IV. ASSESSMENT OF HEALTH AND NUTRITION

GENERAL NUTRITION SITUATION IN EL SALVADOR

El Salvador is a developing country and, as such, shares many of the characteristics found in most developing countries. A number of these characteristics which are nutrition related are described below and shown in annex 9:

1. In a survey performed between 1965 and 1967, INCAP (Instituto de Nutricion de Centroamerica y Panama) found that only 16% of the people in the rural population recognized the relationship between nutritional disease and dietary inadequacies. Although many mothers believed that milk was the most important food in early life, many more had no opinion on the subject.

2. White corn meal tortillas prepared with lime water were a main dish in rural areas. Black or red beans were the second most commonly eaten food, averaging about 56 grams per person per day; 46% of families drank milk and 68% ate various types of cheese but daily amounts were low.

3. Urban diets were found to be better than rural diets in the same survey. (This was at a time before urbanization had begun in earnest.)

4. Goiter was the most obvious symptom of nutritional deficiency found. 37% of the men examined and a slightly higher proportion of women had goiter, adolescents and young adults were most affected. [As of 1983, there were no more recent data on iodine or goiter to replace these 1965 - 67 data quoted above.]

5. INCAP investigators were satisfied that the low level of protein in the diet was responsible for the high number of cases of delayed growth found; 80% of children under 5 years of age were found to suffer from malnutrition of some degree; 38% were second degree (moderate to severe) and 5% were third degree (severe). Low levels of vitamin A, and Vitamin B2 were found in serum, with some symptoms associated with the latter deficiency.

6. Using weight-for-height criteria, 26.7% of Salvadoran children under 5 were below the international standards in 1976.

7. The most recent information on moderate malnutrition (1980) suggests that, in rural areas approximately 20.5% of children have grade 2 or grade 3 malnutrition (low weight for age), while in urban areas the number is 12.1%. The country-
wide total was just over 15%.

8. A study in 1978 estimated that 12.6% of children under 5, 13.3% of pregnant women and 16.0% of lactating mothers were anemic by the standards of the World Health Organization.

9. Using arm circumference criteria, Stetler et. al. found the highest rates of malnutrition in the Northern agricultural areas of the country and the lowest rates in urban areas. In the same study, June to August appeared to be a higher risk period for protein-energy malnutrition. than January to March.

10. Daily per capita calorie consumption of the richest 5% of the population was 3,700 calories in 1974 while the mean consumption of the poorest 50% of the populaton was 1,345 calories. (Annex 13)

11. According to the nutrition program of the Maternal and Infant Division of MSPAS, 5,026 pregnant women were enrolled in the supplementary feeding program in 1983 as compared to 7,738 in 1979. The corresponding numbers for lactating mothers was 7,522 in 1983 and 4,122 in 1979. The number of malnourished children was 40,074 in 1983 and 49,542 in 1979. In 1983, 361,128 children were seen at out patient clinics. A total of 66,292 (18%) were found to be malnourished by GOMEZ criteria. 60% of these were refered to supplementary feeding program and 21% actually attended. (Annex 5)

12. Major causes of mortality in El Salvador are shown in Annex 14.

13. There are three primary streams of relief food available to <u>desplazado</u> communities: (1) World Food Program (WFP) food, available primarily to approximately 300,000 registered displaced persons, consisting of cornmeal, milk and vegetable oil (2) European Community (EC) food, available primarily to non-registered displaced persons and (3) Program Unit Emergency Food, intended as a supplement <u>only for workers</u> to replace calories expended on projects under the Jobs Program.

NUTRITION AND HEALTH SITUATION AMONG DESPLAZADOS

1. In the 1982 situation assessment, the OFDA team stated that they found no shortages of food, clothing, etc. in the markets in any of 10 villages. They were not able to find cases of severe malnutrition (although anthropometric measurements were apparently not made) so they could not justify the need for imported food. They felt that any nutrition problem that existed was due to lack of buying power.

   They also discussed some other data which this team has not yet been able to verify; that of the desplazados at that time, 20% were getting regular food aid, 60% were getting irregular food aid, and 20% were getting no food aid.

2. The intended daily ration under the CONADES program (Annex 6) is said to include the following: corn meal-200 gr., dry skim milk40gr., vegetable oil-2-gr., red beans-30 gr., sugar-3-gr., salt7-gr., rice-4-gr., (and since the time of Prouty's review in late 1982, the rice was not available). For the last year the supply of beans, sugar, and salt have been irregular, and often not provided at all. Budgetary constraints prevented CONADES from regularly purchasing these last three commodities during the last year. This food package provides an estimated daily total, if it were all available, of 1,227 calories versus a minimum need of 1,800 to 2,000 calories.

