

NUTRITION IN HAITI: AN ANALYSIS OF PROBLEMS AND SOLUTIONS

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I. INTRODUCTION

The Academy for Educational Development's Nutrition Communication Project carried out a Nutrition Assessment between August and September 1988 with funding from the USAID Mission.

A. OBJECTIVES

The major goal of the Nutrition Assessment was to provide a necessary description and analysis both of nutritional problems in Haiti and also of the intervention activities that have already been tried to facilitate effective programming in the nutrition sector, especially in the area of nutrition education programs. While the original scope of work stressed the assessment of nutritional problems and their causes, the USAID/Haiti Mission was particularly concerned with the analysis of lessons learned from several decades of highly diverse nutrition program activities. The output of phase one is a document that assesses these issues and also provides a list of recommendations as to the types of nutrition sector activities that should be supported by USAID and other donors. More specifically, the document addresses the following objectives:

- 1) To describe the major nutritional deficiencies in Haiti and to document the magnitude of these deficiencies; also, to identify subpopulations that are particularly at risk of various problems.
- 2) To describe major factors related to these nutritional problems with specific focus on determinants that are susceptible to educational interventions.
- 3) To assess related constraints to behavioral change: i.e. socio-economic and attitudinal variables.
- 4) To describe the various types of nutrition and educational intervention programs that have been undertaken in Haiti.
- 5) To develop a framework for assessing these programs.
- 6) To identify specific educational/growth monitoring/promotion (GM/P) programs that should be studied as possible replicable approaches.

- 7) To identify gaps or problems in intervention strategies that might feasibly be filled by USAID's future nutritional sector activities. These gaps, again are focused on the educational solutions.

B. METHODOLOGY

The methodology used was a combination of literature review, interviews with key technical and program experts and managers, and on-site qualitative assessment of selected project activities. A list of individuals and organizations contacted is included in the appendices. Other annexes provide methodologic details and specific findings from the field studies. A standardized approach was developed for the managers' interviews (please see Annex I) and also for the rapid assessment of ongoing field activities (please see Annex II).

The consultant team consisted of Nancy Mock, team leader; Claire Segala, assistant leader; Daniel Verna (an MD, MPH nutrition doctoral student at Cornell); Imma Piard (a woman who has worked quite extensively with NGO's in Haiti); and Marie-Christine Bertrand (a communication specialist who currently works with INSHAC-Haitian Community Health Institute). The team was organized as follows: Mock was in charge of overall organization of the team as well as developing the methods and framework and completing a preliminary review of studies and programs. Segala continued Mock's work and was to focus more heavily on the epidemiologic aspects of the assignment. Verna assisted Segala in a largely epidemiologic capacity. He helped to gather and analyze relevant data as well as to draft certain sections of the report. Bertrand and Piard were largely involved in the assessment of programs. They assisted in the development of the program assessment methodology and also completed several program manager and on-site manager interviews. All team members participated in several program manager interviews in order to approximately standardize the approach to information collection.

The last part of this Assessment, consisting of site visits, manager interviews, observations, and some informal testing of personnel and mothers' nutrition knowledge is still ongoing.

Organization of the Report

A few words about this report are in order. Due to time constraints, in the first section only the three major nutritional deficiencies in at-risk groups have been considered: protein-energy malnutrition, vitamin A deficiency and nutritional anemia. These are, by far, the most important nutritional problems in Haiti both in terms of number of people affected and seriousness of functional consequences. In the second section devoted to malnutrition determinants, emphasis has been given to infant feeding practices (essentially breastfeeding and weaning) and their determinants. It is clear that more investigation is needed of pre-schoolchildren and other groups. The section on morbidity focuses only on the major illnesses related to nutritional status.

The third section makes an attempt to describe the five identified models of nutritional interventions directed towards pre-school children which are currently operating in Haiti.

II. NATURE AND MAGNITUDE OF NUTRITIONAL PROBLEMS

A. BACKGROUND

Nutritional deficiencies are among Haiti's most serious public health problems. In 1985, it was believed that 75 percent of all deaths among children under age five were associated with or caused by malnutrition (97). A few previous studies support this. In Petit Goave, malnutrition was responsible for the deaths of 33 percent of children one to four years of age in 1977 (138). At Hospital Albert Schweitzer it was the principal cause of 31 percent of deaths recorded in 1979-80 and was the most frequent primary diagnosis among children in the one to four year-old (71 percent) and the five to fourteen year-old (35 percent) age groups (19) who died in the pediatric services of the hospital.

Protein Energy Malnutrition, Nutritional Anemia and Vitamin A deficiency are the most important nutritional problems (90,129). Other deficiencies have also been documented including riboflavin (123) and iodine (121).

The level of protein energy malnutrition is among the highest in the Americans. As elsewhere, however, the most nutritionally vulnerable groups in the Haitian population are the underprivileged pre-school children and pregnant and lactating women (30 percent of the Haitian population live under the threshold of absolute poverty). Based on the 1982 census, Table 1.1 shows the estimated numbers of pre-schoolers, and pregnant and lactating women in Haiti:

TABLE 1.1.

Estimated Numbers of Children Less than 5 Years, and Pregnant and Lactating Women in Haiti

| | 1988 | 1989 | 1990 |
|---------------------------|-----------|-----------|-----------|
| pre-schoolers (< 5 years) | 828,806 | 852,857 | 866,665 |
| pregnant women | 287,319 | 296,003 | 300,443 |
| lactating women | 132,609 | 136,617 | 138,666 |
| total population | 5,525,375 | 5,692,380 | 5,777,766 |

sources : IHS, DHFN

According to the 1982 census, children under five years represent 15 percent of the total population. Some 73.3 percent of them live in rural areas and 11.1 percent in the metropolitan region (148). The remainder live in other urban areas.

B. PROTEIN ENERGY MALNUTRITION

1. AMONG CHILDREN

a. National overview

Data from nutrition surveys conducted between 1958 and 1976 indicated that between 24 and 52 percent of children aged 0 to 6 years were malnourished at the second and third degree, according to Gomez's index of weight for age (80).

The 1978 National Nutritional Survey (NNS), the only national level nutritional assessment (37, 80), provided the most detailed evidence of the severity of the problem. This survey revealed that almost three-quarters of Haitian children under five years were undernourished, with approximately 30 percent suffering moderate or severe malnutrition (second and third degree Gomez classification). Further, 6.0 percent of the 5353 children examined were wasted (weight for height value less than 80 percent of the NCHS/CDC reference median), and 26.6 percent were stunted (height for age value less than 90% of the reference median). Bilateral pedal oedema was found among almost three percent of the children suggesting both protein and energy deficiency.

Assuming that no major change has occurred since the survey, a national overview of the malnutrition problem would be as follows:

TABLE 1.2

**Magnitude of Protein-Energy Malnutrition Among
Haitian Children Under 5 Years***

| | % malnourished | Number malnourished |
|-------------------------------|----------------|---------------------|
| WASTED | | |
| < 80% | (6.0) | 49,728 |
| < 85% | (15.9) | 131,780 |
| STUNTED | | |
| < 90% | (26.6) | 220,462 |
| < 95% | (61.2) | 507,229 |
| WASTED AND STUNTED | | |
| < 90 ht/age and < 80 wt/ht | (3.1) | 25,692 |
| UNDERWEIGHT | | |
| < 60% | (3.2) | 26,521 |
| < 75% | (24.1) | 199,742 |
| < 90% | (46.0) | 381,250 |

*1988 underfive population 828,806 based on projections from latest census.

b. Regional variations

By any anthropometric criteria, the 1978 NNS indicated only slight variations in malnutrition rates between regions. There were, however, marked urban-rural differences, with urban children on the average doing better (see Tables 1.3.1, 1.3.2 and 1.3.3).

It is important to disaggregate urban areas into marginal and other areas, however, because children living in marginal zones exhibit distinct nutritional patterns. 1981 data from Cite Simone suggested that children from these zones were nutritionally more similar to rural areas and at times significantly worse. Wasting and stunting affected more children aged 3 to 23 months in Cite Soleil than in the general population of children of the same age (see Table 1.4) (18, 130). Thus, it is possible that in areas not covered by aggressive health programs, marginal populations may suffer greater nutritional

stress than do their rural cohorts. Data are unfortunately very limited for these populations. More attention should be focused on these urban subpopulations since this is the most rapidly growing segment of Haiti.

c. Variations by age group

The 1978 NNS showed that chronic malnutrition increased with age. A marked increase in stunting began in the second year of life. This height deficit continued as children grew older. Almost 40 percent of Haitian children exhibit chronic undernutrition by age five; the problem is worse in rural and probably also in marginal urban areas (see Figures 1.1 and 1.2).

The 1981 data from Cite Soleil showed that wasting and stunting started earlier among the children there. By the second trimester of life, a larger proportion of Cite Soleil children were wasted than in the NNS sample. Stunting appeared in 12 percent of the Cite Soleil children by the third to the fifth month of life (1.7 percent in NNS) and 29 percent of children 12 to 23 months of age (15.8 percent in NNS).

d. Change over time

Only limited conclusions can be drawn about trends in nutritional status over time since there is no recent information available on malnutrition prevalence at the national level and although growth monitoring data are collected throughout the country there has been no systematic analyses of these data.

Even so, in two areas with comprehensive Child Survival (CS) programs (AMOSSE program in Jacmel and Complexe Medico-Social in Cite Soleil), evidence suggests a slight decrease in the prevalence of malnutrition for the underfive age group.

Comparing data from a community survey in Jacmel (72) and surveillance data in Cite Soleil with 1978 NNS data, the greatest differences appear in the normal and second degree Gomez categories. A greater proportion of children are now found in

the normal category and fewer in the second degree category. However, the proportion of children with severe malnutrition has not significantly changed.

TABLE 1.5

Nutritional Status of Children under Five Years

(1978 NNS national and West region and 1987 community survey in Jacmel)

| | normal % | gomez1 % | gomez2 % | gomez3 % |
|-------------|-------------|-------------|-------------|-------------|
| Haiti 1978 | 26.8 | 46.0 | 24.1 | 3.2 |
| West 1978 | 26.8 | 47.2 | 23.4 | 2.7 |
| Jacmel 1987 | 54.3 | 36.0 | 7.6 | 2.1 |

TAELE 1.6

**Nutritional Status of Children Under Five Years in
Cite Soleil 1984-1987**

(Data are from nutrition surveillance activities; these figures represent weighings and not number of children)

| | 1984 | 1985 |
|--------|---------------|---------------|
| normal | 13841 (37%) | 13841 (41.5%) |
| gomez1 | 12248 (36.4%) | 12248 (36.7%) |
| gomez2 | 6452 (23.9%) | 6452 (19.3%) |
| gomez3 | 818 (2.7%) | 818 (2.5%) |
| Total | 20965 | 33359 |

| | 1986 | 1987 |
|--------|---------------|---------------|
| normal | 14629 (43.1%) | 19268 (46.5%) |
| gomez1 | 12427 (36.7%) | 14240 (34.4%) |
| gomez2 | 5974 (17.6%) | 6331 (15.3%) |
| gomez3 | 881 (2.6%) | 1554 (3.8%) |
| Total | 33911 | 41393 |

Regarding kwashiorkor, no recent systematic and comparable information is available; however, limited data and anecdotal information from several health professionals interviewed suggests that the situation has been improving since 1958. In 1958, Jelliffe found that seven percent of the children in a

community survey to have kwashiorkor(90). The 1978 NNS found three percent. In 1981, Baer and Rhode found less than one percent oedema in rural northern Haiti(12). These surveys, however, were undertaken at different times of the year. In addition, different sampling approaches and methods were used.

2) AMONG SCHOOLCHILDREN, MOTHERS AND OTHER ADULTS

The deleterious effect of malnutrition is clearly continuing through and beyond childhood but little information is actually available on the nutritional status of schoolchildren and adults. The only study of major importance, conducted by Sebrell in 1958, showed that more than 50 percent of 3113 schoolchildren and adults were below 90 percent of the American or English reference (121). It found weight and height deficits in youngsters indicative of past and current malnutrition effects (120). More recently (1985), using the Checchi weight dispersion measure (WDM) as an indicator of current nutritional status, Cotten (52) found prevalence rates of wasting reaching 21.9 percent for schoolchildren participating in schoolfeeding programs and 26.6 percent for those not participating (see Table 1.7).

Examining skinfold thickness, the Sebrell study also found that Haitian women, during their first two decades of life, followed the same pattern as the American reference population. However, skinfold thickness decreased significantly thereafter (see Figure 1.3); this would suggest greater use of women's fat reserve during their reproductive life and no replacement.

Maternal nutritional status was studied more recently in Cite Soleil. The average height and weight was found to be 5 feet 2 inches and 112 pounds. Teenagers in Cite Soleil reached 86 percent of HANES median weight/height; thereafter, there was a general decline so that, by the time they were thirty years of age, they were only at 75 percent of the reference median. In contrast to US women, who tend to have over 30 percent total body fat at every age over 30, women in Cite Soleil remained under 30 percent total body fat as they grew older (see Table 1.8).

Perhaps the low calorie intake combined with hard work, frequent child-bearing and breastfeeding prevented them from adding body fat and, as Sebrell data indicated, this situation may even add a greater burden to their meager fat store.

The link between maternal nutritional status and low birth weight has not been clearly established in Haiti. Nevertheless, low weight newborn babies (<2.5 kg) are seen frequently in Haitian maternities. Data collected in the "University Hospital" in Port au Prince indicated a rate of 18 percent, and the rate has remained stable in Cite Soleil since 1980 at around 12 percent (Dr. Boulos, personal communication).

C. VITAMIN A DEFICIENCY

Vitamin A deficiency is another important nutritional problem in Haiti. It is thought to be the major cause of childhood binocular blindness. Recent epidemiologic studies in Asia have also shown a link between vitamin A deficiency and an increase in mortality and morbidity among children.

The prevalence and geographical distribution of Xerophthalmia was studied in Haiti in 1975 (127). The nationwide sample of 5589 children zero to six years of age indicated the extent of the problem. For conjunctival xerosis a prevalence rate of 9.7/1000 was found while the rate for corneal scars(opacities) was 2.5/1000.

Corneal lesions led to monocular blindness in 38 percent of the cases and total blindness in 27 percent . The prevalence rate of corneal opacities was extremely high (8.1/1000) in the northern part of the country (North, North-West, North-East, Artibonite) while it was only 1.2/1000 in the southern part. A somewhat higher rate was to be expected since the north is the poorest region of the country. This excessively high rate was, however, probably due in large part to a drought that struck that year during the agricultural season prior to the survey. The specific age prevalence rate in the north was as follows:

TABLE 1.9

| age | no. of cases | rate/1000 |
|-----|--------------|-----------|
| 0 | 0 | |
| 1 | 1 | 2.4 |
| 2 | 3 | 6.7 |
| 3 | 4 | 10.0 |
| 4 | 4 | 10.6 |
| 5 | 3 | 11.5 |
| 6 | 7 | 25.6 |

Based on these survey findings the authors of the survey predicted 345 new surviving cases of corneal destruction including 94 cases of bilateral blindness per year among Haitian children.

In response to the problem, a program to distribute vitamin A capsules (200,000 UI) to ill and malnourished pre-school children and lactating mothers was initiated in 1976. A second ocular survey was conducted three years later (128) among a sample of 5680 children in the northern part of the country (12 clusters had been visited in 1975). This second study found a marked improvement: the prevalence rate for conjunctival xerosis was 0.52/1000 .

While the distribution program probably had an impact it is difficult to assess to what extent it was actually responsible for the dramatic improvement. First, only children from 9.4 percent of the families interviewed reported receiving vitamin A capsules. Furthermore, in contrast to the drought conditions of 1975 when the first survey was effected, during the second survey in 1979 an above average rainfall was registered in the North. Another confounding factor was the distribution in the same area of powdered milk and milk substitutes fortified with vitamin A during this period. Thus, differences in diet were probably responsible in part for the different findings of these two surveys.

Consumption surveys also have found an inadequacy in vitamin A intake and wide seasonal variations, with a peak in September

and a drop from October to March. It is also of interest to note that while vitamin A-rich foods are produced in many communities, they are not consumed (37).

Vitamin A deficiency is associated with protein energy malnutrition. Brown (36) observed in a town near Grand Riviere du Nord, that only 5 percent of normal children had corneal lesions (no specific diagnosis was made) compared to 15 percent of children with third degree malnutrition. It is expected that Vitamin A deficiency is particularly exacerbated by protein deficiency because of the high protein demands for its metabolism.

Many agencies are currently participating in vitamin A distribution in most parts of the country, following the Division d'Hygiene Familiale et de Nutrition (DHFN) protocol revised in 1980. According to this protocol, all children between six months and six years of age should receive one capsule of vitamin A (200,000 U.I.) and all women after delivery should receive one capsule. Data on coverage of vitamin A distribution activities provide inconsistent estimates. Last year, UNICEF distributed 1,500,000 vitamin A capsules through the public and private health services (Dr. Genece, personal communication). The coverage was estimated around 50 percent in the 1987 EMMUS (Survey of Child Mortality, Morbidity and Health Service Utilization) survey (148).

TABLE 1.10

| | West | South | Transv. | North | National |
|---------|------|-------|---------|-------|----------|
| Number | 1476 | 729 | 1217 | 557 | 3994 |
| Vit A % | 48.5 | 44.8 | 53.2 | 51.8 | 49.8 |

Source : EMMUS 87

*(Child received at least 1 capsule since beginning of year: shown to mother.)

Recent child survival program assessments in Jacmel and Cite Soleil suggest that the vitamin A supplementation program may, in fact, have reached a coverage lower than expected:

1 Jacmel in 1987, 35 percent of children 0 to 59 months of age had received vitamin A according to the mother's statement, but only 9.9 percent could verify this with the road to health chart".

1 Cite Soleil in 1988, only 30.6 percent, 28.0 percent and .7 percent of children surveyed from Boston, Brooklyn and api respectively received vitamin A capsules within the x months prior to the survey (Dr. Boulos, personal communication).

e discrepancy between these results may be due to biological differences in the way vitamin A coverage was ned. During the EMMUS survey capsules were actually shown ers. In any event, currently available data are inadequate mate either the magnitude of the Xerophthalmia problem or act of the vitamin A distribution programs.

ANEMIA

The third important nutritional problem in Haiti is which is presumed to be iron-deficiency anemia. The 1978 identified generally high anemia rates in mothers (35) and pre-school children (33 percent). Analyses of l and urban/rural differences are conflicting, however. is not really clear whether or not there are important or urban/rural differences.

1) AMONG CHILDREN

At the national level, approximately one-third of 1 between 3 and 59 months of age had anemia as measured by bin levels among a 20 percent subsample of the 1978 NNS in this age group referred to two different cut-off below 24 months anemia was defined as hemoglobin level an 10 g/dl and over 24 months as hemoglobin level less g/dl).

Figure 1.4 shows the percentage of anemic children in each up. The 24 through 35 month age group had the highest

percentage of anemic children. This period follows the peak period of general nutritional stress associated with the weaning interval. Again, protein energy malnutrition is likely to be related to hematopoietic response through both the metabolism of iron and the synthesis of red blood cells.

