DRAFT

Process Used to Design an Integrated Health and Nutrition Program to Prevent Child Malnutrition in Rural Haiti

IFPRI-Cornell University - World Vision-Haiti Team

Written by:

Cornelia Loechl, Ph.D., IFPRI-Haiti
Purnima Menon, Ph.D., Cornell University
Marie T. Ruel, Ph.D., IFPRI
Gretel Pelto, Ph.D., Cornell University

Submitted to:
The Food and Nutrition Technical Assistance (FANTA) Project

July 15, 2003

This publication was made possible through the support provided to the Food and Nutrition Technical Assistance (FANTA) Project by the Office of Health and Nutrition of the Bureau for Global Health at the U.S. Agency for International Development, under terms of Cooperative Agreement No. HRN-A-00-98-00046-00 awarded to the Academy for Educational Development (AED). The opinions expressed herein are those of the authors and do not necessarily reflect the views of the U.S. Agency for International Development.

Financial support for this research is also provided by the Government of Germany, World Vision-Haiti, and the World Food Programme.

RECOMMENDED CITATION:

Loechl, C., Menon, P., Ruel, M.T., Pelto, G.. (2003). *Process used for the design of an integrated health and nutrition program to prevent child malnutrition in rural Haiti.* A report submitted to the Food and Nutrition Technical Assistance Project, Academy for Educational Development, Washington, D.C.

ACKNOWLEDGMENTS

The authors acknowledge the important contribution of Elisabeth Metellus (Independent Consultant, Haiti) during the formative research phase and Arsène Ferrus (IFPRI, Haiti) during the program development phase. At World Vision-Haiti, Bekele Hankebo, Jean-Marie Boisrond, and Lesly Michaud were extremely supportive during the whole design process. We also appreciate the discussions and inputs provided by the health agents, *colvols* and supervisors during the development of the implementation plan for the preventive program.

The authors also thank Freedom from Hunger for their permission to adapt their communication and training materials on infant and young child feeding to the needs of the World Vision Maternal and Child Health program. We are grateful to Edouine Francois for the assistance provided during the adaptation of these materials and for the excellent training workshops conducted for the World Vision staff. We would also like to express our gratitude to DidacArts (Port-au-Prince, Haiti) for working with us on the pretesting and repeated adaptations of the visual materials to the Haitian context.

ACRONYMS USED

ADP	Area Development Program
BCC	Behavior Change Communication
BF	Breastfeeding
CAFEM	*Centre d'Appui et de Formation En Management*
CF	Complementary Feeding
EBF	Exclusive Breastfeeding
FANTA	Food and Nutrition Technical Assistance
FFH	Freedom from Hunger
HAZ	Height-for-Age Z-Score
HIV	Human Immunodeficiency Virus
IFPRI	International Food Policy Research Institute
PVO	Private Voluntary Organization
MCH	Maternal and Child Health
MSPP	Ministère de la Santé Publique et de Planification (Ministry of Health)
SD	Standard Deviation
SFB	Soy-Fortified Bulgur
USAID	United States Agency for International Development
WAZ	Weight-for-Age Z-Score
WHZ	Weight-for-Height Z-Score
WSB	Wheat-Soy Blend
WV	World Vision

TABLE OF CONTENTS

LIST OF TABLES

LIST OF BOXES

LIST OF FIGURES

EXECUTIVE SUMMARY

This report describes the process undertaken by the IFPRI-Cornell research and planning team in Haiti to assist World Vision in the design of a program aimed at the prevention of childhood malnutrition in the Central Plateau. It also describes the implementation plan for this preventive program and offers some reflections on the process.

The preventive program combines a food aid component targeted to pregnant and lactating women and all children 6-23 months of age, a Behavior Change Communication (BCC) component and a preventive health care component. The latter includes immunization, prenatal care, growth monitoring, nutrition education and counseling, micronutrient supplementation, and deworming.

The program development process described in this report is part of a larger collaborative project between IFPRI, Cornell University and World Vision Haiti (and funded by FANTA through its cooperative agreement with USAID). The overall goal of this project is to compare the impact and cost-effectiveness of the preventive approach described in this report with the traditional recuperative approach, which targets children once they have become malnourished.

Design of the Preventive Food Aid Component

The design of the food aid component of the program was based on current knowledge regarding optimal age of enrollment and duration of supplementation, and the programmatic resources available to World Vision-Haiti. Based on these considerations, the following decisions were made:

1) Children will be enrolled in the program between 6-18 months of age. This age range was selected because research suggests that this is the age of maximum response to supplementation.