   In addition, the absence of red beans and sugar much of the time has meant that the energy (calories) short-fall provided by this ration was even larger. As pointed out by Prouty in a 1982 evaluation (while the beans were still on from the diet), "caloric intake is below normal."

3. Various transfer authorizations contain language suggesting that these foods have been considered to be a dietary supplement rather than a food basket: "When deemed necessary, to provide free distribution for the first 15 days of each month to hardship families suffering from chronic under nourishment and initially unable, for acceptable reasons, to participate in the activity programs."

4. The nutrition unit of MSPAS does not have information or programs specific to desplazados. The staff in that unit were aware that CONADES was providing a "food basket" to desplazados.

5. CONADES does not currently have available any information on nutritional status of desplazado children.

6. As part of the program evaluation, a major survey of nutrition in five desplazado camps is being planned by the Program Unit for February 1984. When completed, this will provide further information useful for managing the program. The team has suggested in a memorandum (Annex 8) several simple questions for the survey in order to enhance its management value.

7. In a background paper written for project HOPE, Alice Meyer, R.N., public health and community nursing consultant describes some of her findings in the desplazado population in December of 1983, "by the general state of malnutrition that seems to exist, it is obvious that the normal diet is deficient in both calories and protein."

   "A large number of children and adults show obvious signs of malnutrition; they have bleached and streaked hair, are extremely thin and frequently their growth appears to be stunted; this is especially true among children. The need for a supplementary nutrition program is obvious."

8. In a 1982 study, CONADES found that the mortality rate among desplazados was 22.4 per 1000 in the year prior to the survey. This mortality rate was 3.4 times as high as that of the general population (6.5 per thousand). Respiratory and gastrointestinal diseases caused 17.3% and 11.6% of the deaths respectively. Malnutrition was the cause of 2.6%. Nearly 2/3 of the deaths were among children under five years of age.

9. Data from the surveys carried out by the team in various camps are presented at the end of this section. A summary of the information presented in these tables is as follows:

   The current rates of malnutrition, as measured by arm circumference less than 13.5 cm., vary in the rural areas from 10% to 43% with a mean of 20%. Malnutrition rates in three urban camps vary from 8% to 10% with a mean of 9%. The numbers of children sampled are sufficient for us to consider the urban-rural difference to be significant.

   In addition, health and nutritional status of urban desplazados appears to be better than that of marginal zone inhabitants.

Child mortality rates, a surrogate for nutritional and general socio-economic status, were somewhat higher in rural camps than in urban camps; however, because of a difference in the way some of the questions were asked in the early surveys, one is less certain about the magnitude of differences in infant mortality rates between urban and rural areas.

The worst camp visited in terms of mortality malnutrition was Totolco in Chalatenango. Of nine children born in the last four years to the four women we spoke with, two (22%) had died and three (43%) of the seven survivors were malnourished by arm circumference.

The best camp by these same criteria appeared to be San Roque where there were no deaths among 25 children born in the last four years to the mothers we interviewed; two (20%) of the 20 who were available for measurement were malnourished.

Because of time and security constraints, the number of families questioned and the number of children measured were small in all these camps. Thus the possible statistical variation is large. Nevertheless, these urban-rural trends appear important.

One other interesting finding was that families which had three or more children within the last four years were more likely to have higher death rates and higher rates of malnutrition. These differences, which were true both within the urban group and within the rural group, are not surprising if one considers that problems in child spacing, leading as they do to early weaning and to less food to be shared by the family, has been shown in a number of situations to be associated with higher rates of malnutrition and death.

C. Current and Ongoing Nutrition Information Needs

The following nutrition-related information would be useful for program management:

1. Under-four or less than five mortality rates and malnutrition in other desplazado populations (registered but not in camp, non-registered in camp, non-registered not in camp)

2. A more extensive survey to confirm and extend the current findings so that we would have some information on which to base risk factors. That is, it would be helpful to know if characteristics such as whether the father is living in the home, whether one or both of the parents are employed, number of siblings, any particular age group, housing characteristics, the agency supplying food, maternal education, living with relatives, etc., are associated with higher or lower risk of either malnutrition of child mortality. The large nutrition survey being planned by the Program Unit of USAID for February 1984 will help provide much of this information.