The survey also indicated a marked regional variation: anemia seems to be least prevalent in the Artibonite region (Univ III) and most prevalent in the Port-au-Prince region (Univ VI). Figure 1.5 shows the regional patterns. Wide statistical variances prevented statistical testing, however, and no other national data are available on anemia. The only other more recent data are provided by surveys undertaken in Cite Soleil in 1981 and 1986. These two surveys suggest mean hemoglobin values in Cité Soleil were similar to those of the NNS national values.

Table 1.11 presents the distribution of the average hemoglobin values for the two surveys, compared with the National data (standard deviations, unfortunately, were not available for all in the published literature).

TABLE 1.11
Average Hemoglobin Values Found in Cite Soleil Surveys and NNS

| | Cite Soleil | | NNS |
|-------|-------------|------|------|
| | 1981 | 1986 | 1978 |
| 0-5 | 11 | - | - |
| 6-11 | 10.8 | | 10.5 |
| 12-23 | 10.9 | - | 10.6 |
| 24-35 | - | 10.7 | 10.9 |
| 36-47 | - | 11.1 | 11.1 |
| 48-59 | - | 11.3 | 11.1 |

Specific contributions of various determinants of anemia among children are not well understood in Haiti because relatively little work has been done on the subject. Dietary intake, absorption, metabolism and loss due to infectious and parasitic episodes and bouts of malnutrition are all thought to be important. Haitian children's diets commonly do not contain

adequate levels of iron(103). In addition, the presence of factors that interfere with absorption(such as phytic acid) has not been adequately assessed. Finally, the high morbidity loads experienced by Haitian children is likely to contribute substantially to the problem. Malaria and hookworm infection are both prevalent and highly associated with anemia.

2) AMONG WOMEN

More than 35 percent of women surveyed in the National Nutritional Survey were anemic (the sample was not representative of the general population of women since those women had at least one child under five years of age under their care). Pregnant women were considered anemic if their hemoglobin was less than 11 g/dl; for non-pregnant and lactating women, the cut-off was 12 g/dl.

The 1978 NNS data exhibited wide variability that precluded significance testing for regional variations in the prevalence of anemia in women (see Figure 1.6). The average hemoglobin values for the three groups of women (pregnant, lactating and non-pregnant/non-lactating) were lowest in metropolitan Port au Prince, especially for pregnant women (see Figure 1.7).

The only other data available come from the marginal area of Cite Soleil. The 1981 survey found an average hemoglobin value of 11.65 g/dl among Haitian mothers.

In summary, the three nutritional deficiencies discussed are important problems but information on all three is sorely lacking. Three actions should be undertaken to rectify this situation. First, more emphasis should be placed on processing and collating data from routine reporting systems. Although there is a large constellation of health programs that collect growth monitoring and other data, very little is summarized and reported in a coherent manner such that this data could be used for nutritional surveillance purposes. Second, there have been, in the last five years, several national and regional sample surveys carried out in the health sector (especially the national

surveys being carried out to evaluate DCC (Diarrheal Disease Control) efforts). Nutritional components should be added to these surveys. An advocacy role is sorely lacking. Finally, it is perhaps time to consider a comprehensive nutrition survey in Haiti.

III. FACTORS RELATED TO MALNUTRITION

A. INTRODUCTION

All factors that determine malnutrition operate through two major pathways: dietary intake and nutrient utilization. Dietary practices and morbidity are the most proximate causes of malnutrition in children, however, and will be the focus of this analysis.

A host of socio-economic and demographic factors were associated with nutritional status based on the NNS data. However, this discussion focuses on the more proximal determinants because of the obvious relevance to health, population, and nutrition (HPN) programming decisions. Socio-economic factors are considered here as constraints to HPN program success. The following section begins with a discussion of feeding practices, which play a major role in determining the nutritional and health status of children in Haiti. It then addresses the determinants of maternal dietary practices. The final part of the section discusses the main morbidity problems associated with malnutrition.

B. DIETARY PRACTICES AND DETERMINANTS

1. INFANT FEEDING PRACTICES

Breastfeeding is still common in Haiti. A major problem in infant feeding practices, however, is early supplementation, in particular, the early introduction of bottlefeeding and weaning feeds that are nutritionally inadequate.

a. Breastfeeding

Overall, there appears to have been relatively little change in the duration of breastfeeding in rural areas over the past ten years. The 1987 EMMUS survey found a median duration of 17.5 months for the country as a whole (14.5 urban, 18 rural, and 16 Port-au-Prince), while the 1978 NNS found a mean duration of 12 months in Port-au-Prince and of about 18 months in rural areas. Although there would appear to be an increase in duration in urban areas, this hypothesis deserves closer

examination. Methodologic differences in sampling or analysis may explain the differences. Particularly, computational differences can easily produce substantial differences. The techniques used were not available in the literature published.

Both surveys did, however, find that, while there were no significant differences between rural regions at that time, important differences existed between rural and urban areas (see Table 2.1). Both surveys found that in rural areas virtually all children were breastfed, but in Port-au-Prince more than nine percent had never been breastfed. The NNS survey found that only three to nine percent of rural children had been completely weaned by age 12 months, while about 29 percent had already been weaned at that age in Port-au-Prince. The 1978 survey also found that in both the urban and rural areas younger (see Table 2.2) and low parity mothers (see Table 2.3) tended to wean their children earlier than did older mothers.

Survey data from Cite Soleil provide additional information. Both surveys in Cite Soleil (1981, 1985) suggested that in general women breastfed longer in marginal areas than in Port-au-Prince. The 1985 survey also found that only 1.3 percent of infants in marginal areas were never breastfed.

Data for the proportion of weaned children at 12 months of age can be summarized as follows:

TABLE 2.4

Proportion of Children Weaned by 12 Months of Age

| | rural % | metropolitan % | marginal % |
|-----------|------------|-------------------|---------------|
| 1978 NNS | 3-9 | 29 | - |
| 81 Soleil | - | - | 17.5 |
| 85 Soleil | - | - | 11.4 |

Another important breastfeeding practice is the tendency to postpone initiation of breastfeeding for a few days after birth. The 1981 Baseline Survey in Cite Soleil demonstrates this tendency: 27 percent of women delayed breastfeeding until the

second day of life, 38 percent until the third day, and 5 percent until the fourth day. The 1985 survey gave the same pattern of results: over half the women delayed until the second or third day after birth.

The practice stems from beliefs about colostrum, but it is not clear whether there is a singular strong belief set that underlies the practice. Based on a study conducted in the South, anthropologists (9) suggested that primary reasons for late initiation included the perceived need to purge the infant's body before initiating breastfeeding and the belief that colostrum ("yellow milk") was unhealthy for the child.

b. Supplemental feeding practices

Two problems in weaning feeding practices have been identified for some time now in Haiti:

- (1) lack of early exclusive breastfeeding, including extensive use of the bottle;
- (2) an inadequate weaning diet.

The 1987 EMMUS survey found that only 12.3 percent of all children were exclusively breastfed for the first two months of life:

TABLE 2.5

Patterns of Feeding Among Infants Two Months of Age and Less

| | rural (N=148) % | urban (N=26) % | metropolitan (N=37) % | national (N=211) % |
|-----------------|-----------------------|----------------------|-----------------------------|--------------------------|
| breastfeeding | 14.2 | 11.5 | 2.7 | 12.3 |
| mixed feeding | 84.5 | 84.6 | 89.2 | 85.2 |
| weaned child | 0.7 | 3.8 | 8.1 | 2.0 |
| never breastfed | 0.7 | - | - | 0.5 |

The 1978 NNS found that 75 percent of children received supplements before three months of age. These data suggest that the tendency to introduce supplements at a very early age has increased fairly dramatically during the past ten years (although

the indicators of feeding status are not comparable across the surveys).

Anthropological studies suggest that mothers refuse to breastfeed exclusively for various reasons, including (8,9):

- the belief that exclusive breastfeeding can be deleterious to their (mothers') health;
- lack of confidence in the quality and quantity of their milk (they interpret a baby's crying as insufficient feeding).

Other factors sometimes cause mothers to wean their babies early. These include "let gate" where the mother's milk is considered spoiled if it has not been sucked for three or more consecutive days, or if the mother gets upset or shocked by a tragedy; and a new pregnancy.

i. Bottlefeeding

Bottlefeeding is becoming more and more widespread. In 1978 the NMS reported that already 60.8 percent of rural mothers had fed milk to their children from a bottle, while 96.8 percent of mothers in Port-au-Prince had done so. Rural community surveys in the north (11,12) and in Les Cayes (150) suggest an even greater use of bottles. The Baer and Rhode survey found that 71 percent of children under five years had been bottle fed at some time, while the survey in Les Cayes found that 79 percent had been. The 1985 survey in Jacmel found that 81.7 percent of all infants had been bottle fed by the fourth month of life.

Data from Cite Soleil indicate that bottlefeeding is highly prevalent even among the underprivileged classes in Port-au-Prince. The 1981 Cite Soleil survey found that more than half (56.3 percent) of the infants had begun bottlefeeding by the first month and that by the fourth month more than 80 percent had done so.

The very early introduction of the bottle in the infant's diet leads to reduced breastfeeding production (because of less

frequent suckling) and epidemiologic data suggest that early bottlefeeding and supplementation have important consequences for both morbidity and mortality among young infants. They are particularly dangerous in the developing world where environmental sanitation and water quality are usually poor.

Data from the EMMUS survey suggest a relationship between ever breastfed status and mortality (personal communication-Anouche Chahnazaian)). Data relating morbidity to the early use of supplemental foods are available but not yet analyzed. Indirect evidence, however, suggests that these early feeding practices may have a substantial effect on the incidence of diarrheal diseases, particularly among young children, who have the highest mortality risk. The following data suggest a diarrheal disease pattern that is not characteristic of infants under six months of age who are fully breastfed:

TABLE 2.6

**Two Week and 24 Hour Period Prevalence of Diarrheal Disease
Among Children Under 5 Years by Age Group**

| | 0-5m. | 6-11m. | 12-23m. | 24-35m. | 36-47 | 48-59m. |
|------------|-------|--------|---------|---------|-------|---------|
| 2 weeks % | 39.7 | 58.1 | 53.1 | 40.0 | 33.5 | 28.3 |
| 24 hours % | 22.1 | 23.6 | 19.4 | 13.0 | 5.9 | 6.4 |
| N | 499 | 465 | 812 | 750 | 766 | 702 |

source: EMMUS 87

Additional evidence on the extent of the problem comes from University Hospital admissions information. Between 1978 and 1981, 56 percent of children admitted for diarrheal diseases and severe dehydration were less than six months old and the case fatality rate for this group was around 40 percent (104).

The 1981 Cite Soleil survey found that mortality rates by 18 months for those children exposed to bottlefeeding in the first four weeks of life was 160 per 1000, in contrast to the 32 per 1000 found in children whose mothers had held off past the first month.

ii. Quality and quantity of the weaning diet

The other major problem in feeding practices in Haiti is the nutritional inadequacy of the weaning foods given to infants. Several food consumption surveys have provided data on infant diet and point out the insufficiency in quality and quantity of the weaning diet. In general, children in Haiti are fed high bulk, low caloric density foods, and feeding frequency is low.

The most comprehensive information comes from a sub-sample of the 1978 National Nutrition Survey (1064 children in 150 villages) (see Figure 2.1). Supplementary foods were given in the form of porridge or "bouillie" (such as boiled bread with sugar or cornflour) with 75 percent of infants receiving it before three months of age. Between three and five months, 50 to 60 percent received corn meal and bean sauce. Overall, 54 percent of children had only one meal a day (meal defined as a combination of cereals and pulses or tubers and legumes); and 42 percent had nothing that could be classified as a meal. Urban children ate more frequently; even so, their intake was less than nutritionally adequate. More urban children had one or two meals a day than rural children, who sometimes had none at all. In reality, however, the only children who consumed two meals a day were those two years of age and older. Tea or coffee were substituted for the meals of the more malnourished children, while the better nourished children consumed more pulses, fresh milk, and vegetables.

A 1977 food consumption survey conducted in Jacmel among children in three villages from 65 families found that they consumed inadequate amounts of food. Their food rations had a deficit of 32 percent for calories, 24 percent for proteins, and 17 percent for iron (the diet was rich in vitamin A, since the survey was undertaken during the season when fruits were widely available) (see Table 2.7) (120).

The 1981 Cite Soleil study included a 24 hour recall survey for children zero to twenty months old (see Figure 2.2). It found that bread, soup and cornflour gruel were given to half the

children in the first year of life. In addition, half of the nine month old children received bean porridge, but only one in ten of them received meat or eggs. The study also documented a changeover from dairy products to a mainly cereal diet as children reached about three years of age.

A more recent consumption survey conducted in the Artibonite region in 1984 by UPAN (Ministere du Plan), found a diet inadequate in calories, protein and iron intake among pregnant women and pre-school children (see Table 2.8) (135).

Weaning research began in Haiti in the late fifties. The Bureau de Nutrition developed a local weaning food prepared from cereals and legumes called AK-1000 (akamil). This preparation was intended to provide a cheap and available source of calories and proteins for children aged eight months and older. It was first promoted through health professionals and the first study on it, conducted in rehabilitation centers, gave positive results (93).

A project for industrial production of AK-1000 was under way, but an initial feasibility study indicated that it was unlikely that a profitable market could be established for the product. The plant is still not opened. Even so, at the present time, most agencies involved in nutritional activities and the DHFN are reinforcing the promotion of AK-1000 within families and hand mills are provided to groups and associations (mother clubs, AOPS, etc.). No new data are available on its acceptability, but there are some concerns about preparation time, the monotony of the food and, more importantly, the non-availability of beans and the lack of village mills.

iii. The weaning process

It appears that weaning is generally done in an abrupt fashion, and usually involves the mother physically removing herself from the child. Anthropologists have also described how mothers who stay at home apply a very bitter substance to the breast to assist in extinguishing the child's attraction to the breast (8, 9).

As far as infant feeding and weaning are concerned, anthropologists have observed a transitional pattern. Usually, from the first month to the fourth month the child received sweet foods - "manje dous"; then food prepared with salt - "manje sel" - was introduced; and progressively over one year the child participated in the family meal - "manje chodye". The ideal seems to be that by the time weaning comes, the child should be consuming 80 percent of his food from the family cooking pot and 20 percent only from the breast.

c) Feeding ill children

Relatively little is known about feeding practices for ill children but what information has been gathered suggests that they probably aggravate the condition, at least in the case of diarrhea.

A study (103) conducted among a group of 500 infants seen in the Rehydration unit of University Hospital between October 1980 and February 1981 found that only 35 percent of the infants received foods during diarrheal episodes. The majority of mothers considered food to be harmful to the child in the presence of diarrhea. Only 22 percent of the breastfed infants continued to receive breastmilk. When nourishment was provided it consisted of carrot juice , kola or rice water.

Berggren (18) found the same behavior in Cite Soleil: mothers there also tended to deny foods or liquids to infants suffering from diarrhea both during the episode and during the recovery days, apparently with the idea that it was important to "rest" the stomach. Some people thought that mother's milk was actually responsible for the occurrence of diarrhea.

Alvarez and Heurtelou have even reported that (9) some people, as a way of treating diarrhea, give a child a purgative in an effort to make the child expel the causative agents of the illness.

2. DETERMINANTS OF MATERNAL DIETARY PRACTICES

A variety of factors seem to be operating to influence these various dietary practices, but their importance is incompletely understood.

a. Food availability

The diets used in weaning are, of course, directly influenced by the food available. More information is therefore needed on food availability at the national, village and family levels, although food availability at national and community levels is already known to be a major problem in Haiti.

Sorghum, rice and maize are the three most important staple crops followed by tubers, pulses and plantain. The recent analysis of the food situation by the Virginia Polytechnic Institute (55) revealed that domestic food production was stagnant, and that a food gap ranging from 250 to 336 thousands M.T. per year in wheat equivalent terms currently exists (see Table 2.9).

Significant regional differences and seasonal availability of many foods are believed to create serious nutritional problems, but data on those are scarce. The UPAN in 1984 carried out one of the few studies that has gathered data on food availability per capita/per region (see Table 2.10). It found that in rural communities, all the peasants produced the basic crops (cereals and beans or peas are present in the food pattern of all the social classes in Haiti); however, most of them did not live entirely off the products of their fields as they sold some of these products commercially. The same study indicated that a large percentage of household income was used to buy food. It is clear that at the household level, food availability is determined by the production of food and by accessibility to food, i.e. the purchasing power of the family.

The role of food allocation within the family may be important but has not been studied sufficiently for comment. Only one anthropological study was found, which reported that very young children generally were the last to receive their

share of the family food. It described how, when a meal was cooked, food was distributed by dishing out individual plates. Adult males received the largest quantities but always left some for women and children. It is possible that the UPAN data could be reanalyzed to examine the issue of food allocation within the family.

Family food access and intrafamily food allocation are two important issues that must be understood in order to design sensible and effective nutrition interventions. Data from the National Expenditure and Consumption Survey should provide very important information about household food availability (and its relationship to income), regional variation, and seasonal variation. Although Haitian families already spend the vast majority of their income on food (high income elasticity), it is interesting to note that mothers may already allocate out of this substantial resources specifically for infant feeding (ie milk products). Perhaps there is a more optimal income allocation to child feeding. The incremental costs needed to provide adequate weaning diets should be assessed in more depth.

b. Infant formula promotion

The role of infant formula promotion as a determinant of nutritional practices is unclear, but it appears to be problematic. Of particular importance is the fact that Haiti has not yet adopted the WHO/UNICEF code of marketing for breast milk substitutes.

Furthermore, bottlefeeding is still practiced in maternities and a 1983 KAP study of health professionals in three maternities in Port au Prince showed that even health professionals believed early supplementation to be beneficial to infants. Posters of powdered milk and distribution of samples are still common. The general perception that bottlefeeding is modern while breastfeeding is associated with poverty also contributes to the problem (Dr. Genece, personal communication).

C. Maternal time constraints

Maternal time allocation is a factor that should be examined as a constraint to any intervention efforts. It does not appear to be a major determinant or an insurmountable constraint, however, even though many women are involved in economic activities which take them away from the home. In 1978, 61 percent of rural mothers were engaged in farming. Only 20 percent of rural and 55 percent of urban mothers reported that they were full-time in the home (urban mothers are more likely to introduce foods earlier). Table 2.11 shows the distribution of occupations of the mothers. What is not known is the time spent away from home or the flexibility the mother has to return home to feed. It is unlikely that most mothers must spend extended periods of time outside the home, however(18).

The study by P.A. Haggerty (83) in Cite Soleil showed that works status and location of mother's work significantly affected length for age in the second year of life. In the first six months the time women spent with their infants was of relatively greater importance in establishing satisfactory growth, while income appeared to be a major factor responsible for better nutritional status after six months. It was not clear, however, through what mechanisms growth was affected.

