
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