3. A better description of how the desplazados population compares with the remainder of the population of El Salvador. That is, how much does being a desplazado add to or subtract from a child's risk of mortality or malnutrition? A major survey of nutritional status of the general population of El Salvador is being planned to begin in March by INCAP (Instituto de Nutricion de Centroamerica y Panama). This should help provide much of the needed comparative information. We have suggested inclusion of questions which would enable separate analysis of desplazado data.

4. The amount of food families are actually receiving from various sources. Since the food basket currently supplied by various agencies is seriously deficient in calories, one might wish to know the sources and amounts of additional calories the family consumes.

5. The amount and types of foods children are actually eating. This type of survey can and should be designed and carried out under the supervision of an experienced nutritionist.

Child Mortality and Acute (Recent) Malnutrition Among Displaced and Marginal Populations in El Salvador January - February 1984

Background

As part of our assessment of the health and nutritional status of desplazados, the team carried out a series of surveys within a number of the camps and population groups which were visited. These surveys were intended to provide health background data for evaluation and subsequent recommendations.

Methods

Simple questionnaires were designed to collect information on the number of births to women within the last four years; the number and causes of deaths of any of the children born during the last four years; the length of time that the family had been displaced; and the nutritional status of children.

The population groups sampled were not random. They were selected to represent a number of geographic areas and types of population concentrations.

Sampling within the populations was done as randomly as possible. In larger populations, every tenth house was chosen; in smaller groups every fourth or fifth house was chosen.

Data on the household, the children, deaths, and nutritional status was aggregrated within each of six population groups (Table I) and analyzed by standard techniques including calculation of rates and Chi square tests for significance.

Nutritional status was measured by the standard arm circumference technique (AC). This measurement is grossly independent of age within the age group sampled. It is a surrogate for the measurement of energy stores in the body fat layer; measurements below 13.5 cm have been shown to correlate with increasing rates of child mortality. Arm circumference standards are not different from one ethnic group to the next.

Households with no births within the last four years were omitted from any calculation.

Results

A total of 227 households were sampled (Tables 2, 3); 60 of these were from marginal zones within the city of San Salvador (Table 3). Within these households, 389 children were born during the last four years. Of these children, 49 (12.69%) had died. Of the remaining 319 who were present and eligible for measurements, 45 (14.1%) had AC below 13.5 cm.

Table 4 compares the child mortality and nutrition status of marginal zones with DP population within the city of San Salvador. The mortality rate among marginales (16 %) is more than five times the rate among the desplazado group. It should be noted that the largest number of those groups came from two camps, (22nd of April and Cafetelon) both of which are part marginal and part desplazado (Table 5). The differences between mortality in these two groups is highly statiscally significant. Although there is a difference in the malnutrition rate between the two groups, this difference is not statistically significant with the sample sizes the team was able to obtain.

Table 6 compares the mortality and malnutrition rates between desplazado populations inside the city and those in the camps outside the city of San Salvador. There is a higher mortality in the camps. The higher rates of malnutrition in the camps approach but do not reach a significant difference.

Table 7 is a comparison of child mortality and nutritional status of three types of displaced persons outside the city of San Salvador. The dispersed population included a number of families in colonias in San Miguel. Mortality and malnutrition in this group is compared with the previously described camp population. The mortality rate is higher (but not statistically significantly) among the dispersed population while the rates of malnutrition are approximately the same. Mortality among DPs in two non-registered populations was three percent.

Rates of mortality and malnutrition were compared for families with varying numbers of children during the last four years. These data (Table 8) indicated that families with 3 or more births of children under four have higher rates of mortality, and higher rates of malnutrition. (These later data suggest restricted access to food since one would not expect other causes of mortality to be affected to this degree by family size or numbers of small children.) Tables 9 and 10 indicate the numbers of deaths by causes and the numbers of deaths by age at death respectively.

Data provided to the team during a visit to the Salvadoran Refugee camp at Mesa Grande, Honduras indicated that the malnutrition rate measured by two different methods (growth monitoring by weight/height and survey by Gomez scale) was less than three percent. These data confirmed our impression of this camp.

Conclusions and Discussion

The following points seem immediately relevant; desplazado children in the city in families receiving assistance are at a lower risk of mortality and perhaps lower risk of malnutrition than marginal zone children. Since the largest proportion of the children in this comparison come from the same environments (22 April and Cafetelon), the food and services provided by CONADES probably makes the difference.

The same trends are visible when only the population in 22nd of April and Cafetelon, the two camps which contain both desplazados and marginales, are compared. There is a trend toward better nutritional status suggesting that the food may be having an effect. It would take a larger sample to be sure whether an effect exists. On the other hand, there is a significant difference in child mortality, larger than the differences in nutritional status, suggesting that the access to health care provided by the CONADES Jobs Program nurses may have had an effect on mortality. It is perhaps important that three of the deaths among marginal zone children were from measles.