C. INFANT MORBIDITY

Morbidity has been linked to nutritional status worldwide and in Haiti (see Table 2.12) (37). Pre-school Haitian children with weight for height more than two standard deviations below the mean have almost twice the prevalence of fever, diarrhea or other illness compared to those one standard deviation or less below the mean. This is not surprising since it is known that malnourished individuals are more susceptible and have a less vigorous response to disease, and particularly to infections. Infections in malnourished children last longer and are more severe. In fact, there is a vicious cycle: the physiologic and metabolic changes induced by the infection process (anorexia, increased nutritional needs,...) compromise the

host's nutritional integrity, and a host malnourished is more susceptible to infections.

Two of the leading causes of death among Haitian children, diarrheal diseases and bronchopneumonia, are strongly associated with undernutrition. Thus, most studies to date have concentrated on diarrheal and measles infections, and respiratory infections. Parasitic diseases are also major concerns that have not been treated in this discussion.

1. DIARRHEAL DISEASES

Diarrhea is of major importance because it is so common. It is one of the most frequent reasons for medical consultation and for hospital admission (107). The 24 hours and last two weeks prevalence rates were as follows in the recent EMMUS survey:

TABLE 2.13

Period Prevalence of Diarrheal Disease by Place of Residence
(children under five)

| | rural % | urban % | metropolitan % |
|----------|------------|------------|-------------------|
| 2 weeks | 42.9 | 40.2 | 33.7 |
| 24 hours | 14.7 | 14.9 | 10.4 |

TABLE 2.14

Diarrhea hospital admissions (under five children) 1982-85
(ratio diarrhea admission to total admission/100)

| HOSPITAL | 1982 | 1983 | 1984 (01-06) | 1985 |
|---------------------------|------|------|-----------------|------|
| La Providence Gonaives | - | - | 66 | 42 |
| Justinien Cap Haitien | - | - | 45 | 43 |
| Immacul. Conc. | - | 46 | 30 | 33 |

Table 2.14 (cont'd)**Les Cayes**

| | | | | |
|------------------------------------|----|----|----|----|
| HUEH Port-au-Prince | - | 42 | 31 | 34 |
| HUEH ORT unit Port-au-Prince | 71 | 52 | 48 | 51 |

At hospital Sainte Catherine in Cite Soleil, 25 percent of children admitted for diarrhea were also malnourished. Children with diarrhea and severe malnutrition contributed to 57 percent of all deaths occurring among children under five years. Some 76 percent of children admitted in 1980 to University Hospital for rehydration were malnourished. Similarly, 56 percent of children admitted with diarrhea to Bon Repos Hospital in 1984 were malnourished.

2. MEASLES

Measles are still very common in Haiti. The recent EMMUS survey found an overall person-years incidence rate of 0.251, with higher rates in urban and metropolitan regions. The impact of measles on children's nutritional status was documented in a study in Cite Soleil by Halsey and his colleagues (84). Children there who had had measles showed a significantly lower nutritional status than those who had not (children 10 to 12 months)(84). These data show an association and do not prove causation. However, it is quite plausible that, among malnourished populations, the occurrence of measles in late infancy could be a precipitating event to the sequence of events leading to nutritional deficiencies (especially since measles is such a severe illness, particularly among young children). A more recent study by Holt (150) suggests that measles vaccination may lead to substantial mortality reduction. Interestingly, this study did not show a positive effect of vaccination on nutritional status.

IV. NUTRITIONAL PROGRAMS

Haiti is one of the most experimented countries in the world with respect to nutritional programs. A combination of missionary and other donor-financed programs have been operating for more than 30 years and a wide variety of approaches have been tried.

Food aid, to help meet the food needs of the country, is provided by seven different major sources: USAID, the French, German, Japanese and Swiss aid programs, the European Economic Community (EEC) aid program, and the World Food Program (WFP) (the US and EEC providing 97 percent of the total). Table 3.1 presents a summary of the principal commodities provided during the last 10 years.

Major categories of nutritional interventions include Food for Work, school feeding programs, maternal and child health programs, and integrated development projects (see Figure 3.1)

A. MATERNAL AND CHILD HEALTH APPROACHES

These approaches are targeted to mothers and pre-school children. Between the mid-1960s and the late 1970s, the principal strategy of the Bureau de Nutrition to combat malnutrition among children was the establishment of mothercraft centers. This strategy focused on rehabilitation of severely malnourished children with the participation of the mothers. Program impact was positive as measured by recuperated children and effects on siblings (21,92). The cost, however, was considered too high for the coverage obtained.

This approach was later replaced by the Foyer de Demonstration strategy, where mothers and children of a village attended an intensive education session every day during a two-week period. Emphasis was given to participation and demonstration. The rationale was to promote healthy growth in order to prevent malnutrition.

The current overall strategy of the public health sector consists of integrating nutrition activities into the health delivery system. Nutrition activities undertaken are growth

monitoring, nutrition demonstration and education, and targeted food supplementation, when available. Despite established protocols, there are a large variety of mixed interventions, targeting approaches, and service delivery models being undertaken in Haiti.

Five distinct models have been identified among the numerous types of interventions. For each model we have identified the organizations that operate this type of system. In addition, we have provided a descriptive narrative that includes types of services provided and channels of service delivery; target population; personnel, management, training; supervision; participation; and specific technical aspects of the educational components. Finally, we have identified unique or useful features of the program for further consideration, as well as limitations of these programs.

A more complete overview of interventions conducted by the different agencies and/or supported by donors and the evaluation instrument which is presently used for the site visits (Case Study) are given in Annexes II and IV. The case studies analysis will allow a more precise assessment of the process variables and will identify constraints for each type of model and/or agency intervention.

Before discussing the five approaches, it is important to point out that national coverage of maternal and child health programs is not high. The EMMUS survey provides information on the number of underfive children who have a "road to health chart." Overall coverage is low, ranging from 14.5 percent in the transversal region to 18.2 percent in the West. Coverage is highest among children 12 to 23 months of age.

1. TARGETED SUPPLEMENTATION WITH EDUCATION:

This type of program consists of supplementing the normal diets of vulnerable, malnourished groups (preschoolers and pregnant and lactating women) with additional food that is intended to support the basic diet. Education is provided to mothers to improve dietary practices. Either dry take-home

rations or on-site feedings are provided. Health services provided are minimal.

ADRA (Seven Day Adventists) is the only major example of this type of program which is currently operating. The ADRA program consists of nutrition centers that are completely run by the communities. Communities are self-selected into the program based on a written application and a contract that specifies the community's responsibility to provide facilities and protected storage for supplies, as well as a village management committee. ADRA provides supplies and technical assistance. Once a community is selected, children are screened for program eligibility. The least nourished 150 children are eligible for services. The least nourished 50 children receive a substantial ration and nutrition education while the other 100 receive only education. A small ration is given to the mothers of these children for motivation.

Population: ADRA originally operated 77 such centers but recently their program has been stressed by the inclusion of over 50 Church World Services (CWS) centers. There are currently supervisory and operational problems resulting from the larger program.

Personnel and Training: ADRA selects nutrition agents from among applicants for the position and these agents provide the services in each center. They are volunteers and receive food for work. Initial training lasts four days, and further training is provided twice a year for four days.

Supervision: Activities are supervised by five inspectors. Each center is visited approximately every three months. There are currently some problems with supervision, however, resulting from the addition of the extra centers and also from the political situation.

Activities: The mothers are directly involved in the rehabilitation of their malnourished children. Program enrollment lasts eight months; during this period, besides receiving the food supplementation, mothers are taught how to care for a malnourished child and how to prevent malnutrition. Sessions normally include 25 children. During each session, the following

activities are carried out : weighing (with recording on the "road to health chart"), individual counselling, and education for mothers (six main subjects are covered: vitamin A-rich foods, the three food groups, diarrhea and oral rehydration therapy, breastfeeding, immunization, and growth, which includes the "road to health chart"). The education material used is that developed by the DHFN. A few additional services are provided, including ORT and vitamin distribution. After eight months, the children are discharged and a new screening is operated in the same village.

Participation: Rates are high. Among the 50 children in the supplementation program, 90 percent regularly attend. Among the others, 80 percent regularly attend sessions.

Aspects of the program worth investigating and program strengths:

- the community mobilization and participation;
- the motivational mechanisms : for the participants, if the children do not gain weight, they are excluded from the program.
- ADRA program management: in particular, a well structured supervisory reporting and information system.

Problems and limitations:

- insufficient use of information collected by the program (supervisory forms, GM etc) for management and evaluation purposes;
- inadequate staff training, and possibly supervision frequency;
- basic philosophy of a curative approach organization;
- food supply problems to ADRA.

Most agencies working in urban marginal areas, regardless of their general strategies and service delivery models operate this type of targeted supplementation due to the large demand on the system. Even CARE and CRS run take-home supplementary feedings targeted to malnourished children and/or those of lowest socio-economic status (please refer to Annex IV). It is important to note that in urban areas the populations have become quite

accustomed to food handouts. Several program managers stated that motivation is difficult in the absence of food supplements.

2. NUTRITION COMPONENTS INTEGRATED INTO CHILD SURVIVAL PROGRAMS

This type of program is characterized by the fact that nutrition is but one component that is conceptually integrated into a focused strategy to reduce child mortality. Child Survival programs include a nutrition component (GM/P, education and sometimes targeted supplementation) among other Maternal and Child Health (MCH) activities such as immunization, promotion of oral rehydration therapy, prenatal care, and family planning. This type of program is the strategy used by most PVO's receiving USAID Child Survival support monies. Technical support for many of these programs is provided by the IHE (Institut Haitien de l'Enfance), and training support is increasingly being provided by INSHAC (Institut National Haitien de la Santé et de l'Action Communautaire).

The AOPS (Association des Oeuvres Privées de Santé) - an association of 100 organizations throughout the country, both private and public, that work in the health sector - has twenty-five members carrying out Child Survival programs. Four specific AOPS organizations (AMOSSE in Jacmel, Foster Parent Plan in Jacmel, Comite de Bienfaisance in Pignon, and the Salvation Army in Lully) have been selected for further investigation because they were judged to have particularly well-run or well-designed nutritional interventions (please refer to Annex IV). While non-AOPS organizations also provide these types of Child Survival services, AOPS is used as an example here.

Most of the AOPS organizations have adapted the rally posts approach, combining the village-based monthly gathering with a health professional mobile team. Each AOPS organization has its own management approach and personnel, training, supervision, and other activities differ according to the individual organization. AOPS staff do, however, in theory, supervise each site once a month.

Population: The target population for each project is supposed to be defined by a census. The population is divided into equivalent-sized sectors which form the basis for service delivery.

Activities: The common nutritional activities at the rally posts are weighing of children under five years using the "road to health chart", individual counselling (focusing on mothers of children who do not gain weight or are already malnourished), and education following DHFN protocols. When available, targeted supplementation (second and third degree on the Gomez scale) is provided. Besides the MCH services, some institutions may also organize other activities, including essential curative care and/or community development programs (income-generating activities, home-gardens, sanitation, agricultural projects etc.).

Aspects of the program worth investigating and program strengths:

- program outreach;
- an organization worth considering for GM/P and nutrition education support and operations research;
- individual member organizations have specific managerial approaches worth investigating.

Problems and limitations:

- Time allocation of personnel, training, supervision and support are major constraints.
- Nutrition is clearly not a high priority overall (but is in specific sites).
- Logistical problems and shortages are common.
- The information system of the program is both overly simplistic and not well implemented (forms are incompletely filled out).
- Information gathered is not used for management and evaluation.

3. NUTRITIONAL SERVICES INTEGRATED INTO COMPREHENSIVE HEALTH SERVICES

This type of nutrition program is included in a comprehensive population based health program run through a hospital and community outreach health services. A complete inventory of nutritional activities is offered to the population, including growth monitoring and nutritional surveillance (in fixed facilities and at rally posts in rural areas), education and demonstration, supplementation, and nutrition rehabilitation centers for severely malnourished children. Besides the nutrition activities, curative and preventive services are provided to the same registered population.

Two programs essentially fit this description. One is the Albert Schweitzer Hospital Community Health program in the Artibonite area. The other, which is described below, is a comprehensive health program run by Complexe Medico-Social of Cite Soleil in this marginal urban area of Port-au-Prince. The program operates through one hospital and three health centers.

Population: The program reaches 150,000 people and 22,000 children under five.

Personnel and training: Nutrition staff include a physician, nurses, auxiliaries, monitors, and volunteer agents. They receive training at INSHAC: Physicians, nurses and auxiliaries receive five months of training and monitors and volunteers one month.

Activities: All preventive activities are conducted in the health centers, where children under three are assembled at regular intervals. Community outreach agents motivate the community to participate. Activities include weighing (all children every 2 months and malnourished every month) and education in "foyer de demonstration," where 20 mothers of malnourished children (first, second, and third degree) are enrolled and come every day for one month. Dry rations are provided for second and third degree malnourished children and pregnant women. Weight gain is the criterion for continued participation and a child that does not gain weight can be

excluded for three months. Otherwise, an enrolled child remains in the program up to age three. There is also a rehabilitation center for malnourished children. Mothers receive training from professional staff. The program also includes a breastfeeding promotion campaign that promotes exclusive breastfeeding during the first two months of life and discourages the use of bottles. Vitamin A and fer-folate are distributed according to the DHFN protocols.

Additional activities include:

- income-generating activities for mothers of malnourished children enrolled in the rehabilitation center;
- a cultural center that is a primary and secondary school plus a documentation center for the teenagers;
- income-generating activities for the collaborators.

Participation: It reaches over 80 percent as a result of the intensive community outreach motivational system.

Areas of the program with investigating and program strengths:

- This program is well organized with all the components of a nutritional surveillance program (diagnosis, treatment, and prevention). It would provide an interesting case study for cost effectiveness analysis.
- Registered population.
- Well organized program of referral and progressive nutrition intervention strategies.
- The INSHAC has developed a training protocol, materials and programs which should be assessed by Parlatto with M-C.

Problems and limitations:

- Costs.
- Somewhat classical educational strategies.

4. UNTARGETED SUPPLEMENTATION AND EDUCATION PROGRAMS:

This program focuses on education and prevention of malnutrition with an emphasis on the nutritional supplementation component. Dry food rations are provided as an incentive for

participation. Aside from supplementation, GM, individual counselling, and group education sessions are the major activities.

The Catholic Relief Services (CRS) organization is the only major organization currently operating this type of program on a widespread basis, although many organizations have operated this type of program in the past. Both public and private sector health centers participate in the program. Institutions must apply to receive CRS assistance and they must be willing to commit resources to running the nutrition center. CRS provides food, technical assistance (in terms of training, weighing and monitoring materials,...), and supervision.

Population: CRS runs 21 centers serving approximately 8000 enrolled children.

Personnel and training: The management of field level activities varies between centers. Often the field manager is a physician or a nurse, but sometimes auxiliaries or trained mothers run the program. Staff training is not standardized but is rather carried out as in-service training. Small seminars and staff meetings are also organized.

Supervision: This is performed once a quarter per site by CRS supervisors.

Activities: Ideally, the children are supposed to be enrolled before three months of age and normally for a duration of one year. The dry food supplement is distributed every two weeks in a fixed facility, while the growth surveillance is undertaken for enrolled children only every month to monitor the progress. CRS uses its own growth chart model which excludes graphics. Growth monitoring is accompanied by individual counselling and demonstrations of meal preparation using local foods. Brief group sessions are held during the first 10 minutes of each session. In theory, one message is presented from among the following topical areas: ORT, Hygiene, EPI, Vita, fortified milk, akamil, family planning, foods, breastfeeding promotion, and growth monitoring. Attendance of more than 40 mothers per session is common.

Additional activities: In some centers, after one year's participation, motivated mothers can apply to participate in income-generating activities (essentially loan funds). A few additional services are provided, such as ORT and vitamin A distribution. Other health services are provided according to the health facility.

Participation: Rates are high. Approximately 90 percent of the mothers attend every session.

Aspects of the program worth investigating and program strengths:

- emphasis on nutritional component of service delivery systems;
- high participation rates(probably due to food supplementation incentive);
- standardized management approach by CRS, although institutions are very different;
- it is one of the few remaining programs supporting public services;
- experimental growth chart;
- linkages between the nutritional and income generating activities.

Problems and limitations:

- staff training seems weak and perhaps too unstructured;
- no use of data collected for monitoring and evaluation purposes;
- fairly classical supplementary feeding program with classical educational approaches.

5. PRIMARILY EDUCATION BASED PROGRAMS WITH COMMUNITY PARTICIPATION:

This is an education-based approach that places strong emphasis on community participation and socio-economic development. In several selected localities, some PVOs carry out community education programs and/or nutrition-oriented economic development activities (food-producing and/or income generating),

to improve the income of families. On the nutrition side, emphasis is placed on preventive strategies and supplementation is not commonly used. Growth monitoring is more often taken seriously as a communication strategy which necessitates full participation and understanding by the mothers.

CARE runs the CINECO program in rural areas, integrated into a well structured social organization program. This example is discussed here. In addition, CECI (Canadian development NGO) has intergrated this type of nutrition project into their development program (pls refer to Annex IV).

Population: The population is identified by census in the catchment area of a primary school. All mothers with children under one year of age can participate in the program, on a voluntary basis. Isolated communities are given priority. There are currently approximately 30 of these CINECO sites. CARE has submitted a proposal to extend and expand the program during the next five years.

Personnel and training: Program management is fairly decentralized, with responsibility primarily at the regional level. Staff include a regional coordinator under whom are monitors. These monitors supervise the activities carried out by the health agents. These peripheral level staff are only marginally literate. The health agents initially receive training for 17 weeks and continuing education courses every 6 months.

Supervision: Supervisory visits to CINECO centers are made weekly. The monitors supervise between 6 and 9 centers, and they have a check-list for supervision visits.

Activities: There are as many as 80 mothers per session. There are two major nutritional activities:

- 1) Both mothers and children are weighed and individual counselling is provided to mothers according to a protocol. A revised growth chart is used that highlights the sign of weight change. No graphics are used.
- 2) A group nutritional education session: great emphasis is placed on the promotion of local foods. CARE developed

their own educational materials. The methodologic approach is participative with role playing, songs, and demonstration. Women's groups are also encouraged to undertake community nutritional education.

Other health activities include distribution of vitamin A and fer-folate. Many activities are also aimed specifically at increasing community organization. Various festivities are planned to bring the community together and recognize program participants.

Participation: On the average 80 percent of eligible women in the program villages attend regularly. Apparently attendance varies by village type. Larger villages and less isolated villages have poorer participation rates.

Aspects of the program worth investigation and program strengths:

- effective community motivation mechanisms (in the absence of food handouts);
- increasing relevance of growth monitoring by monitoring mother as well;
- strong administrative structure, including regionalization;
- good staff selection procedures;
- experimental growth chart;
- educational materials and methods.

Problems and limitations:

- Size of groups (80 mothers per session) is too large; CARE wants to divide groups in half.
- Problems with generalization of this model. It seems to be most effective in isolated rural communities. It is not clear if community mobilization techniques would hold true elsewhere.
- Replicability problem due to high human resource costs of training.