There are a number of potential problems with a study of this type. First, the camps were not randomly chosen but were chosen to provide a sample of various types of camps and types of population concentration. Therefore, the data as collected and analyzed may not be representative of all desplazado populations of that type in El Salvador. Nevertheless, because the sampling within the camps was on a representative basis, the differences that were found between camps do represent true differences between those specific groups.

Another problem is the small samples size(s). Having small sample sizes most often causes problems in terms of failing to detect a difference which really exists. That is, when a statistically significant difference is found, the problem of small sample size can be discounted. When a significant difference is not found, the small sample size may have contributed to the inability to find a difference. One possible example of this can be seen in Table III where the rate of malnutrition in the marginal populations (13 of 89) is nearly twice as high as malnutrition rate in the desplazado population (7 of 91). Despite this apparent striking difference in malnutrition rates, such a difference is not statistically significant. Nevertheless, it is reasonable to suppose that with a larger samples size, i.e., twice the number of households, a statistically significant difference might be found.

With these caveats in mind, it is possible to draw the follwing conclusions:

1. Within the city of San Salvador, the mortality rate is higher among marginal zone populations than among desplazados. A similar trend may also be present in the malnutrition rate but a larger sample is needed to confirm or refute this.

2. The child mortality rate in desplazado camps outside the city of San Salvador is higher than the rate among desplazados within the city. The rate of malnutrition is higher but, again, this small sample size prevents the differences from being statiscally significant.

3. Outside of San Salvador, the mortality rate is higher among the dispersed population, as represented by San Miguel, than among the camp population. This difference is not yet

statistically significant. The rates of malnutrition are similar in these two populations. Mortality among a small sample of non-registered DPs in two camps was relatively lower than among the dispersed population.

4. The malnutrition and mortality rates are significantly higher in families which have had three or more children during the last four years than in smaller families. Families that have had only one child have the lowest mortality and malnutrition rate.

5. Numbers of deaths were similar in each year of age during the entire pre-school period, suggesting that environmental problems such as diarrhea and vaccine-preventable diseases were having an effect. This is important because these are preventable diseases.

6. The nutritional status of Salvadoran children in refugee camps in Honduras is at least as good as that seen among the better off DP populations within El Salvador.

TABLE 1

CATEGORIES OF STUDY POPULATIONS
EL SALVADOR, JAN. - FEB. 1984

1. Urban Marginal Zone Populations: Soyapango, 22 de Abril, Cafetelon.

2. Urban Desplazado Populations: 22 de Abril, Cafetelon, San Roque.

3. Desplazado Populations in camps outside City of San Salvador: San Francisco de Gotera, Berlin, San Vicente, Chalatenango.

4. Desplazado Populations Dispersed in San Miguel.

5. Unregistered Desplazado Populations.

6. Salvadoran Refugees in Honduras.

TABLE 2

Summary Data, Reported Mortality and Malnutrition Among Desplazado and Marginal Zone Children by Survey Site, El Salvador

Metropolitan San Salvador

Site	Households	Children Under 4	Deaths No.	Deaths %	Malnutrition No.	Malnutrition %
San Roque	11	25	0	0	2/20	10
22 de Abril	20	28	1	4	1/26	4
Cafetelon	30	52	2	4	4/45	9
	61	105	3	5	7/91	8

Outside City of San Salvador

Dispersed Population

Site	Households	Children Under 4	Deaths No.	Deaths %	Malnutrition No.	Malnutrition %
San Miguel	36	62	15	24	9/47	19%
Totolco Chalatenango	6	9	2	22%	3/7	43%
Morazan	9	12	2	17%	1/10	10%
Morazan	4	7	1	14%	0/5	---
Berlin	9	14	1	7%	2/13	16%
San Vicente-Caritas	30	50	4	8%	7/39	18%
San Vicente-Ferrocarril	10	17	4	24%	2/13	16%
Ilobasco	7	5	0	---	1/5	20%
	71	114	14	12%	16/92	17%
All DP's	167	231	32	11%	32/230	14%

TABLE 3

Summary Data, Reported Mortality and Malnutrition
Samples of 3 Marginal Zone Populations,
San Salvador January, 1984

Site	Households	Children Under 4	Deaths No.	Deaths %	Malnutrition No.	Malnutrition %
22 de Abril	20	37	7	19%	4/30	13%
Cafetelon	10	21	4	19%	1/17	6%
Soyapango	30	50	6	12%	8/42	19%
	60	108	17	16%	13/89	15%

TABLE 4

COMPARISON OF CHILD MORTALITY AND NUTRITIONAL STATUS
OF MARGINAL ZONE AND DP POPULATIONS
INSIDE SAN SALVADOR (CITY)

Site	Households	Children in Last 4 Years	Deaths No.	Deaths %	Malnutrition No.	Malnutrition %
Marginal	60	108	17	16%	13/89	15%
Desplazados	61	105	3	3%	7/91	8%

* probability, less than 0.005 - SIGNIFICANT

** not a significant difference with this size sample

TABLE 5

COMPARISON OF CHILD MORTALITY AND NUTRITIONAL STATUS
OF MARGINAL ZONE AND DP POPULATIONS
IN TWO MIXED POPULATIONS, CITY OF SAN SALVADOR
JANUARY - 1984

Populations	Households	Children in Last 4 Years	Deaths No.	Deaths %	Malnutrition %
Marginal Zone	30	58	11	19%	11%
Displaced	50	80	3	4%	7%

*probability less than 0.01 - SIGNIFICANT

**difference not statistically significant

TABLE 6

COMPARISON OF CHILD MORTALITY AND NUTRITIONAL STATUS
OF DESPLAZADO POPULATION
INSIDE AND OUTSIDE (in camps), SAN SALVADOR (CITY)

Populations	Households	Children in Last 4 Years	Deaths No.	Deaths %	Malnutrition** %
Camps-outside	70	114	14	12%	17%
City DP's	61	105	3	3%	8%

*probability less than 0.05 - SIGNIFICANT
**difference not statistically significant

TABLE 7

COMPARISON OF CHILD MORTALITY AND NUTRITIONAL STATUS
OF DISPERSED AND CAMP DP's
OUTSIDE SAN SALVADOR (CITY)

Populations	Households	Children in Last 4 Years	Deaths No.	Deaths %	Malnutrition** %
Dispersed	36	62	15	24%	19%
Camps	70	114	14	12%	17%
Nonregistered*	40	61	3	3%	--

**not a significant difference

*data collected through the courtesy of Cruz Verde

TABLE 8

COMPARISON OF CHILD MORTALITY
AND MALNUTRITIONAL RATES BY NUMBER OF
CHILDREN BORN TO MOTHER IN LAST 4 YEARS
DESPLAZADOS AND MARGINAL ZONE POPULATIONS
El SALVADOR, JAN. - FEB. 1984

NUMBERS OF CHILDREN BORN IN LAST 4 YRS.	NO. OF FAMILIES	CHILDREN UNDER 4	DEATHS No.	%	AC BELOW 13.5 cm. %
3 or more	31	99	24	24%	25%
2	100	200	29	14%	17%
1	96	96	5	5%	3%

TABLE 9

CAUSES OF REPORTED EARLY CHILDHOOD MORTALITY
AMONG DESPLAZADO POPULATIONS,
EL SALVADOR, JAN. 1984 SURVEY

CAUSE	NUMBER OF DEATH	PERCENT OF DEATH OF KNOWN CAUSE
Unknown	6	-
Diarrhea	12	46
Fever	2	8
Respiratory	7	27
Measles	2	8
Congenital Anomaly	1	4
Other	2	8
	32	

TABLE 10

SAMPLE OF
AGES AT DEATH OF DESPLAZADO CHILDREN
EL SALVADOR - 1980-84

AGE (MONTHS)	NUMBER	% OF DEATHS OF KNOWN AGE
Unknown	2	--
1	2	9%
1-11	4	17%
12-23	5	22%
24-35	7	30%
36-47	5	22%
All	25	

NUTRITION BIBLIOGRAPHY

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CONCLUSIONS

Enough information is available on DP children to be concerned about the nutritional status of young children and, by implication, other vulnerable groups. Acute malnutrition is present in the camps and in other DP populations, and the "food basket" provided by CONADES is deficient in calories (see point 2 under previous discussion on nutrition and health situation among desplazados). The Program Unit survey in February 1984 should provide information on a far larger sample of families, enough to solidify these conclusions.

The finding of a major nutritional problem in this situation is not surprising since it has been the experience of most agencies that refugees or displaced persons (by whatever name) with little or no access to income and living in camp situations almost invariably have malnutrition among their vulnerable sub-groups.