B. OTHER PROGRAMS

1. SCHOOL FEEDINGS

The school feeding programs reach the largest number of beneficiaries and provide the largest amount of food aid (see Table 4.6) of any program. The tonnage of food distributed almost doubled over the 1983-87 period, while the quantity of food per person increased significantly from 25.4 to 39.3 kg per schoolchild. A typical lunch includes bulgar or corn porridge mixed with oil and a glass of milk (a third of the required daily allowance). These programs, which are carried out in 70 percent of the public schools and 35 percent of the private schools, supply rations for more than 440,000 children. Four PVOs (CARE, Catholic Relief Services, Church World Services and ADRA) and the World Food Program are involved in these activities. The aim of the school feeding programs is to improve nutritional status, school enrollment and attendance as well as performance. The evaluation conducted in 1982 found that the Haitian school feeding program had a positive impact on the nutritional well-being of its beneficiaries (i.e. it contributed to a decrease in the rate of nutritional deterioration).

Inadequate targeting and management problems have been identified as important: the school selection is on a first come first served basis however, (no effort is made to seek the neediest institutions and schoolchildren); ration dilution and substitution occurs on a small scale; 17 percent of the commodities are used for extra-program purposes. It is clear also that this program does not reach the poorest children of school-age who are not attending school, since the crude rate for enrollment is 56 percent at primary level and 15.8 percent at the secondary level (EMMUS).

2. ORT AND BREASTFEEDING PROMOTION PROGRAM (PRONACODIAM)

PRONACODIAM is a national program which started in 1983 and is sponsored mainly by UNICEF/JNSP with contributions from other donors. The program's goal is to improve diarrheal

disease management and to promote breastfeeding. It has the following specific objectives:

- To ensure that 30 percent of the women in urban areas and 60 percent in rural areas breastfed their babies exclusively for the first three months.
- To ensure that 60 percent of the urban women and 90 percent of the rural women prolong breastfeeding for up to 12 months.
- To ensure that 60 percent of mothers are informed about good weaning practices.

The program also has several objectives aimed at improving the management of diarrheal diseases.

A comprehensive program evaluation was conducted in 1985 suggesting mixed results of PRONACODIAM at that time (only two years into operation). At the time of the study, the activities focused mainly on the control of diarrheal disease aspects, and the promotion of breastfeeding was not yet a part of the program. Overall, the ORT component was associated with high levels of knowledge change among the urban population but substantially lower rates in rural areas. Surveys monitoring ORT practices have produced mixed results but suggest that utilization is fairly low. Investigators have attributed the shortcomings of the program to inadequate development of educational strategies and inadequate attention to ORT distribution systems. (In several surveys approximately half the households did not have access to ORS packets within a one hour distance.)

In 1987 the program began to develop the breastfeeding component of the program. Program activities included meetings and seminars for health professionals, development of educational materials such as slide-sound sets, radio spots, development of a breastfeeding promotion movie to be shown in certain health facilities and communities, and the preparation and supply of informational pamphlets and posters to health facilities. Sixteen radio stations aired 15 minute spots on a regular basis.

V. CONCLUSIONS AND PRELIMINARY RECOMMENDATIONS

Based on the broad-based review that was done certain key conclusions related to both nutritional problems and nutritional programs can be drawn.

1. Early infant feeding practices in Haiti are very probably important determinants of poor child health, nutritional status, and survival. Therefore, great emphasis should be placed on promoting exclusive breastfeeding for the first two/three months of life. A successful campaign has the potential to have a relatively high impact. A comprehensive campaign should include well developed social marketing approaches, as well as strategies for the motivation of health personnel. Attention should also be given to key legislative interventions, such as enforcing paid maternity leave and adopting the WHO/UNICEF code of marketing of breast milk substitutes in Haiti. Since PRONACODIAM has embraced this programmatic strategy in principle, great effort should be placed on the lessons learned from PRONACODIAM and on coordinating any educational strategy with this program. In addition, the Cite Soleil health program has included an aggressive anti-bottle campaign that should be carefully examined. It is quite likely that AED could provide key technical support for refining PRONACODIAM's and Cite Soleil's educational and social marketing approaches. It appears as though more careful exploration of maternal attitudes and constraints is required to develop successful ORT and infant feeding behavioral interventions (lack of adequate analysis surfaced as one of the limitations of the PRONACODIAM program).
2. A related problem area is diet during illness. Educational strategies must be carefully formulated to inform and motivate mothers to manage ill children properly. There is no information available on the recalcitrance of current maternal beliefs with respect to dietary management of

illness; nor do we understand why some mothers are positive deviants. These are important informational gaps that must be addressed by any potential educational programs.

3. Weaning diets are inadequate in both composition and quantity and feeding frequency is too low. It is clear that income is a major constraint but it is also clear that certain items such as wheat-flour based bread soups are supplanting more traditional and nutritious corn and bean based diets. AK-1000 was developed by the GOH as an appropriate weaning food for children in later infancy and early childhood. To date, use of AK-1000 has been limited. Two major difficulties have been cited: availability of the ready-to-cook product and promotional strategies. AK-1000 ingredients require substantial milling and they are not always available. In addition, the product has been used frequently in rehabilitation centers, thus giving the food the image of a food of the poor. Educational strategies to improve weaning diets are very classical in orientation by and large. They most frequently focus on food-group type messages. Perhaps the nutritional component of the PRONACODIAM program could be broadened in scope: instead of just improved breastfeeding practices, it might also include improved infant feeding practices. A complement of educational messages for the weaning interval might be considered.

More attention should also be given to the development of weaning foods for infants four to eight months old. The World Food Program is already in the testing phase of development of a flour/milk mixture that could be marketed pre-packaged.

4. The review identified several weaknesses in current nutrition intervention strategies which should be addressed. Nutritional education and GM/P efforts, on the whole, are not being effectively designed or managed. In most cases

growth monitoring is largely being used as a screening tool, since organizational factors impede effective individual counselling. By and large, group nutritional education programs are poorly designed and are allocated very little time. In addition, in most of the cases examined, health agents and professionals were inadequately trained for an educational function. One of the reasons for these difficulties is the large spectrum of services provided by many of the programs, nutrition being only one. Operations research is needed to assess appropriate nutritional and program management strategies within the various contexts that nutrition interventions operate in.

Another reason for the poor performance is lack of technical and training support for the nutritional components of these programs. The BON (Bureau of Nutrition) used to provide this support and at one time was extremely active in supporting educational programs. During that period many educational materials were developed that are still in widespread use today. The BON was all but disbanded a few years ago, however. Since then, no other organization has served the advocacy and support function for nutrition sector activities. It should be assessed in the institutional assessment phase to what extent IHE and INSHAC could serve as private sector analogues. This type of support is particularly important for Child Survival programs. Generally, these programs include, but do not focus on, nutritional components of their service delivery complement.

Most programs sorely need management expertise and training. Reams of unused service statistics and health data was one symptom of the problem. In addition, supervision was commonly weak and training protocols developed several years ago by the BON have neither been adapted nor updated by most organizations.

5. The review also identified several modalities of nutrition interventions being delivered in Haiti. It would be useful to design cost-effectiveness studies to compare program strategies(Non-AED). This type of study necessitates impact data.
6. We are concerned about the general lack of nutrition-related data in Haiti. Many critical KAP, economic, and nutritional information gaps exist. Hopefully, some of these will be filled by the Income and Expenditure Survey to be available in late October of this year (Hellen Jensen, personal communication). This study examined family consumption and economic factors (but not individual level consumption). Anthropometric measures were taken on the eldest child under 5 years of age in the household. Seasonal consumption patterns also were be addressed in the survey. Although many health surveys have been conducted during the past five years none has collected adequate information on nutritional KAP and nutritional status. It is recommended that more serious consideration be given to increasing the attention paid to nutritional factors when planning these surveys. It should be remembered that the marginal cost of adding well formulated nutrition modules is not great.
7. Finally, before effective communications efforts on breastfeeding, infant feeding or vitamin A can be launched, specific research must be undertaken to understand the causes of behaviors that are believed to be maladaptive. Why do mothers introduce supplements so early? Is this because of economic necessity or knowledge gaps? Are weaning diets deficient because of knowledge and attitudinal factors or economic destitution? What are the causes of the failure of efforts to develop and diffuse appropriate local weaning foods such as AK-1000? Another important are of research is the appropriate mix of communications strategies that should be used. The PRONACODIAM program experience

suggests that interpersonal channels should play an important role.

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Addendum

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TABLE 1.3.1

Percentage Distribution of
Preschool Children by Gomez Classes
and Geographic Area: Haiti 1978

| Geographic Area ^{a/} | Degree of Malnutrition ^{a/} | | | | Total ^{c/} |
|-----------------------------------|--------------------------------------|-----------------|-----------------|-----------------|---------------------|
| | 306/ <60.0 | 20 60.0-74.9 | 10 75.0-89.9 | Normal 90.0+ | |
| I | 3.0% | 22.8% | 48.8% | 25.4% | 100.0% (891) |
| II | 5.7% | 28.5% | 46.2% | 19.6% | 100.0% (892) |
| III | 2.5% | 28.3% | 45.4% | 23.7% | 100.0% (289) |
| IV | 2.7% | 23.4% | 47.2% | 26.3% | 100.0% (895) |
| V | 3.6% | 25.9% | 46.0% | 24.5% | 100.0% (893) |
| Representative Rural Sample | 3.5% | 26.0% | 46.4% | 24.1% | 100.0% (4460) |
| ----- | | | | | |
| VI | 1.5% | 13.1% | 43.8% | 41.7% | 100.0% (893) |
| Representative National Sample | 3.2% | 24.1% | 46.0% | 26.8% | 100.0% (5353) |
| ----- | | | | | |
| Special Group | | 0.5% | 15.1% | 84.4% | 100.0% (730) |

^{a/}Percentage of reference median weight for age.

^{b/}Children identified as having pedal edema were not automatically classified as third degree malnutrition.

^{c/}All percentages are weighted by universe population proportions.
The actual number of persons surveyed are given in parentheses.

TABLE 1.3.2

Percentage Distribution of
Preschool Children by Waterlow Classes
and Geographic Area: Haiti 1978

| <u>Geographic Area</u> | <u>Waterlow Class</u> | | | | <u>Total</u> [*] |
|-----------------------------------|-----------------------|-----------------|-----------------------------------|---------------|---------------------------|
| | <u>Wasting</u> | <u>Stunting</u> | <u>Wasting & Stunting</u> | <u>Normal</u> | |
| I | 3.1% | 24.5% | 2.1% | 70.3% | 100.0% (891) |
| II | 2.5% | 29.0% | 4.4% | 64.1% | 100.0% (892) |
| III | 3.5% | 25.8% | 3.4% | 67.4% | 100.0% (889) |
| IV | 2.9% | 24.8% | 2.2% | 70.1% | 100.0% (895) |
| V | 3.1% | 22.7% | 4.1% | 70.0% | 100.0% (893) |
| Representative Rural Sample | 3.0% | 25.2% | 3.4% | 68.4% | 100.0% (4460) |
| VI | 2.4% | 14.2% | 1.5% | 82.0% | 100.0% (893) |
| Representative National Sample | 2.9% | 23.6% | 3.1% | 70.4% | 100.0% (5353) |

^{*}/ All percentages are weighted by universe population proportions. The actual number of persons surveyed are given in parentheses.

TABLE 1.3.3

Percentage Distribution of
Preschool Children by Weight for Height Classes
and Geographic Area: Haiti 1978

| Geographic Area—/ | Percentage of Reference Median | | | | Total*/ |
|-----------------------------------|--------------------------------|-----------|----------------------|-------------------------|---------------|
| | Wasting "<80.0 | 80.0-84.9 | Normal 85.0-119.9 | Over- Weight 120+ | |
| I | 5.3% | 9.5% | 84.6% | 0.6% | 100.0% (891) |
| II | 6.8% | 10.3% | 82.3% | 0.6% | 100.0% (892) |
| III | 6.9% | 11.6% | 80.5% | 1.0% | 100.0% (389) |
| IV | 5.1% | 9.3% | 85.1% | 0.4% | 100.0% (295) |
| V | 7.3% | 10.8% | 81.0% | 1.0% | 100.0% (893) |
| Representative Rural Sample | 6.4% | 10.4% | 82.5% | 0.7% | 100.0% (4460) |
| ----- | | | | | |
| VI | 3.8% | 7.1% | 87.0% | 2.1% | 100.0% (893) |
| Representative National Sample | 6.0% | 9.9% | 83.1% | 1.0% | 100.0% (5353) |
| ----- | | | | | |
| Special Group | 0.1% | 1.2% | 93.6% | 5.1% | 100.0% (730) |

*/ All percentages are weighted by universe population proportions.
The actual number of persons surveyed are given in parentheses.

TABLE 1.4

Malnutrition (Waterlow and Gómez Classifications)
of 3 to 23 Month Old Children in Two Areas
of Cité Simone

| | Waterlow Classification | | Gomez Classification |
|--------------------|--------------------------|---------------------------|---|
| | % Wasted <80% of Std. | % Stunted <90% of Std. | % in 2nd and 3rd Degree Malnutrition |
| Boston Children | 17 | 14 | 32 |
| Brooklyn Children | 30 | 25 | 37 |
| Significance Level | P <0.05 | P <0.10 | N.S. |

TABLE 1.7

PREVALENCE OF WASTING BASED ON THE WEIGHT DISPERSION (WDM):

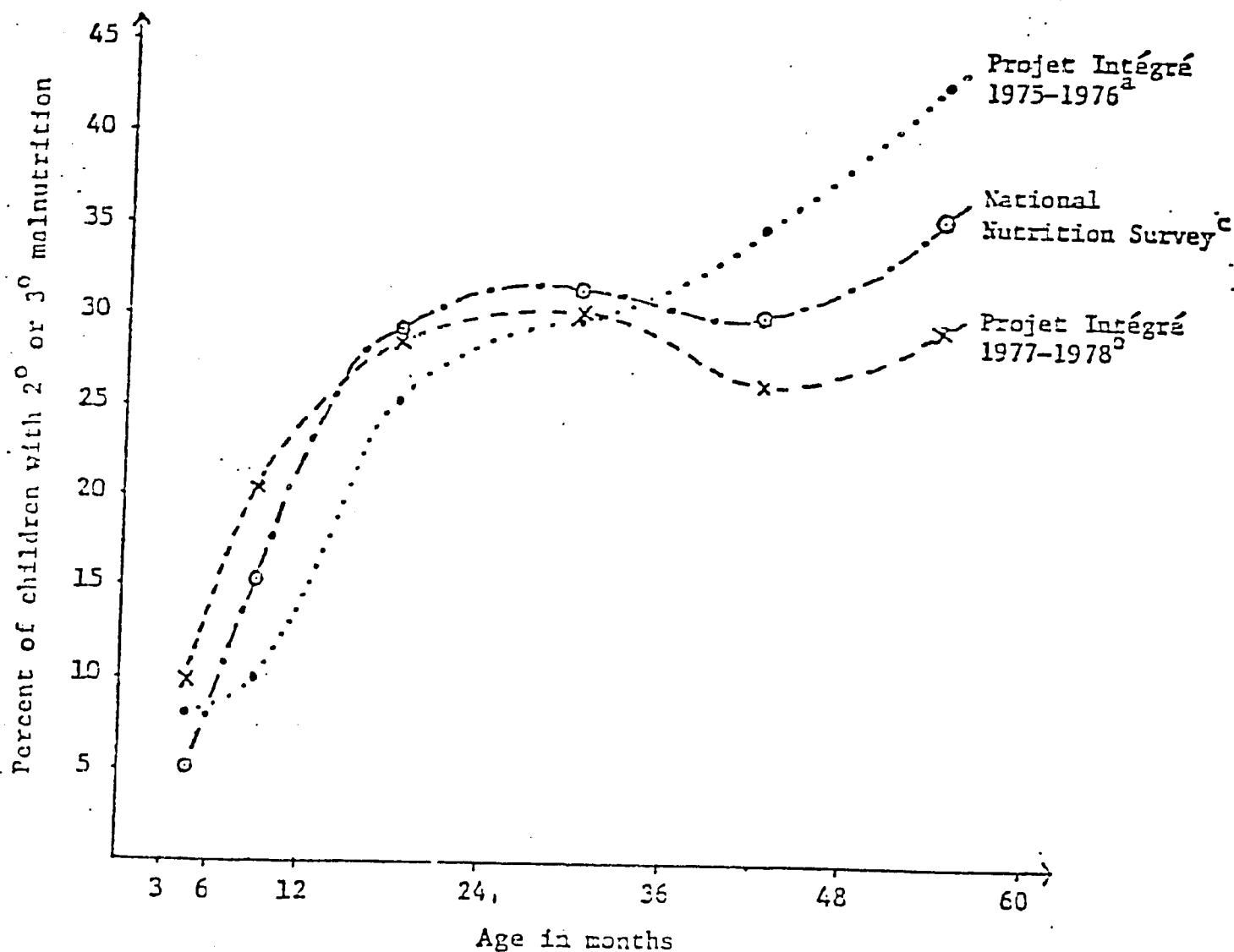
(Sample Size/Number Exhibiting Wasting/Prevalence in %)

| | Program | Non-Program |
|---------------|--------------|--------------|
| Total Sample | 515/113/21.9 | 511/136/26.6 |
| Urban | 264/65/24.6 | 287/83/28.9 |
| Rural | 251/48/19.1 | 224/53/23.7 |
| Public Urban | 159/40/25.2 | 80/26/32.5 |
| Private Urban | 105/25/23.8 | 207/57/27.5 |
| Public Rural | 157/34/21.7 | 74/18/24.3 |
| Private Rural | 94/14/14.9 | 150/34/22.7 |

*Children are considered acutely malnourished or wasting if their WDM score is less than -180. This is roughly equivalent to the WTSTD score less than 85%.

FIGURE 1.1

Percent of children 3 to 59 months with second or third degree malnutrition



sources:

- 1) Division d'Hygiène Familiale (1979). Prevalence de la malnutrition ... au debut de l'étude, p. 114.
- 2) Division d'Hygiène Familiale (1979). Prevalence de la malnutrition ... a la fin de l'étude, p. 115
- 3) Bureau of Nutrition (1979). Table 7, Percentage distribution of preschool children by Gomez classes and age: Haiti 1978.