In the presence of data about malnutrition in the registered camps and in the absence of information to the contrary about the other groups, there is reason for concern that nutritional status among the vulnerable groups in those other situations might be similar to or worse than what we have begun to document in the camps containing registered desplazados. (One might hypothesize several reasons that the situation among the other groups would be worse than registered camps; alternatively one might hypothesize reasons thatsituations might be better.) In the absence of any conclusive data, however, the mininum prudent public health approach would be to recommend further data collection in those settings and in additional registered populations.

E. Recommendations

1. To increase the food basket to the population in the camps of registered desplazados outside of San Salvador to bring it up to a level compatible with long-term survival, at least until one can be sure that sufficient other jobs, other income, or other food sources are available (Annex 1).

2. To set up supplementary feeding programs in all camps where more than a handful of children or other vulnerable people exist. A detailed discussion of supplementary feeding programs is included elsewhere.

3. To continue to expand the Jobs Program with its attendent food-for-work program. (Any program to increase the buying power of desplazados should be useful).

4. To thoroughly analyze the results of the Program Unit nutrition survey of this month and the INCAP nutrition survey to begin in March to obtain clues about other segments of the population and about risk factors that might be used to better target food aid.

5. To solicit data from registered DPs who do not live in camps. A draft proposal for a survey to obtain these data is included below (Recommendation for a nutrition survey of non-registered displaced persons.).

6. To continue to collect more data by:

   a Obtaining arm circumferences of new arrivals at current camps; (See Annex 4)

   b. Obtaining arm circumferences in other DP populations where it has not been done, and by;

c. Beginning regular surveillance in both supplementary feeding programs and, as part of general camp surveillance, for nutrition-related deaths and hospitalizations.

7. See comprehensive recommendations in the following section.

NUTRITION PLANNING OVERVIEW

Malnutrition is a long-standing and major problem for children and other vulnerable groups in El Salvador. Based on experience elsewhere, evidence of malnutrition might be expected to be greater in camps of unemployed displaced persons than among displaced persons dispersed throughout the general population. In fact, the limited data collected by the evaluation team suggests that the nutritional status of the vulnerable groups among the DPs in San Salvador is somewhat better than that of the marginal zone population in the city. In addition, the nutritional problem of greatest concern among desplazados is not the chronic malnutrition characteristic of all developing country populations (although they too suffer from that problem). Rather, the concern at this time is acute and ongoing malnutrition which may be more common among desplazados than among the general population of El Salvador. This latter form of malnutrition is associated with increased risk of mortality and permanent damage. For these reasons, a comprehensive nutrition program is proposed, made up of several components centered around a Supplementary Feeding Program in each camp.

This nutrition program is composed of the following elements:

1. The "Food Basket": This includes the composition and delivery (to the family) of the food which makes up the basic ration for the population. Improvements in the quality and quantity of the current basic ration are recommended.

2. A Supplementary Feeding Program (SFP): An SFP is aimed at the vulnerable members of the population who have greater energy needs than are generally met by the "food basket." These groups are children under 5 years of age; pregnant women; lactating women; persons recovering from serious

illnesses; and participants in the Jobs Program. The SFP, which could serve as the foundation of a comprehensive maternal-child health program, is the focal point of a comprehensive nutrition and health program. For instance, it will serve as a site and vehicle for providing vaccinations, anti-parasite treatment and education, family planning education and materials, nutrition education, etc.

3. A Therapeutic Feeding Program: This is intended as a treatment program for those children who are found to be more severely malnourished, either because they have not yet been entered into a supplementary feeding program or because of some other difficulty in their receiving appropriate supplementary feeding. Criteria for entering this program will be either anthropometric (body measurement) cutoffs or a clinical diagnosis of malnutrition. This program, which need not necessarily be hospital based, provides frequent feedings of food of high calorie content, the single most important treatment for malnutrition, and is based on the involvement of the mother in the treatment regimen

4. Nutrition Education: This component, perhaps the one that has the most potential for having a lasting effect, consists of, but is not limited to, the teaching of mothers about such items as: appropriate foods for weaning, the importance of using clean water for food preparation; the relationship between feeding and malnutrition; nutritional needs during pregnancy; etc.

5. Growth Monitoring: This aspect, which consists of regular measurements of the height and weight of children, is an integral part of both supplementary feeding programs and nutrition education. Repeated measurements of a child's

growth process provides a way for both the health worker and the mother to assess normal development

6. A Nutrition Surveillance System: This system, based on some of the same data available from growth monitoring, is intended to be an important component of an overall health and nutrition surveillance system within the population. By providing data on the frequency of malnutrition (i.e., abnormal measurements of nutrition-related diseases) among the populations being fed, this system becomes a tool for ongoing evaluation of the various feeding programs. Through more intensive investigation of nutrition-related deaths and hospitalizations, and through investigations of clusters of malnourished children, it will also provide a mechanism to target improvements in the feeding programs.