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FIGURE 1.2

Percent of Preschool Children in Chronic Undernutrition, By Age: Haiti 1978

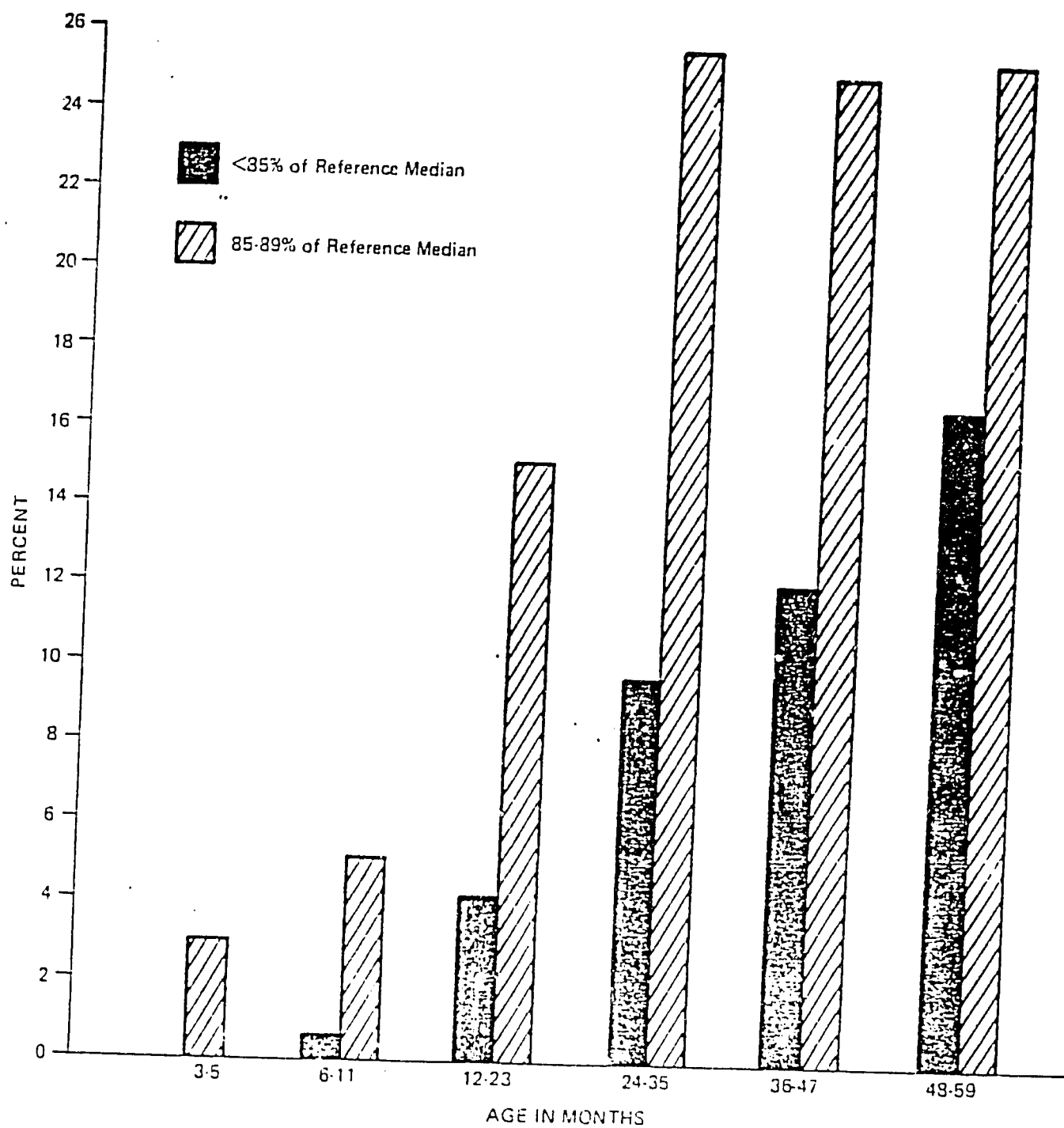
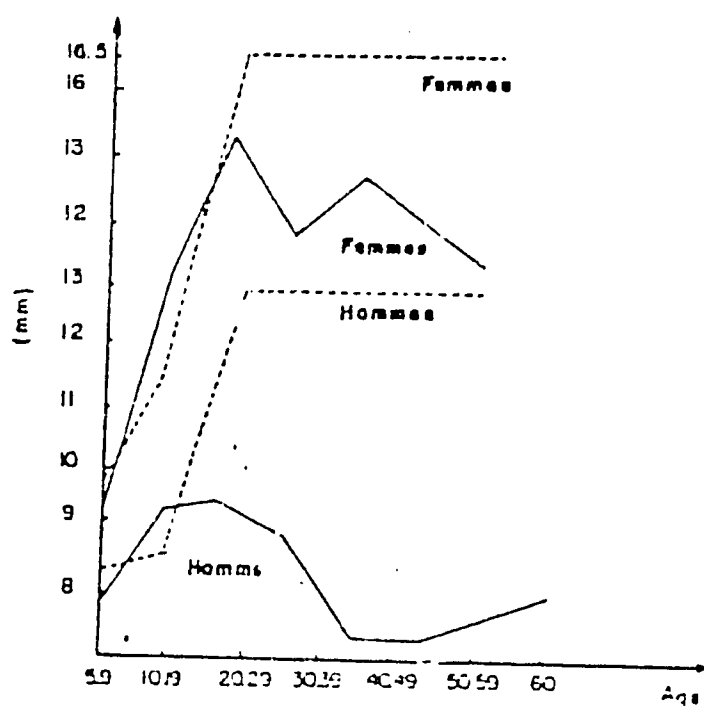


FIGURE 1.3



SOURCE: Seaton (1958) modified
 Mediane (—)
 Moyenne + Standard IGWA (-----)

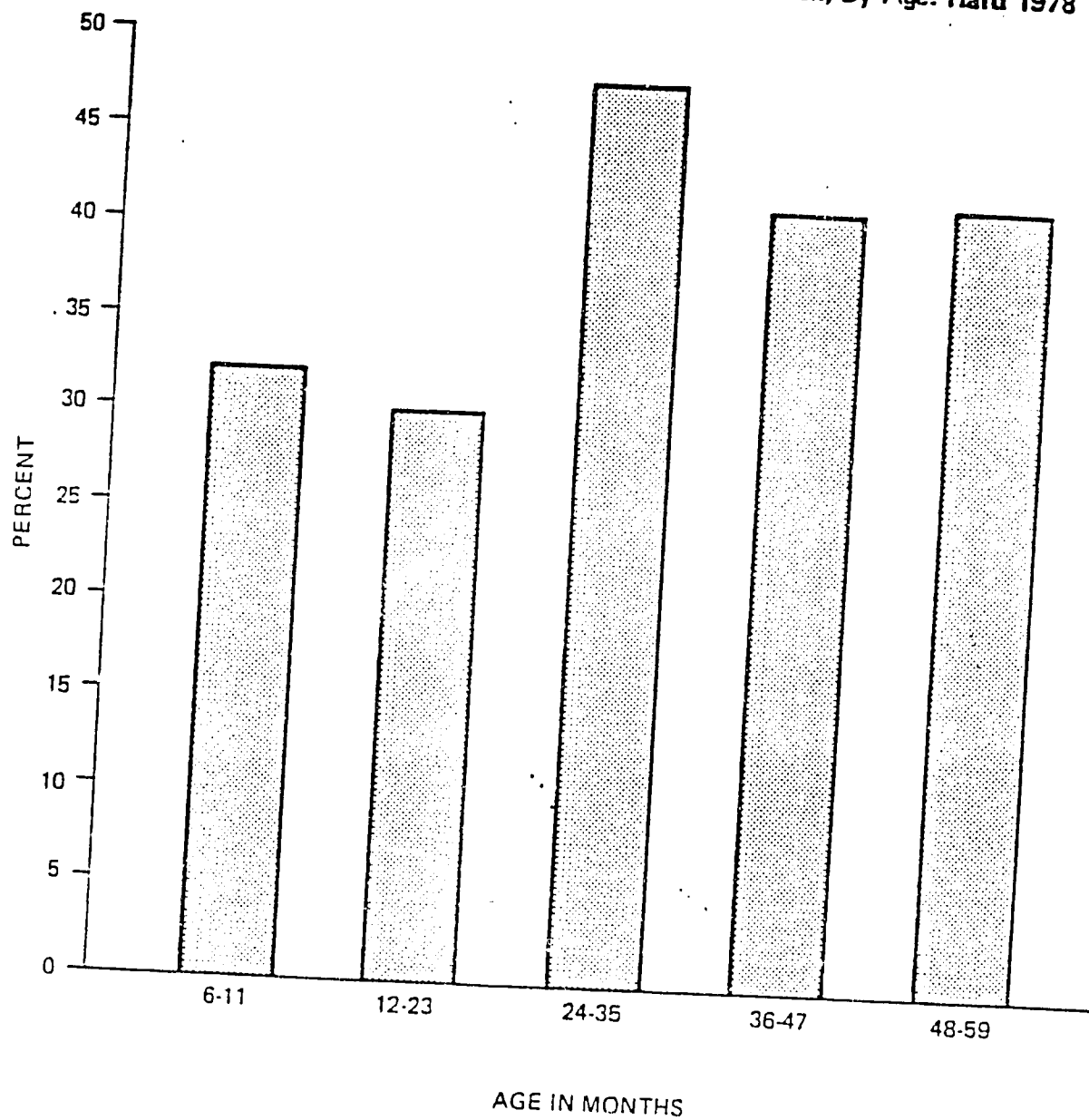
TABLE 1.8

Median Measures of Maternal Nutritional Status
by Age in Cite Simone, Haiti, 1981

| Age | N | % IANES Weight for Height by Age | Wt/Ht ² | % Body Fat | |
|-------|----|---|--------------------|--------------|---------------------|
| | | | | Moore Method | Cohn, et al. Method |
| 15-19 | 10 | 86 | 2.03 | 26.5 | 23.4 |
| 20-24 | 68 | 85 | 2.00 | 25.8 | 24.8 |
| 25-29 | 66 | 78 | 1.94 | 24.2 | 24.9 |
| 30-34 | 43 | 82 | 2.01 | 26.5 | 26.1 |
| 35-39 | 35 | 75 | 1.99 | 25.4 | 28.1 |
| 40-44 | 13 | 76 | 2.01 | 25.8 | 30.5 |
| 45-49 | 12 | 78 | 2.08 | 27.6 | 28.5 |
| 50-59 | 6 | 76 | 2.01 | 25.9 | 29.5 |

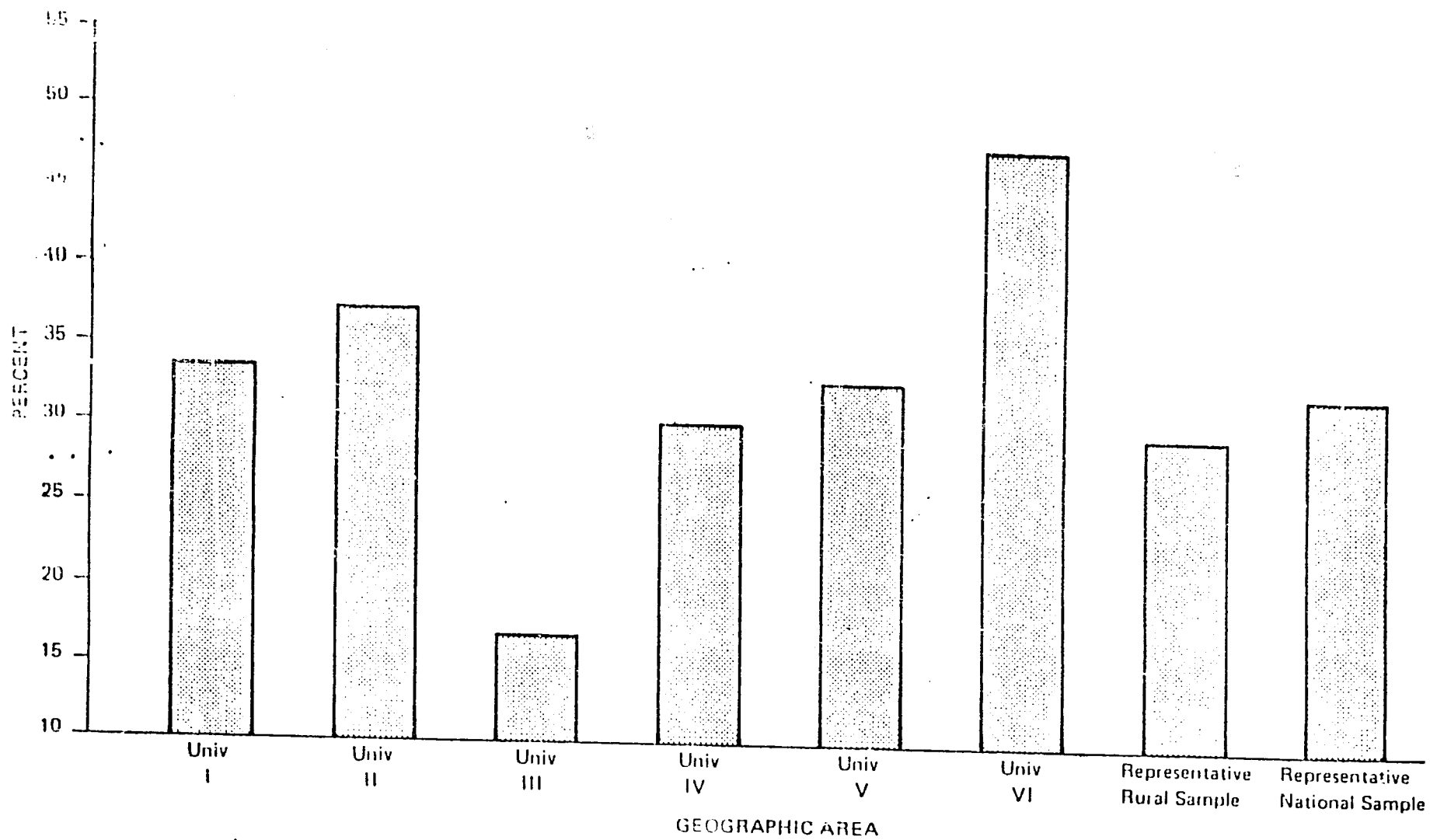
FIGURE 1.4

Prevalence of Anemia¹ in Preschool Children, By Age: Haiti 1978



¹Anemia defined as a hemoglobin value of <10 gms/100 cc for ages <24 months and <11 gms/100 cc for ages >24 months.

Prevalence of Anemia¹ in Preschool Children by Geographic Area: Haiti 1978

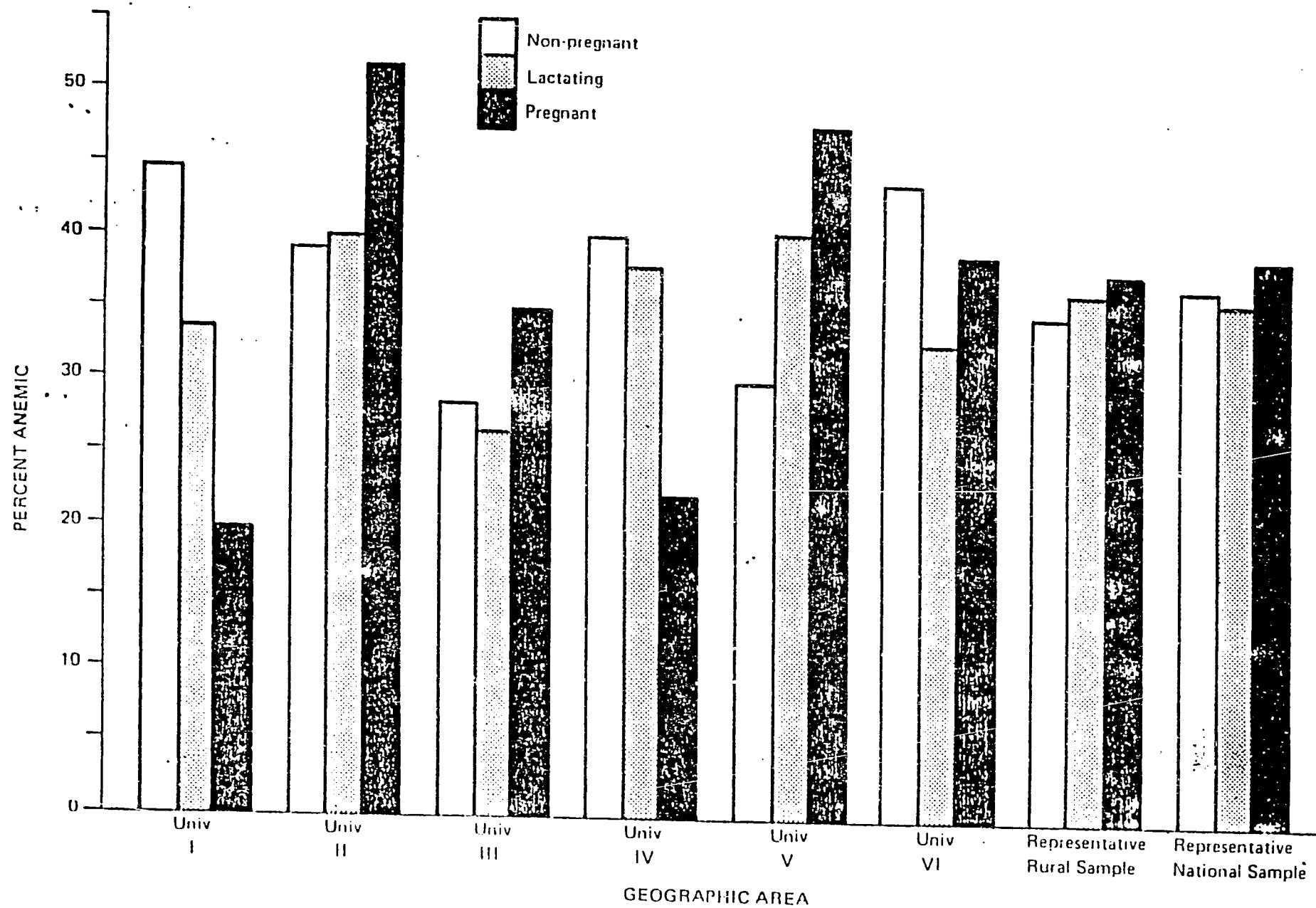


¹Anemia defined as a hemoglobin value of <10 gms/100 cc for ages <24 months and <11 gms/100 cc for ages >24 months.

FIGURE 1.5

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Prevalence of Anemia¹ in Pregnant, Non-pregnant, and Lactating Guardians/Biological Mothers of Preschool Children by Geographic Area: Haiti 1978



¹Anemia defined as a hemoglobin value of <12 gms/100 cc for non-pregnant and lactating women and <11 gms/100 cc for pregnant women.