7. Home Gardening: Home gardens will provide an opportunity for desplazados to put some of their nutrition education to use while at the same time supplementing the diet of their families.

THE NUTRITION PIPELINE FOR DESPLAZADO CAMPS

Activity Decision	Desired Outcome	Current Responsibility	Indicators	Current Status
Choice of Foods	Food Basket	USAID/CONADES WFP	Nutritional Adequacy	No lime water, No iron, insufficient mix
Amount of Foods	Growth/Health Status	USAID/CONADES	Malnutrition Growth	Inadequate
Importation	Sufficient Supplies to Meet Needs and Contingencies	GOES, WFP, USAID	Stock Levels In-Out Flow	OK
Protected Storage	No Loss or Spoilage	CONADES	Amount of Loss or Spoilage	OK
Distribution to Feeding Agencies	Adequate Stocks	CONADES	Waybills, Receipts	
Delivery to Distribution Center	Adequate Supplies to Meet all Needs with Minimal Reserves	CONADES, Church, CONARA, Military	Waybills, Receipts	Delays, Deficiencies (local)
Storage at Distribution Center	No Loss or Spoilage	Municipalities, Churches	Visual Inspection	OK
*Distribution to Families	Adequate Family Supplies	Municipalities, Churches*	Receipts	Monthly Deliveries Irregular (local) Inadequate Amts.
*Storage in Homes	Adequate Stocks with Minimal Spoilage	Mothers*	Nutritional Status	Niacin Malnutrition
*Proper Preparation	All Available Nourishment	Mothers*	Nutritional Deficiency Diseases	Niacin Deficiency
*Provision of Adequate Amounts to Children	Satiety, Good Health	Mothers*	No Acute Malutrition	N/A

*Activities, decision and groups on which nutrition education could have an impact

GENERAL FEEDING PROGRAM

The Food Basket

The term "food basket" refers to the basic ration supplied to displaced persons residing in camps or camp-like situations. This implies regular provision of adequate amounts of a nutritionally balanced diet. The food basket should be a mix of foods designed to provide the necessary balance of calories, nutritional value, vitamins, minerals, etc., for a basic healthy diet. As conditions permit, the food in the basket should be periodically changed to provide for variety and to ensure that all nutritional needs are met.

The following are some basic principles of a general feeding program food basket:

1. Calculation of the ration is best made on the basis of at least 1800 kcal per person per day, regardless of age.

2. The food basket should correspond to the nutritional needs and food habits of the population (e.g., maize, frijoles, rice, oil, milk).

3. Foods should be as few in number as possible but should be available to the population in sufficient quantities.

4. Items such as salt, sugar, tea, coffee, etc., should be available to the population as part of the ration of those who are entirely dependent upon the food basket.

5. Provision of information to people about the schedule and content of (and any changes in) the relief program is important. Each family should be aware of the amount it is supposed to receive.

6. Distribution no less often than every two weeks (versus monthly) is recommended because of the difficulties in economizing food among hungry people. In addition, more frequent food distribution helps alleviate problems of food storage.

The Current Food Basket

Displaced persons in some camps have alleged that food deliveries had not been made for several months. AID officials completed a thorough investigation of these allegations while the assessment team was in country and found them to be incorrect.

Even if food delivery problems are completely disregarded, there yet remain serious questions about the adequacy and the balance of the current food basket for displaced persons. At the present time, each displaced family is supposed to receive a monthly allotment of yellow cornmeal, vegetable oil and dried skim milk. Annex 6 indicates the amount per person and the relative nutritional value of each commodity provided. These commodities are supplied from the World Food Program (WFP) through DIDECO and CONADES.

In addition to the above supplies, those employed in the Jobs Program receive an additional ration of rice, maize and milk. Annex 7 indicates the quantities provided and the relative nutritional values. Foods for this workers supplement are provided by the Food for Peace Program under Title II of the PL.480 Program.

Displaced persons residing in camps supported in part by CARITAS receive food supplied through the Catholic Relief Services of the U.S. Catholic Conference, with commodities obtained from the European Economic Community (EEC).

Displaced persons residing in communities where CRS supports Mother-Child Health (MCH) programs are often able to participate in

the normal feeding programs carried out by CARITAS/CRS in various localities. The foods which are currently being distributed consist of PL.480 Title II commodities.