Mean Hemoglobin Values of Pregnant, Non-pregnant, and Lactating Guardians, By Geographic Area: Haiti 1978

FIGURE 1.7

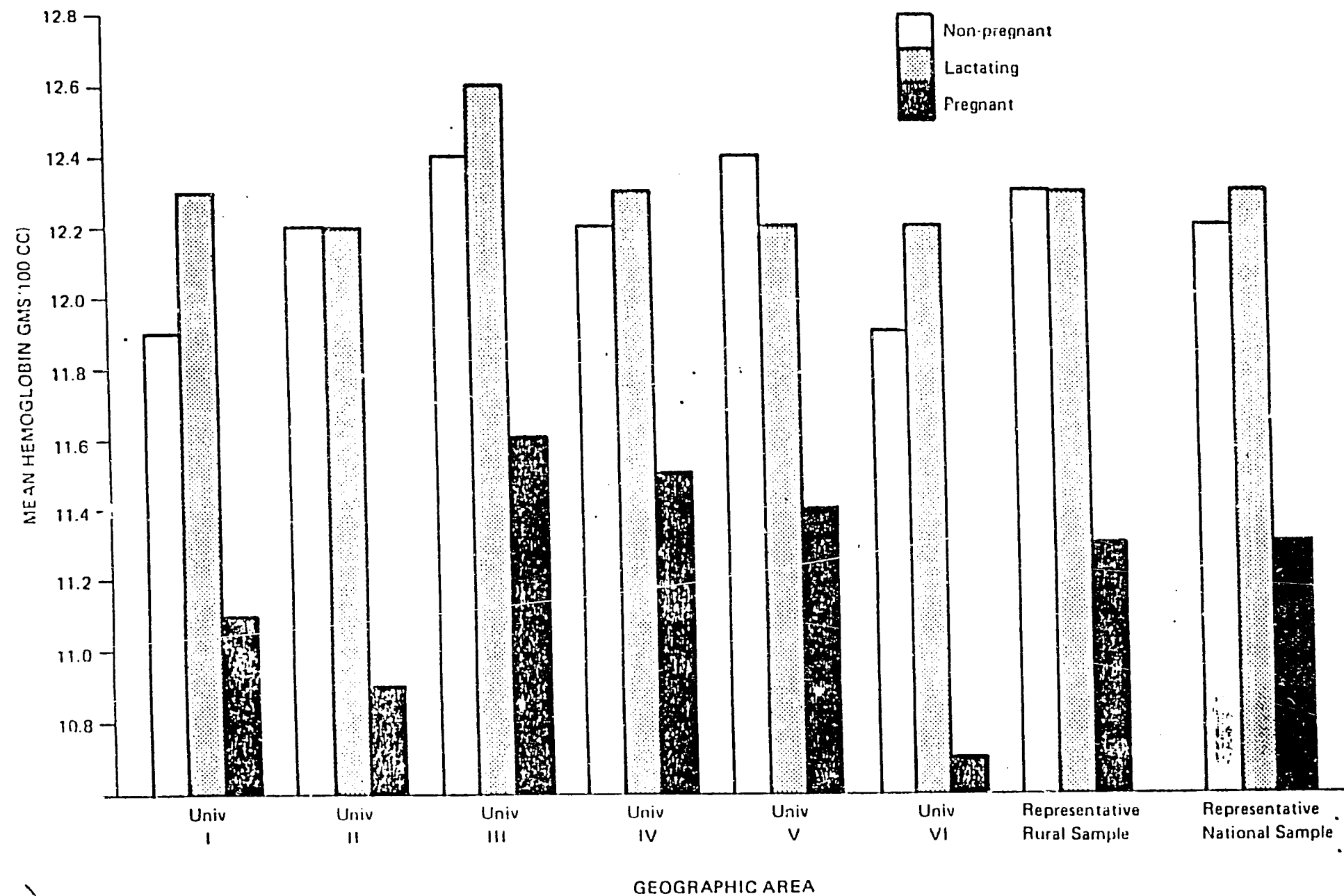


TABLE 2.1

Percentage Distribution of Preschool Children being Breast-Fed
at the Time of the Survey by Age of Child
and Geographic Area: Haiti 1978

| Age in Months | Geographic Area ^{a/} | | | | | | Total ^{a/} |
|---------------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| | I | II | III | IV | V | VI | |
| 3-5 | 100.0% (44) | 98.3% (60) | 100.0% (55) | 96.7% (60) | 100.0% (56) | 90.2% (61) | 97.3% (336) |
| 6-11 | 95.1% (103) | 97.3% (113) | 96.3% (108) | 90.9% (99) | 94.1% (135) | 71.7% (113) | 91.0% (671) |
| 12-23 | 59.7% (181) | 66.9% (175) | 60.5% (195) | 50.3% (177) | 53.6% (237) | 28.9% (166) | 53.1% (1131) |
| 24-35 | 0.6% (157) | 5.4% (184) | 5.2% (153) | 3.1% (162) | 5.8% (121) | 3.1% (161) | 4.3% (938) |
| 36-59 | 0.4% (275) | - (262) | 1.1% (265) | 0.4% (275) | 1.2% (249) | 1.6% (254) | 0.8% (1580) |
| Total ^{b/} | 33.2% (760) | 37.3% (794) | 37.1% (776) | 31.4% (773) | 40.1% (798) | 25.6% (755) | 34.6% (4656) |

^{a/}All percentages are weighted by universe population proportions. The actual number of preschool children whose biological mothers were questioned about the breast-feeding status of their children is given in parentheses.

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Percentage Distribution of Survey Children's Age at Weaning,
by Age of Mother: Haiti 1978

Representative Rural Sample

| <u>Age of Mother in Years</u> | <u>Age of Child at Weaning (in Months)</u> | | | | <u>Total^{a/}</u> |
|-----------------------------------|--|--------------|--------------|-----------------------------|---------------------------|
| | <u><12</u> | <u>12-17</u> | <u>18+</u> | <u>Never Breast-fed</u> | |
| <25 | 19.5% | 42.8% | 36.9% | 0.9% | 100.0% (295) |
| 25-34 | 10.4% | 36.8% | 52.3% | 0.5% | 100.0% (1316) |
| 35+ | 8.2% | 26.9% | 64.7% | 0.1% | 100.0% (860) |
| Total | 10.9% (245) | 34.4% (857) | 54.4% (1361) | 0.4% (8) | 100.0% (2471) |

Urban Sample

| <u>Age of Mother in Years</u> | <u>Age of Child at Weaning (in Months)</u> | | | | <u>Total^{a/}</u> |
|-----------------------------------|--|--------------|-------------|-----------------------------|---------------------------|
| | <u><12</u> | <u>12-17</u> | <u>18+</u> | <u>Never Breast-fed</u> | |
| <25 | 51.9% | 20.7% | 12.6% | 14.8% | 100.0% (135) |
| 25-34 | 44.2% | 28.2% | 17.6% | 10.0% | 100.0% (301) |
| 35+ | 32.7% | 34.5% | 29.2% | 3.5% | 100.0% (113) |
| Total | 43.7% (240) | 27.7% (152) | 18.8% (103) | 9.8% (54) | 100.0% (549) |

^{a/} All percentages are weighted by universe population proportions and are based on

Percentage Distribution of Survey Children's Age at Weaning,
by Mother's Number of Live Births: Haiti 1978

Representative Rural Sample

| <u>Number of Live Births</u> | <u>Age of Child at Weaning (in Months)</u> | | | | <u>Total^{a/}</u> |
|----------------------------------|--|--------------|--------------|-----------------------------|---------------------------|
| | <u><12</u> | <u>12-17</u> | <u>18+</u> | <u>Never Breast-fed</u> | |
| 1 | 15.8% | 43.2% | 40.2% | 0.7% | 100.0% (191) |
| 2 | 14.3% | 40.7% | 45.0% | - | 100.0% (419) |
| 3 | 8.8% | 37.6% | 53.3% | 0.3% | 100.0% (416) |
| 4 | 11.2% | 31.8% | 55.1% | 1.9% | 100.0% (360) |
| 5 or greater | 9.3% | 29.8% | 60.8% | 0.1% | 100.0% (1087) |
| Total | 10.8% (245) | 34.3% (857) | 54.4% (1363) | 0.4% (8) | 100.0% (2473) |

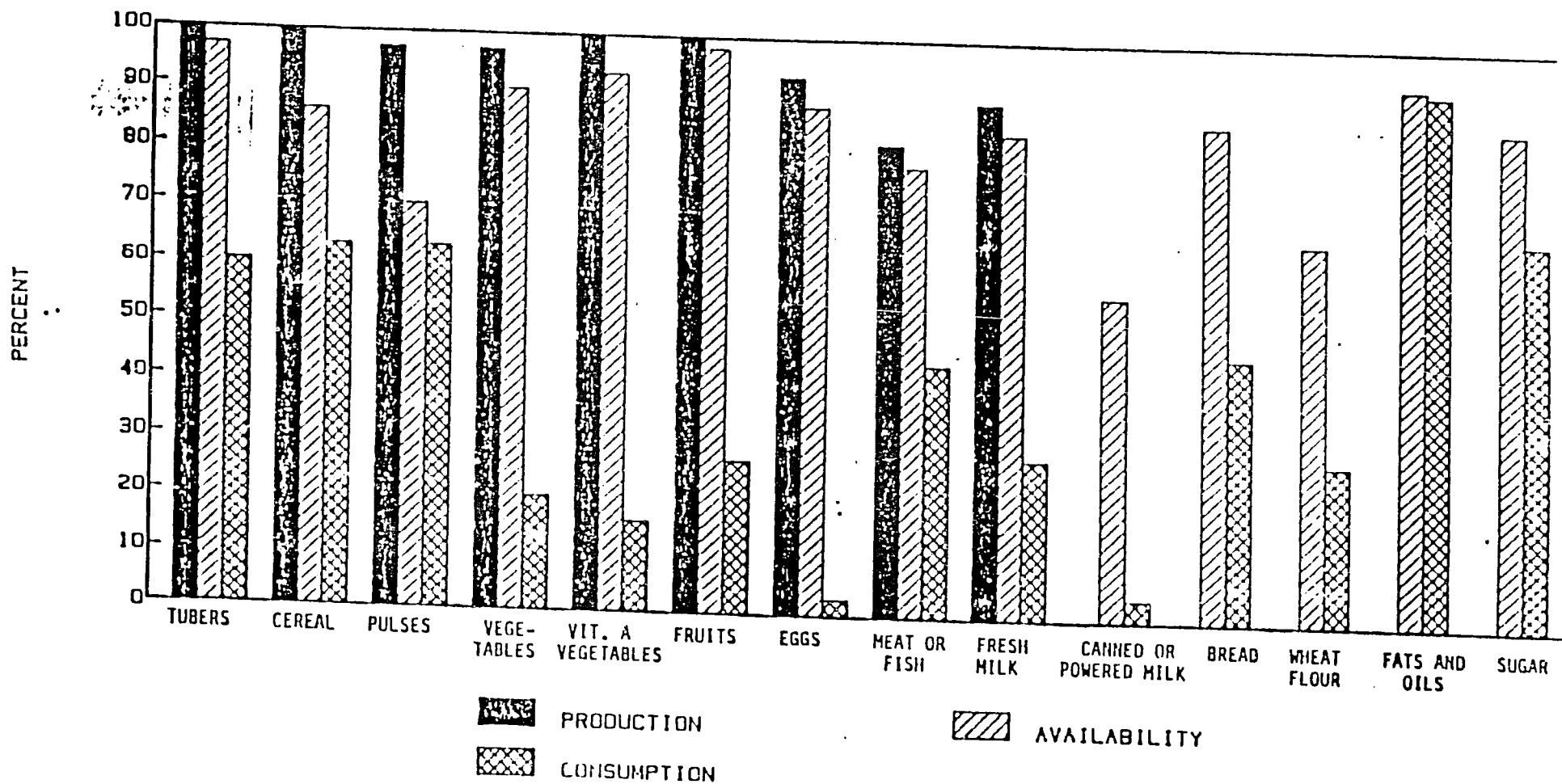
Urban Sample

| <u>Number of Live Births</u> | <u>Age of Child at Weaning (in Months)</u> | | | | <u>Total^{a/}</u> |
|----------------------------------|--|--------------|-------------|-----------------------------|---------------------------|
| | <u><12</u> | <u>12-17</u> | <u>18+</u> | <u>Never Breast-fed</u> | |
| 1 | 52.9% | 20.7% | 10.3% | 16.1% | 100.0% (87) |
| 2 | 53.2% | 18.0% | 13.5% | 15.3% | 100.0% (111) |
| 3 | 45.5% | 32.5% | 15.4% | 6.5% | 100.0% (123) |
| 4 | 38.0% | 33.8% | 19.7% | 8.5% | 100.0% (71) |
| 5 or greater | 33.1% | 31.8% | 29.3% | 5.7% | 100.0% (157) |
| Total | 7% (240) | 27.7% (152) | 18.8% (103) | 9.8% (54) | 100.0% (549) |

^{a/} Percentages are weighted by universe population proportions and are based on number of children with available data.

Percent of rural communities that produce a food, percent in which it is available at the time of the survey, and percent of children in the rural universe that consume the food.

FIGURE 2.1



Source: 1978 Dietary Survey, U.S.A.I.D. p. 37.

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TABLE 2.7

QUANTITE DE NUTRIMENTS CONSOMMES
PAR ENFANT/JOUR
LEUR ADEQUATION PAR RAPPORT
AUX QUANTITES RECOMMANDEES

| COMMUNAUTES | AGE MOYEN (Mois) | CALORIES | | PROTEINES | | VITAMINES A | | FER | |
|-------------|---------------------|----------|--------------|-----------|--------------|-------------|--------------|------|--------------|
| | | No. | % d'Adéq. | g | % d'Adéq. | mg | % d'Adéq. | mg | % d'Adéq. |
| Fond Droit | 33 | 826 | 57,0 | 17.3 | 60,0 | 486 | 194,0 | 6.4 | 64,0 |
| La Montagne | 40 | 852 | 59,0 | 15.5 | 53,0 | 822 | 329,0 | 8.2 | 82,0 |
| Orangers | 39 | 1.267 | 87,0 | 33.5 | 116,0 | 195 | 78,0 | 10.3 | 103,0 |

SOURCE: Bureau de Nutrition, 1977.

Consommation moyenne quotidienne en énergie et nutriments par 3 catégories de personnes.
(Bloc Joanisse)

TABLE 2.8

| CATEGORIES DE PERSONNES | Energie (Kcal) | N U T R I M E N T S | | | | | | | | | |
|-------------------------------|-------------------|------------------------|-----------------------|-------------------------------|------------|------------|----------------|-----------------------|----------------|----------------------|---------------|
| | | Protei- nes (gr) | Grais- ses (gr) | Hydra- tes de C (gr) | Ca (mg) | Fe (mg) | Vit.A (U.I) | Thia- mine (mg) | Vit.B2 (mg) | Niaci- ne (mg) | Vit C (mg) |
| une adulte | 1.985 | 52 | 42 | 348 | 280 | 14 | 1.169 | 1 | 1 | 11.8 | 41 |
| une enceinte | 1.237 | 31 | 21 | 230 | 134 | 6 | 764 | 6 | 4 | 7 | 37 |
| ants Moins- 6 ans | 965 | 23 | 20 | 174 | 113 | 6 | 458 | 0.4 | 0.3 | 5 | 18 |

TABEAU II-1.4

Adéquation de la consommation journalière en énergie et nutriments par rapport
aux besoins de 3 catégories de personnes - Bloc Joanisse.
(En pourcentage)

| CATEGORIES de PERSONNES | Energie | N U T R I M E N T S | | | | | | | | | |
|-------------------------------|---------|---------------------|---------------|-----------------|-----|-----|-------|---------------|--------|--------------|-------|
| | | Protéi- nes | Grais- ses | Hydra- tes C | Ca | Fe | Vit.A | Thia- mine | Vit.B2 | Niaci- ne | Vit C |
| une adulte | 66 | 84 | 40 | 77 | 200 | 156 | 156 | 83 | 56 | 60 | 137 |
| une enceinte | 49 | 49 | 24 | 60 | 200 | 21 | 102 | 60 | 27 | 42 | 74 |
| ants moins 6 ans | 53 | 68 | 30 | 63 | 200 | 60 | 153 | 175 | 27 | 41 | 90 |

Source : UPAN 1984

FIGURE 2.2

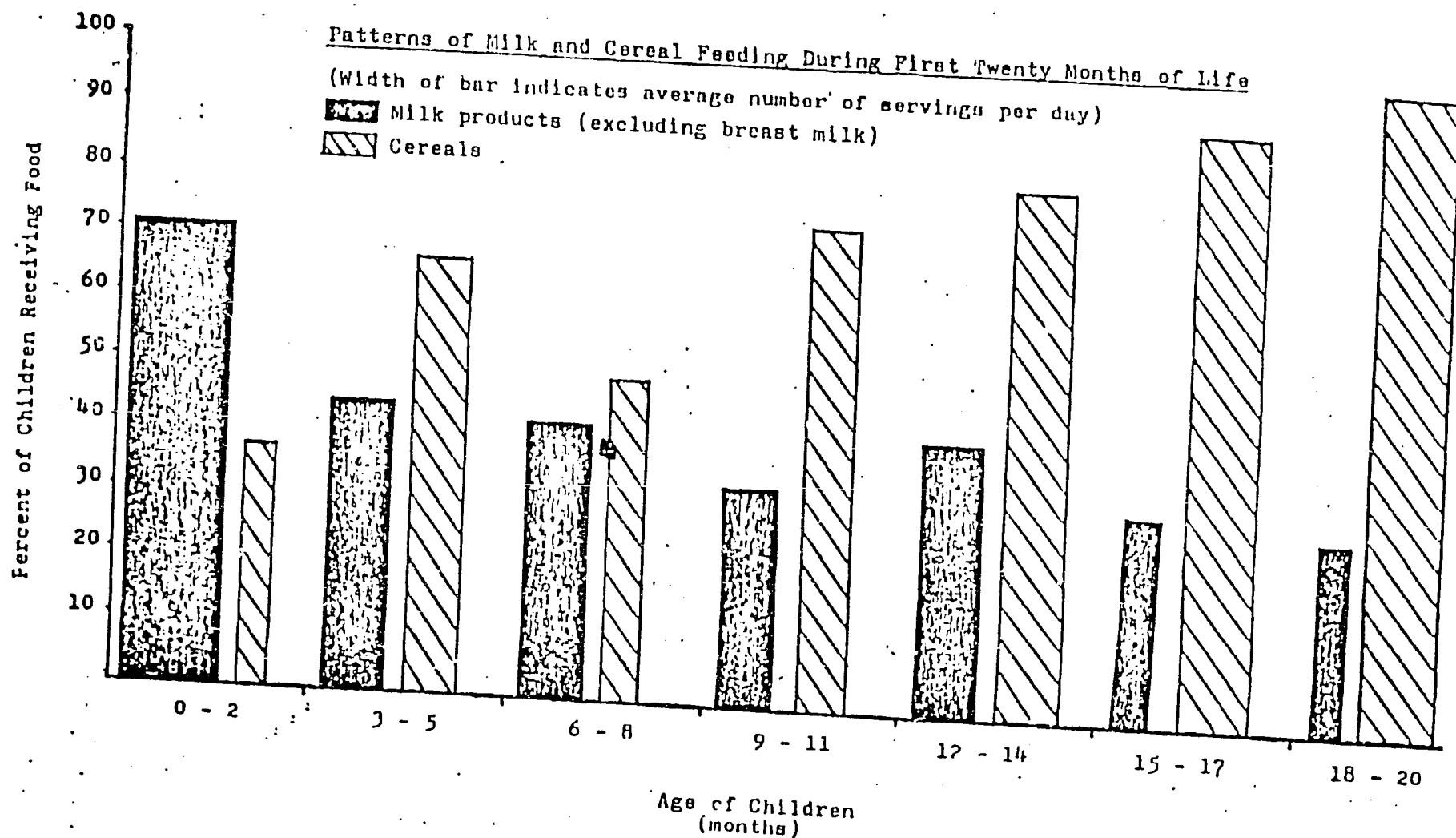


TABLE 2.9

DOMESTIC AGRICULTURAL PRODUCTION (1000 MT), HAITI

| FOOD CROPS | | | | | | | | | | | | |
|------------|-------|---------|-----------|---------|---------|-------------------|-------|--------|-------|---------|--------|-------|
| MAIZE | RICE | SORGHUM | PLANTAINS | BANANAS | CASSAVA | SWEET POTATOES | YAM | COFFEE | COCOA | SUGAR | COTTON | SISAL |
| 181.1 | 160.0 | 98.0 | 72.2 | 553.4 | 250.0 | 250.0 | 150.0 | 31.0 | 2.3 | 2,400.0 | 1.3 | 9.7 |
| 168.0 | 147.0 | 111.0 | 73.3 | 409.3 | 250.0 | 280.0 | 150.0 | 32.0 | 1.3 | 2,200.0 | 1.0 | 9.4 |
| 161.0 | 177.0 | 100.0 | 78.2 | 485.7 | 250.0 | 306.0 | 150.0 | 27.9 | 2.9 | 2,500.0 | 1.5 | 11.7 |
| 183.0 | 166.0 | 123.0 | 83.4 | 511.5 | 250.0 | 253.0 | 150.0 | 35.9 | 2.3 | 2,500.0 | 1.3 | 5.5 |
| 186.0 | 200.0 | 125.0 | 90.1 | 553.2 | 250.0 | 282.0 | 150.0 | 42.3 | 2.3 | 2,500.0 | 2.1 | 9.4 |
| 173.0 | 194.0 | 120.0 | 85.7 | 471.4 | 250.0 | 282.0 | 150.0 | 33.3 | 2.5 | 2,500.0 | 2.7 | 2.6 |
| 175.0 | 206.0 | 118.0 | 85.0 | 555.7 | 250.0 | 313.0 | 150.0 | 32.3 | 4.5 | 2,500.0 | 1.2 | 7.1 |
| 175.3 | 182.0 | 107.0 | 79.3 | 417.5 | 250.0 | 346.0 | 150.0 | 36.0 | 4.5 | 1,800.0 | 1.7 | 0.9 |
| 166.0 | 200.0 | 122.0 | 93.5 | 504.2 | 250.0 | 350.0 | 150.0 | 37.3 | 4.7 | 2,500.0 | 2.3 | 1.0 |
| 167.0 | 170.0 | 116.0 | 86.7 | 500.0 | 250.0 | 350.0 | 150.0 | 36.0 | 5.1 | 2,500.0 | 2.3 | 2.1 |

Levitt & Laurent (1986).