The central problem in foods being supplied to displaced persons is the poor basic diet of the displaced persons residing in the camps supported only by CONADES. The diet (Annex 6) is inadequate to provide for the basic nutritional needs of the family. Several problems exist. First, the corn is being provided without lime. Lime water is traditionally used to help break down the corn and release the nicotinic acid inside the kernels. It is assumed that the displaced persons will have access to lime in the commercial markets. However, a check of the corn being used by most families in the camps in Chalatenango and Ilobasco showed that few families are able to afford the lime and none of those interviewed understood the function of lime water in the preparation process. Therefore, the full nutritional value of the corn is not being obtained and the potential for deficiencey of nicotinic acid (pellagra) exists.

The second problem relates to the provision of powdered milk. Powdered milk must be prepared with the water on hand, which in many camps is probably bacteriologically contaminated; therefore, the milk becomes contaminated in solution. Contaminated water and foods made with this water are probably major contributors to the diarrhea in the camps.

The provision of a partial food basket in this situation was apparently based on the belief that sources of income available to displaced persons would enable them to supplement their diets appropriately and sufficiently; that is, through employment opportunities, the displaced persons would be able to purchase the foods that they need for a balanced diet.

In the original investigations carried out in 1981 leading to the program document, the consultants pointed out that adequate food supplies existed in the areas where large concentrations of displaced persons were residing. Furthermore, the displaced persons indicated that their top priority was employment opportunity. Therefore, the primary emphasis of the program was to focus on providing the employment opportunities that would indirectly supply the necessary food to both the adult and child population.

As far as persons in camps are concerned, the thesis that the Jobs Program could supply enough cash to enable people to buy the foods they need and have positive impact on the nutritional status has not been borne out. This was one of the goals in the design stage of the Jobs Program which simply could not be achieved due to inadequate funding availability. One cannot demonstrate either a significant improvement in overall nutritional status or that the Jobs Program has provided enough cash to offset the deficiency in the basic food ration.

In addition, without extensive nutrition education programs in the camps, it is uncertain that parents would purchase the correct foods to provide for the nutritional needs within the displaced persons camp setting. (A study in El Salvador in 1967 indicated that only 16% of mothers understood the relationship between dietary deficiencies and signs of malnutrition.)

Furthermore, most heads of households in the displaced persons camps are women. While women are not excluded from the Jobs Program, in practice only about 20% of the participants are women. This is because they cannot leave their young children alone while they are working, as well as for cultural and other reasons which militate against women in this society taking jobs normally carried out by men. In households headed by women, therefore, the opportunity for obtaining the cash necessary to have an impact on family food

supply is greatly reduced with the current mix of employment available through the jobs program.

Jobs are offered on a rotational basis for two-week blocks of time. In many cases, the workers are allowed to work for a subsequent time block, but the program attempts to provide equal opportunities for all adult displaced persons to work at least several weeks each year. Given the fact that the wage earner is earning only half the minimum wage, it is unlikely that the amount of money earned could support the total additional food needs of the family for a significant period. (Although the maximum total number of persons employed at any one time in the Jobs Program is approximately 11,000, there are 270,000 displaced persons, representing 50-60,000 families, registered with CONADES alone).

Recommendations

Because other sources of work and income for displaced persons are the exception rather that the rule in El Salvador, with its government-estimated unemployment rate of 40%, increased intervention in the DPs diet must be recognized as a high priority. This intervention must take place at two levels.

First, the food basket must be designed and supplied to the displaced persons to provide a larger proportion of the nutritional needs of the population. Second, a supplementary feeding program (SFP) must be designed and implemented to provide services to the vulnerable groups (see section on supplementary feeding).

Two options are available for the first intervention. The first is to upgrade the CONADES capacity to provide an enlarged food basket by requiring them to meet the appropriate standards of food basket provision and evaluation (Annex 1).

A second option for the food basket is to seek the services of an organization which has staff who are experienced in food distribution in situations of this kind. This might be an existing agency or one which is created by several others in order to assist in this specific situation. The importance of experienced staff for this role cannot be overemphasized.

Several reasons have been stated for not providing the entire food supply for otherwise dependent persons. Nevertheless, the food supplied by feeding agencies must more accurately reflect the realities of employment-related income and the realities of other food sources.

As other options, such as expanded employment opportunities, school feeding programs, etc. come into play, the food basket can be adjusted accordingly. In the meantime, the food basket should be a basic, rather than a supplementary, ration.

Methods of Evaluation

In addition to the techniques usually used to monitor the flow of commoddities in a feeding program, evaluation of this program should include outcome data such as recipients' perceptions and, most important, nutritional evaluation of the pre-school children of those recipients.