TABLE 2.10

PER CAPITA AVAILABILITY OF FOODS IN HAITI
IN 1984
(By Region)
(Finished Product in Kg.)

| PRODUCTS 1 | R E G I O N | | | | NATIONAL |
|------------------------|-------------|-------------|-------|-------|----------|
| | North | Transversal | West | South | |
| Cereals | 35.4 | 96.6 | 40.0 | 59.6 | 58.7 |
| - Maize | 4.3 | 40.0 | 21.1 | 31.1 | 27.9 |
| - Rice | 7.3 | 28.4 | 1.0 | 4.7 | 10.1 |
| - Sorghum/Millet | 3.8 | 9.2 | 17.9 | 20.2 | 20.7 |
| Roots, Tubers, Bananas | 167.7 | 119.9 | 62.1 | 157.2 | 112.4 |
| - Roots & Tubers | 105.1 | 83.3 | 44.1 | 114.4 | 77.2 |
| - Bananas | 62.6 | 36.6 | 18.0 | 45.8 | 35.2 |
| ane & Sugar | 817.4 | 241.5 | 361.2 | 222.1 | 369.0 |
| beans & Beans | 22.3 | 17.8 | 12.0 | 17.0 | 15.1 |
| uts & Seeds | 6.3 | 2.7 | 4.1 | 8.4 | 4.9 |
| Peanuts | 3.7 | 1.7 | 2.2 | 2.3 | 2.3 |
| Coconut | 2.6 | 1.0 | 1.9 | 6.1 | 2.6 |
| vegetables | ... | ... | ... | ... | 49.2 |
| ruits | 141.9 | 68.4 | 38.5 | 90.4 | 72.3 |
| Figs, Ripe Bananas | 15.0 | 6.9 | 5.5 | 14.3 | 9.0 |

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TABLE 2.11

Percentage Distribution of Occupations
of Mothers/Guardians by Geographic Area: Haiti 1978

| | <u>Representative Rural Sample</u> | <u>Urban Sample</u> |
|---|--|---------------------|
| Farmer (Cultivatrice) | 61.3% (1992) | (0) |
| Vendor at Home (Commerçante) | 4.8% (154) | 6.0% (40) |
| Artisan (Artisane) | 4.6% (132) | 11.2% (75) |
| Housewife (Femme de Menage) | 20.1% (599) | 55.4% (370) |
| Small Businesswoman (Petite Commerçante) | 7.8% (213) | 14.8% (99) |
| Large Businesswoman (Grande Commerçante) | 0.8% (21) | 4.0% (27) |
| Employed-Unskilled (Petite Employee) | 0.3% (9) | 2.4% (16) |
| Factory Worker (Ouvriere) | 0.1% (5) | 5.2% (35) |
| Secretary, Teacher (Autres) | 0.2% (8) | 0.9% (6) |
| Total—/ | 100.0% (3138) | 100.0% (668) |

—/ All percentages are based on weighted universe population proportions.
Actual number of persons surveyed are given in parentheses.

Percentage Distribution of Preschool Children^{a/}
 with Recent Symptoms of Illness, Fever, and Diarrhea
 by Weight for Height Z-Score: Haiti 1978

| Symptom | Weight for Height Z-Score | | | | | | | | | | | | Total ^{b/} | | | | | |
|----------|---------------------------|----|-----------------|-----|-----------------|-----|-----------------|------|----------------|------|---------------|-----|---------------------|-----------------|-------|-----------------|-------|-------------|
| | -6.00/ -3.00 | | -2.99/ -2.50 | | -2.49/ -2.00 | | -1.99/ -1.00 | | -.99/ -0.00 | | 0.00/ +.99 | | | +0.00/ +1.99 | | +2.00/ +6.00 | | |
| | | | | | | | | | | | | | | | | | | |
| Illness | 83.2% | 59 | 82.5% | 130 | 76.0% | 298 | 60.3% | 1622 | 52.3% | 2044 | 41.6% | 974 | 36.4% | 170 | 36.6% | 45 | 54.6% | 5342 (5353) |
| Fever | 61.5% | 59 | 71.8% | 130 | 58.9% | 297 | 49.4% | 1620 | 43.3% | 2045 | 32.1% | 973 | 29.0% | 170 | 33.3% | 45 | 44.4% | 5339 (5353) |
| Diarrhea | 62.7% | 59 | 57.6% | 130 | 54.3% | 296 | 36.6% | 1615 | 27.9% | 2037 | 22.9% | 969 | 24.8% | 170 | 30.6% | 45 | 32.2% | 5321 (5353) |

^{a/} Representative Numb

^{a/} Representative National Sample.

^{b/} All percentages are weighted by universe population proportions, and are based on children for whom data was available. The numbers in parentheses are the total number of survey children.

TABLE 3.1

TOTAL FOOD AID BY TYPE, HAITI
(METRIC TONS)

| | TOTAL CEREALS | WHEAT | RICE | COARSE GRAIN | MILK* POWDER | OTHER* DAIRY | VEG. OIL |
|------|------------------|--------|-------|-----------------|-----------------|-----------------|-------------|
| 1976 | 29,300 | 17,100 | -- | 12,200 | | | |
| 1977 | 66,700 | 51,600 | 8,300 | 6,800 | | | |
| 1978 | 55,400 | 32,800 | 2,700 | 19,900 | | | |
| 1979 | 59,500 | 42,300 | 4,900 | 12,300 | 2,672 | 541 | 4,915 |
| 1980 | 52,700 | 27,300 | 9,200 | 16,200 | 3,296 | 1,117 | 5,125 |
| 1981 | 83,600 | 51,000 | 6,800 | 25,900 | 2,734 | 1,257 | 2,804 |
| 1982 | 89,900 | 63,400 | 7,900 | 18,600 | 2,793 | 1,003 | 9,020 |
| 1983 | 89,700 | 71,900 | -- | 17,800 | 2,798 | 73 | 8,024 |
| 1984 | 71,600 | 54,700 | 100 | 16,700 | 3,656 | 53 | 6,061 |
| 1985 | 101,200 | 75,700 | 900 | 24,600 | 3,954 | 67 | 5,911 |

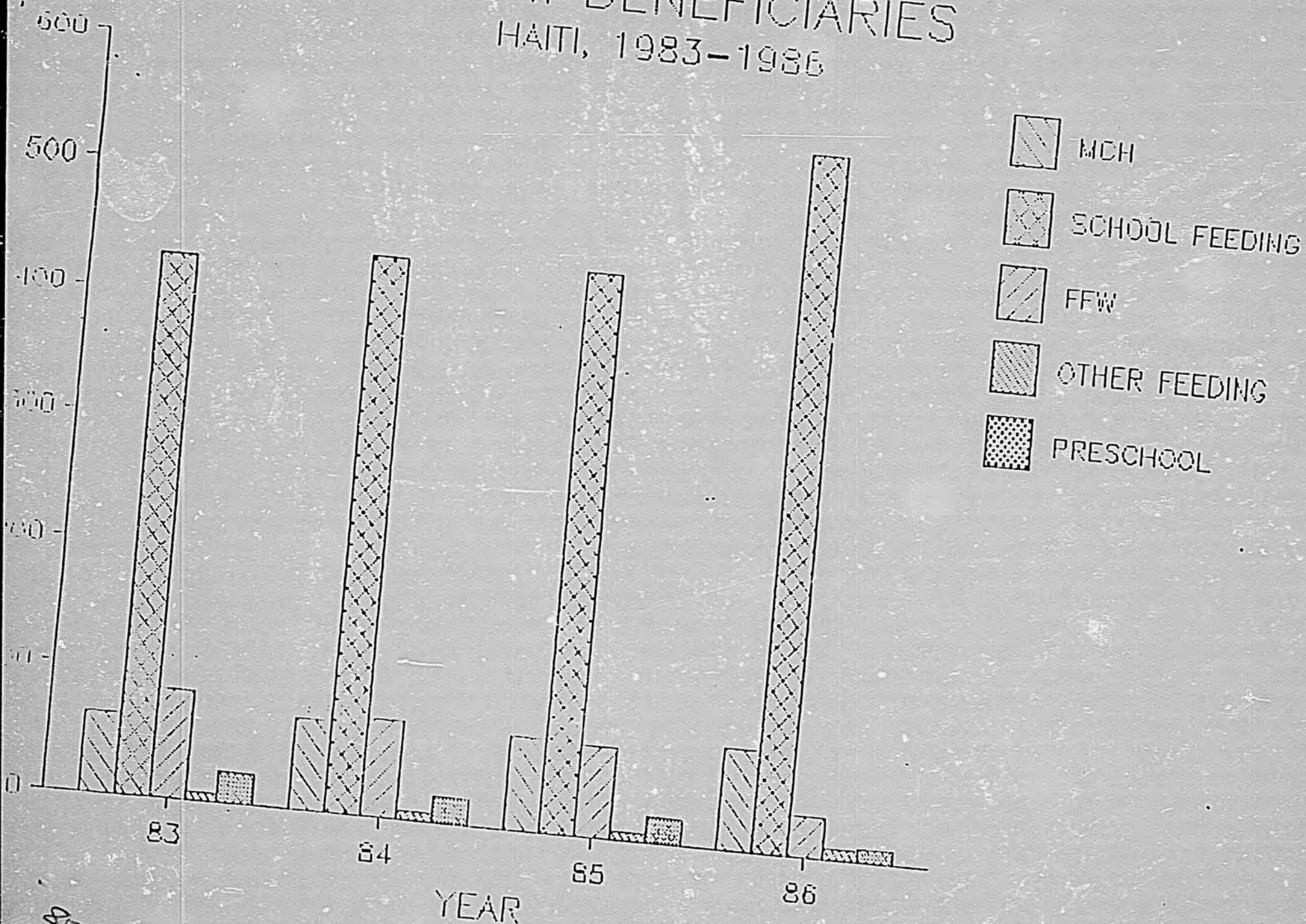
Source: Levitt & Laurent, World Bank

*Source: FAO

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TITLE II BENEFICIARIES HAITI, 1983-1986

FIGURE 3.1



ANNEX I

Instrument for Data Collection at the Level of Field Manager

A. General information

Site Name _____

Organization Name _____

Interviewee:

Name

Position

Length of time with
program

B. Target Population

1. Total population covered by program _____
2. Total 0-5/0-3 years _____
3. Total women 15-49 years _____
4. Was a census done
 1. yes 2. no

C. Types of services provided to population

1. nutritional preventive curative
- _a. supplementation 0-5
 - _b. supplementation women
 - _c. GM/P
 - _d. VITA
 - _e. Iron
 - _f. Folic acid
 - _g. education
2. Child health
- _1. immunization
 - _2. ORT
 - _3. malaria treatment
 - _4. simple curative
 - _5. other(list)
3. Maternal health
- _1. prenatal care(list services)
 - _2. family planning services
 - _3. other, specify
4. Community development
- _1. income generating activites(describe which, who participates and mechanisms of organization)
 - _2. home gardens
 - _3. water/sanitation
 - _4. other(describe as above)
5. Agricultural projects(describe)

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- D. Through which channels are services delivered?
 _1. fixed facilities(#)____
 _2. rally posts(#)____
 _3. household visits
- E. How are outreach services organized in terms of division into sectors and population served
- F. What is the staffing and function at each level of the system

| Level | Personnel types | services provided |
|-------|-----------------|-------------------|
|-------|-----------------|-------------------|

| | | |
|------------------|--|--|
| Fixed facilities | | |
|------------------|--|--|

| | | |
|-------------|--|--|
| Rally posts | | |
|-------------|--|--|

| | | |
|-----------|--|--|
| Community | | |
|-----------|--|--|

- G. Are all personnel salaried?
- H. If not
 1. which are not
- I. What types of initial training was given to personnel at each level in the system(personnel who are involved in nutritional components):

| Personnel | length training | topics covered | performance evaluated |
|-----------|-----------------|----------------|-----------------------|
|-----------|-----------------|----------------|-----------------------|

| | | | |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

| | | | |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

- J. What are the types and frequency of refresher course given at each level

| Personnel | length of training | topics covered | performance evaluated |
|-----------|--------------------|----------------|-----------------------|
|-----------|--------------------|----------------|-----------------------|

| | | | |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

| | | | |
|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|

- K. Is training adequate as it is currently done?
- L. If not, why not
- M. Are any modifications needed in the current training/refresher plan?
- N. If so, which?
- O. Are manuals given for training

Supervision

External:

1. How often is this program reviewed by central office staff?
2. When was the last visit?
3. Are supervisory visits standardized? (Do supervisors have check lists)
4. Do supervisors discuss performance with field staff?
5. What feedback is normally provided?
6. How is supervision provided to each level of personnel internally?

| Personnel | Who supervises | how | how often | feedback |
|-----------|----------------|-------|-----------|----------|
| ----- | ----- | ----- | ----- | ----- |
| ----- | ----- | ----- | ----- | ----- |

Logistics and Supplies

1. What materials are used in nutritional programs

| Item | Where obtained | frequency replenishments | problems ruptures | - |
|--------------------------------|----------------|-----------------------------|----------------------|---|
| - food | | | | |
| - growth charts | | | | |
| - manuals | | | | |
| - posters | | | | |
| - other teaching aids: list | | | | |
| - forms and registers | | | | |
| - Vita | | | | |
| - Iron | | | | |
| - Folate | | | | |

2. Are there currently stocks of all materials ?
3. IF not, which are lacking and why?
4. Are there commonly ruptures de stock?

5. If yes, which items and why
6. What can be done to improve the supply system?

MIS

1. Which information is reported by the program field sites and at what frequency?

Vita Iron Rehabilitation Supplementation GM/P

Nutrition education Diarrheal disease control

2. What percentage of programs/sites report regularly
3. What feedback is provided on reports
4. Are reports used to:
 - _ readjust program objectives
 - _ correct operational problems
5. Are reports automated?

For GM/P

1. Where is weighing performed and by whom
2. How often are children to be weighed
3. What linkages are made between weighing and actions?
 - _ supplementary feeding
 - _ referral(when)
 - _ individual counselling
4. Is there a protocol for providing counselling to mothers?
5. Is individual counselling effective or not? Why or why not?
6. What are the major difficulties experienced in implementing GM/P?
7. Does the manager believe that GM/P is effective in improving community nutrition? why or why not

8. Under what circumstances is GM/P effective?
9. How many children participate in GM/P
10. What percentage of the target population participates?
11. What percentage of the participants are weighed regularly?
 - _ 0-25
 - _ 25-50
 - _ 50-75
 - _ 75-100
12. Why is this so low or so high?
13. What modifications could be taken to improve participation?

Group Educational Sessions

1. What type of group sessions are held:
 - _1. lecture type
 - _2. discussions
 - _3. demonstrations
 - _4. practice sessions
 - _5. other: specify
2. What topics are covered in the group sessions?
 - _1. breastfeeding
 - _2. weaning practices
 - _3. feeding ill children
 - _4. growth monitoring
 - _5. vitamin A
 - _6. iron
 - _7. ORT
 - _8. Other: list:
3. During a typical session, how many topics are covered?
4. What criteria is used to determine which topics are covered?
5. How often are women supposed to attend these sessions?
6. Do personnel have written protocols for conducting sessions?
7. What types of aids are used by personnel?
 - _1. posters
 - _2. cards and pictographs
 - _3. other, specify
8. What specific training have personnel received in the area of group education?

9. What topics and techniques were covered?
10. On the average, how many mothers participate during each session?
11. What percentage of mothers come regularly to the sessions
 - _1. 0-25%
 - _2. 25-50%
 - _3. 50-75%
 - _4. 75-100%
12. Why is participation this high/low?
13. Do you believe the educational sessions are effective in changing maternal practices?
14. (If no)Why not?
15. What aspects of the educational component need to be improved?

Supplementation:

1. Which groups receive supplementation?
2. What criteria is used to determine who receives supplements?
3. How is this information obtained?
 - _1. community screening(outreach/census)
 - _2. rally posts
 - _3. fixed facility
4. How long are participants supposed to participate in the program?
5. What criteria are used to terminate participation?
6. Which rations are given, what quantity and what frequency?

| target group | rations | quantity | frequency |
|--------------|---------|----------|-----------|
| ----- | | | |
| ----- | | | |
| ----- | | | |

7. How many participants are currently enrolled in the programs
8. What percentage of participants regularly attend the program
 - _1. 0-25
 - _2. 25-50
 - _3. 50-75
 - _4. 75-100

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9. What percentage of participants complete the program successfully?
 - _1. 0-25
 - _2. 25-50
 - _3. 50-75
 - _4. 75-100
10. What are the major operational difficulties with the food supplementation component?
11. Do you believe that nutritional state of the child is improved by the program or not?
12. If not, why not

Vitamin A

1. Who receives vitamin A
2. What dose is given and with what frequency?
3. What percentage of those targetted receive the prescribed regime?

| | | | | |
|----------|----------|-----------|-----------|------------|
| Children | _1. 0-25 | _2. 25-50 | _3. 50-75 | _4. 75-100 |
| Women | _1. 0-25 | _2. 25-50 | _4. 50-75 | _5. 75-100 |
4. How many women received capsules last month?
5. How many children received capsules last month?
6. What are the major operational difficulties experienced with the Vitamin A component?

Iron

1. Who receives iron supplement?
2. Which supplement is given, in which quantity, and with what frequency?
3. What percentage of those targetted receive the proscribed regime?

| | | | |
|----------|-----------|-----------|------------|
| _1. 0-25 | _2. 25-50 | _3. 50-75 | _4. 75-100 |
|----------|-----------|-----------|------------|
4. How many women received iron tablets last month?

Folic Acid

1. Who receives folic acid?
2. In what dose and frequency?

General Questions

1. What nutritional activities are not operating as they were originally intended?
2. Why not?
3. What improvements should be made in the areas of:
 - a. training
 - b. logistics/supplies
 - c. supervision
 - d. information management
4. Which changes do you believe should be made in the actual types nutrition activities provided by the program?
5. What compliment of nutritional activities do you believe are the most successful in improving community nutritional practices and status

ANNEX II

ETUDES DE CAS (QUESTIONNAIRE)

Nom evaluateur _____
Date de la visite _____

Nom du projet _____
Localite _____
Commune _____
Region _____

Organisme _____

Nom du chef de projet _____
Nom de la personne rencontree (si differente) et dans ce cas
responsabilites dans le projet _____
Profession _____

Date de debut du projet _____
Diagnostic de la situation nutritionnelle au debut du projet:

Objectifs du projet:
(etaient-ils quantifies? pour quelle duree?)

Activites du projet.

(preciser le nombre et si il s'agit de structure fixe ou mobile)

hopital _____
centre avec lit _____
centre sans lit _____
dispensaire _____
clinique mobile _____
postes de rassemblement _____

protection maternelle et infantile _____
vaccinations _____
centre de recuperation nutritionnelle _____

activites non medicales (faire la liste):

Nom du site visite (et assurant des activites nutritionnelles)

Structure fixe et/ou mobile _____

Distance des activites par rapport au site principal du projet

Population totale desservie _____

Estimation ou recensement _____

Enfants moins de 5 ans inscrits _____

Femmes 15-49 ans inscrites _____

Nombre de personnel engage dans les activites nutritionnelles _____

Formation aux activites nutritionnelles:

dermier
recyclage

Date _____

Duree

Sujets traites
(liste)

Nombre de recyclage _____
Utilisation d'un guideline _____ lequel? _____

Retribution: salaire _____ \$
 "food for work" _____
 benevole _____

Activités réalisées sur le site (préciser la fréquence):

1) Activites nutritionnelles

* supplement aux moins de 5 ans : preventif
* supplement femme curatif

- * supplement femmes enceintes et/ou allaitantes
- * surveillance de la croissance

- * surveillance de la croissance (pesée)
- * éducation nutritionnelle

- * éducation nutritionnelle

- * distribution de vitamine A
- * distribution

* distribution de fer et acide folique

2) Soins aux enfants

* vaccination

* promotion du SRO

- * traitement du paludisme

- * soins médicaux de base

* autres (liste)

- * surveillance de la grossesse
- * planning familial
- * vaccination anti-tetanique
- * autres (liste)

```
* activites style "income generating" -----
* projet eau potable/latrines -----
* jardins potager
* autres (preciser) -----
```

Etat des locaux

Supervision par qui? _____
 fréquence _____
 date de la dernière visite _____
 sujets traités _____

liste des donnees recueillies

donnees fournies
 frequence
 feed-back?

Total d'enfants pesés par mois _____
 Nombre de session par mois _____

Nombre prévu de pesée par enfant et par an

Nombre pese mois de juillet _____

< 12 mois _____

12 - 23 mois _____

24 - 59 mois _____

60 mois et plus _____

P/A normal _____

Gomez 1 _____

Gomez 2 _____

Gomez 3 _____

ayant gagnes du poids _____

poids stationnaire _____

ayant perdus du poids _____

Proportion d'enfants venus regulierement _____

Proportion d'enfants venant de plus de 30 mn a pied _____

Utilisation des cartes Chemin de la Sante _____
Autre format: avec graphique _____
sans graphique _____

Proportion de meres ayant perdu les cartes _____

Approvisionnement des cartes _____
ou? _____
rupture de stock? _____

Temps moyen consacre a un enfant (pesee + conseils) _____

Exemples de conseils donnees aux meres:
problemes de l'enfant conseils appreciation

Conduite en face de malnutris graves :
traitement sur place _____
reference a un hopital _____
reference a un centre de recuperation nutritionnelle _____
traitement a domicile _____

Type de balance utilise _____
etat de marche _____

Appreciations de l'evalateur:

pesee _____
conseils _____
utilisation de la carte _____
determination de l'age _____
organisation generale _____
autres _____

EDUCATION NUTRITIONNELLE

Total de femmes participantes par mois _____
Nombre de session par mois _____
Critere de selection _____
Nombre prevu de sceances par femmes et par an _____
Nombre de femmes mois de juillet _____
Proportion de femmes venues regulierement _____
Proportion de femmes venant de plus de 30 mn a pied _____
Sujets traites: allaitement _____
 sevrage _____
 diarrhee _____
 aliments _____
 hygiene _____
 chemin de sante _____
 planning familial _____
 akamil/aliment de sevrage _____
 vaccination _____
 autres _____

Organisation de la sceance:

duree _____
sujet(s) _____
methodologie: demonstration _____
cours magistral _____
discussion _____
materiel utilise: posters _____
 flannelogramme _____
 autres _____

Appreciations de l'évaluateur:

aptitude pédagogique _____

organisation _____

participation des mères _____

comprehension des mères _____

DISTRIBUTION D'ALIMENTS

Type de distribution:

preventif tous les moins de cinq ans _____

curatif malnouris moins de cinq ans _____

preventif femmes enceintes / allaitantes _____

Pour chaque type de distribution:

total participants par mois _____

critere d'admission _____

refuse-t-on des participants ? _____
pourquoi ? _____

critere de decharge _____
ou duree determinee _____
dans le programme _____

ration a emporter _____
frequence _____

ou a consommer sur place _____

type de ration (aliments et quantite):

approvisionnement:

frequence? _____

regularites dans le type d'aliments? _____

ruptures de stock? _____

lieu et problemes de stockage _____

CONTROLE DES CONNAISSANCES DU PERSONNEL ASSURANT CONSEIL ET EDUCATION

Pourquoi pese-t-on un enfant?

Alimentation pendant et traitement de la diarrhee?

Quelle combinaison d'aliments pour un repas equilibre?

Pourquoi vaccine-t-on un enfant?

Comment prepare-t-on L'Akamil?

INTERVIEW DES MERES

(3 meres par site)

Pourquoi pese-t-on un enfant?

Alimentation pendant et traitement de la diarrhee?

Quelle combinaison d'aliments pour un repas equilibre?

Pourquoi vaccine-t-on un enfant?

Comment prepare-t-on L'Akamil?

ANNEX III

SCHEDULE OF INTERVIEWS AND VISITS

| DATE | INSTITUTION | INTERVIEWEE | LOCATION |
|------|---|--|----------------------------------|
| 8/14 | ADRA | S. BROWN A. HENRY | PORT-AU-PRINCE |
| 8/15 | UNICEF PAM | E. GENECE J. ROY | PAP PAP |
| 8/16 | IHE | M. CAYEMETTE | PAP |
| 8/17 | CARE CECI SOE | S. O'ROURQUE V. LAPOINTE J.H. HENRYS | PAP PAP PAP |
| 8/18 | BND AOPS CRS | J. MAGLOIRE S. PINTRO E. METTELUS | PAP PAP PAP |
| 8/19 | SCF | C. WIDMAER | PAP |
| 8/22 | MSPP MSPP MSPP + EGLISE EPISCOPALE | WIDMAER POULARD CREVECOEUR | LA SALINE GD GOAVE LEOGANE |
| 8/25 | CMS COMITE BIENFAISANCE /AOPS | R. BOULOS G. THEODORE | PAP PIGNON |
| 8/29 | AMOSSE/AOPS FOSTER PARENT PLAN/ AOPS | J.R. LUBIN M.J. CASTERA | JACMEL JACMEL |
| 8/30 | MISSIONNAIRES CHARITE /CRS CENTRE MATERNO-INFANT. | LIESBETH ALBERICH | ST MARTIN PT GOAVE |
| 8/31 | BON SAMARITAIN/CRS | R.DUPERVAL | CARREFOUR |
| 9/01 | MISSIONNAIRES CHARITE /ADRA CARE CINECO | L. DASTY R. JEAN-JOSEPH | COTE FER OUAMAMINTE |

ANNEX IV

BUREAU DE NUTRITION ET DEVELOPEMENT (BND)

General information: BND is a new PVO, created two and a half years ago; it does not yet have a PVO status and works under the COHAN (Holland) umbrella. This PVO was created to take over the food distribution programs of COHAN, which wanted to stop these kinds of activities.

Population: BND provides food to 157,000 beneficiaries in 170 different institutions. The distribution sites are diverse: hospitals, TB clinics, retirement homes, nutrition centers, and schools. The beneficiary institutions are essentially religious groups and small haitian PVOs.

Personnel and training: one director, one nutritionist, one accountant, and ten workers for the food stock.

Supervision: BND is just starting to organize the distribution and is introducing standard requisition forms. It has carried out some field visits in the last few months and hired one inspector to do supervision. EEC and CARITAS have carried out some evaluation visits.

Activities: The distributed food is provided by the EEC and ordered through CARITAS Holland. The donations are very irregular; for example, oats ordered in 1987 have just been received (a one year delay). Three kinds of food are now received: milk, oats, and peas. Earlier, wheat flour was also imported, but Haitian law now forbids this, to protect Haitian mill factories. Each institution receiving the food must make its own arrangements to transport the food from Port-au-Prince to its location. The food quantities distributed have decreased, from 3524 tons in 1985 to 2040 tons in 1987.

Areas for improvement:

- selection of beneficiaries;
- supervision.

CENTRE D'ETUDES ET DE COOPERATION INTERNATIONALE (CECI)

General information: A Canadian PVO which has three community development projects in Haiti (St Michel, Carice et Mont Organise, Chardonniere). In the first two projects, there are 3 areas of interest:

- health and nutrition
- agriculture
- rural "animation" (community motivation).

Description of St Michel l'Attalaye project: It is a program 100 percent managed by CECI. In St Michel, other health/nutrition activities exist in the area through the three public dispensaries (2 are physician-run and curative-oriented) and through irregular church food distribution.

Population: 125,000 persons in the "commune".

Personnel and training: The personnel consist of one field manager, agricultural animators (paid), health/nutrition animators (not health agents, paid) and the growth monitoring collaborators (volunteers). They use their own training materials. The duration of training is based on the learning pace of each group.

Supervision: It is done daily by the field manager. Quarterly reports are sent to the Port au Prince office. An evaluation/census has recently been done, but has not been compiled and analysed yet.

Activities: nutritional education and nutritional rehabilitation in some particular circumstances. During the last few months, CECI has organized growth monitoring activities with collaborators chosen from the community. They use the "road to health chart." Other maternal and child health services are provided: immunization, ORT and family planning.

Related activities: The health and nutrition activities are part of a large, community-based program. Other components of the program include sanitation (hygiene, water, and latrines) and agriculture, which focuses on food crops regeneration to increase women's self-reliance.

Participation: the mothers come regularly, but lose the cards.

Areas of interest:

- a broad-based approach, with agricultural and community participation components.

Areas for improvement:

- staff training.

WORLD FOOD PROGRAM (WFP)

General information: The WFP supports various types of projects: food distribution; hospital feedings; MCH and family planning activities; and three agricultural development projects (OPIVC in Berradere, ODNA in Pont l'Estere and ODPG in Pont Sonde) involving food for work remunerations. Once the food has arrived in Haiti, the WFP governmental counterparts are responsible for storage, transport and distribution; WFP carries out only the supervision.

Description of MCH and family planning support: The WFP food distribution is carried out in 22 medical centers in the public sector (a few are mixed). The project duration was originally March 1985-March 1988. In fact, WFP has distributed only 10 percent of the food allocated to the program, primarily because of the socio-political troubles of the last two years and because of the difficulty in maintaining the food at the dispensary level. Centers are now in the process of reopening and the project will be extended for one year at least, and probably two.

Population: The target population consists of 10,520 pregnant and lactating women, 15,780 children under five years of the pregnant and lactating women, and 8,180 children under five of women registered in the family planning program (all children being second and third degree malnourished).

Activities: The nutrition activities are carried out at the dispensary level and involve the distribution twice a month of take-home dry feeding rations. The MOH guidelines are followed.

Supervision: WFP supervises only the food distribution every 3 months; supervision of the medical/nutritional activities is done by the staff of the MOH.

Areas of interest: In June, WFP tested a new fortified milk "Cirius" produced in Haiti. It is composed of milk (25 percent), sugar (15 percent), rice (30 percent) and maize (30 percent). The ration for a child under one year of age provides 807 Kcal with 30 g protein. One big advantage of the product is that it does not require preparation (it is already prepared in individual bags).

COMITE DE BIENFAISANCE DE PIGNON

The committee is a PVO and an AOPS member. It carries out an integrated community and health development program in Pignon. The Child Survival activities are in conjunction with the public sector and the food supplementation program with ADRA.

Personnel and training: one physician, four health agents who are employees of the MOH and receive an allowance from the PVO; eleven volunteer collaborators and one nutritionist paid by Food for Work. Staff training is organised by INSHAC and there is also on-going training in the field by ADRA.

Activities: They are primarily MCH, with particular emphasis on women four or more months pregnant and children up to one year old. Nutrition activities are organized through rally posts and include growth monitoring for children under five years, individual counselling, and group session education.

Related activities : The other activities are diverse : well drilling (50 for 250 families), household gardens, literacy classes, etc.

Supervision : supervision is carried out by both AOPS and ADRA.

Areas of interest :

- a Child Survival program integrated in a community development project;
- collaboration between PVOs and public sector.

SAVE THE CHILDREN FUND (US)

General information: SCF is an AOPS member. The program is integrated into a community development program. SCF operates in a public dispensary and the program is trying to reinforce and rationalise the public health services in the area.

Population : 25,000 people in Maissade, divided into two zones and six sectors with 120 to 200 mothers per sector. Program participants are selected from 1986 census and include women 15 to 45 years of age and malnourished (first, second, and third degree on the Gomez scale) children under five years of age.

Personnel and training : one physician, nutritionists, auxiliaries, and one record keeper are SCF employees, while local health agents are paid by DSPP. The local collaborators are volunteer community members, with one per sector. The physician is responsible for management and on-going training of staff, with assistance from the health auxiliaries. The staff follow both AOPS and MOH guidelines.

Supervision: Supervision is done daily by the physician field manager; plus, there are monthly control visits by AOPS.

Activities: Maternal and child health activities include growth monitoring with individual counselling, group nutritional education, AK-1000 promotion, vitamin A distribution, immunization, ORT, underfive clinics, prenatal care and, family planning. The community participation consists of a health committee formed by health agents and volunteers, mothers' clubs, and the mutual support of neighbors. The health committees have bi-monthly meetings, and each sector hold a general assembly once a quarter.

Related activities : agricultural activities have been started with the same population.

Participation: 80 to 90 percent of beneficiaries participate regularly.

Areas of interest:

- reinforces public services;
- structure at different level of community participation;
- regular on-going training.

SERVICE OECUMENIQUE D'ENTRAIDE (SOE)

General information: Haitian PVO, set up in 1977. It has both local support (CARITAS, the Methodist church,...), and European support (from Protestant churches, PVOs, and research institutes such as ORSTOM). It has three areas of activity: health, rural development and Haitian returnees. In general, it runs community development programs and has around 10 different sites.

Description of the Thomonde project: The project is centered around the public dispensary. This provides complete curative services (including emergency beds) and more preventive activities are also provided on an outreach basis.

Population: 30,000 persons in the 1985 census.

Personnel and training: The personnel are employed through both the public sector and SOE:

- 1 physician who heads the project (SOE)
- 1 physician paid by the ministry (+SOE indemnity)
- 3 auxiliaries paid by the ministry (+SOE indemnity)
- 1 TB assistant
- 1 sweeper
- outreach staff with 7 health agents covering 12 rally posts and 77 birth attendants.

The agents' training lasts 3 months (MOH) and 3 to 4-day refresher courses are organized every 6 months. There is a close follow-up of activities and monthly meetings.

Supervision: This is done by one of the physicians. Monthly reports are required.

Activities:

1) Growth monitoring has been carried out since 1984, ("road to health charts" are used) at rally posts. At each of them, between 40 and 50 children under five years of age are registered, with priority given to those under three years. The health agents make home-visits to look for drop-out children and to follow-up the malnourished children. For all nutritional activities, they follow ministry of health (MOH) directives. If a child loses weight despite the program, than agent makes home-visits to provide further education and preparations of AK-1000 and fortified milk. If necessary, the child is referred to the dispensary, where mother and child are kept for education and treatment for a two to three week period.

2) Group nutritional education consisting of lectures and demonstrations in which the mothers participate. Emphasis is put on fortified milk and AK-1000 preparation.

- 3) Other activities carried out in rally posts include:
- prenatal care,
 - immunization (once a month),
 - ORT (MOH protocols)
 - vitamin A distribution (for children 6 months to 6 years of age)
 - iron-folate distribution to pregnant women.
 - basic drugs distribution
 - AK-1000 mill distribution.

Related activities: Other programs centered around community development are carried out, including agriculture, income generation, and nutritional education of schoolchildren through the teachers.

Participation: 65 to 70 percent of registered children come regularly every month.

Areas of interest:

- strong education component,
- motivated staff,
- referral system,
- training and supervision,
- strengthening of public health services.

Areas of improvement :

- Development activities have a limited coverage and have no impact on nutritional status.
- SOE has to provide most of the logistics and supplies since the MOH does not do so.

UNICEF

UNICEF supports two main programs : immunization (EPI strategy) and the diarrheal control program (PRONACODIAM).

So far, it has spent about \$31,000 on nutrition activities, which include:

- The distribution of vitamin A (all children from 6 months to 6 years, every 4 months; all women after delivery). 1,500,000 caps are distributed per year.

- The distribution of fer-folate for pregnant women in the third trimester. 2,000,000 caps per year are provided. These drugs supply both the public and private health sectors.

The main concerns of UNICEF personnel regarding the on-going nutritional activities are the institutional weakness of the public sector , the relative ignorance of what is going on, the lack of coordination between agencies, and the lack of standardized materials for education.

Nutrition has to be given the same types of inputs (resources, staff training, communication strategy, monitoring and evaluation system) that are now given to the two well established priorities (EPI and ORT campaign). There is also a need to determine which type of intervention works.

Other UNICEF projects in the nutrition field are the breastfeeding component of the PRONACODIAM program and the strengthening of the nutrition component in the Child Survival strategy. Particular emphasis is placed on weaning foods and breastfeeding promotion (through health professionals and through laws).