2) Beneficiaries will continue to receive food supplements up to the age of 23 months, thus ensuring that even those who enter the program as late as at 18 months of age will receive 6 months of supplementation.

3) Each household will receive one indirect ration of food supplements, even if there is more than one direct beneficiary in the household.

Design of the BCC component

The BCC component of the preventive program was designed in two phases, a research phase and a development phase.

The research phase consisted of three steps:

1) *Review of existing communication materials:* A review of BCC program materials and manuals used in Haiti was conducted to identify potential materials for use in the World Vision-Haiti BCC program.

2) *A preliminary qualitative study:* A short qualitative study was conducted to gather basic information on infant feeding and care practices in the project area. This information was used both to design the baseline survey instruments for the program evaluation and to design a larger formative research study that was used to develop the final BCC program.

3) *A more in-depth formative research study:* This study gathered data on infant and young child feeding and care and also included a recipe trials component that was used to test the acceptability and feasibility of enhancing the nutritional characteristics of traditional recipes using local and donated foods. In addition, it included some observations of current World Vision program activities, which were used to identify suitable program venues for the BCC program.

The data from (2) and (3) above were used to assess the adequacy of current infant and young child feeding practices and to identify and develop programmatic actions to improve non-optimal practices. This was achieved through the program development phase, which consisted of the following steps:

1) *Identification of priority programmatic actions for the BCC program*: Following the formative research study, the results were presented to key stakeholders in World Vision-Haiti and various programmatic options for the BCC program and supporting activities were assessed.

2) *Development of the BCC strategy*: Once the behaviors to be promoted through the BCC component had been selected, a BCC strategy was developed, taking into account the existing program structure and the available delivery points for different activities.

3) *Development of BCC materials and training plans*: BCC materials and training plans were developed in collaboration with World Vision and with an adult education training firm.

4) *Training of World Vision staff*: World Vision staff was trained in the technical aspects of infant and young child feeding and care as well as in the use of the newly developed communication materials using adult education techniques.

5) *Development of implementation plan and schedule*: A round of discussions was held with World Vision program staff to finalize the implementation schedules for the BCC activities at different program delivery points.

Program implementation

The World Vision program reaches its beneficiaries through five major points of contact: (1) *Rally Posts*, where beneficiaries are identified and health education, growth monitoring and preventive health care are provided; (2) *Mothers' Clubs*, where beneficiary mothers and children come together in a small group setting to discuss issues related to infant and young child feeding, hygiene, family planning or HIV/AIDS; (3) *Pre- and postnatal consultations*, where pregnant and lactating women receive preventive health care and education; (4) *Food distribution points*,

where beneficiaries receive their food rations for the month; and (5) *Home visits*, where beneficiary households with a newborn infant, a severely malnourished child, or a child with growth faltering are visited by the World Vision health personnel.

The Mothers' Clubs will be the main delivery point for the newly developed BCC strategy. A few modifications have also been made to strengthen the quality of the education provided at the Rally Posts. All other service delivery points will be used as secondary sites to strengthen the BCC and reinforce the key messages. Strong emphasis was put on reorganizing the Mothers' Clubs to ensure a timely delivery of relevant messages to mothers, based on their physiological status (pregnant or lactating) and/or the age of their infant. Mothers who enter the Clubs during pregnancy will have the opportunity to attend up to 27 monthly sessions (5 during pregnancy, 3 during early lactation and 19 with their 6-23-month-old child).

Next steps

The next *research* step will be a first round of operations research to assess the quality of implementation and of service delivery, and to identify operational constraints, which may require immediate attention. This first "trouble-shooting" round will be carried out in July and August of 2003. It will be followed by a second round in 2004, which will focus on identifying operational factors that may be responsible for some of the differences (or lack thereof) in the impact and cost-effectiveness of the two approaches being compared in the overall evaluation – i.e. the preventive and the recuperative models.

Future *program development* steps will involve the planning of supporting activities that could support the BCC program and better enable program participants to adopt recommended behavior changes. In general these will involve making fairly small adjustments and additions to the existing program structure such as setting up fathers' Clubs, or grandmothers' Clubs or organizing activities to engage midwives in the BCC strategy. Other options that may require more technical assistance and collaboration with other organizations, and possibly more funding will also be considered. These include provision of microcredit programs to increase resource availability within households and communities, promotion of food-based interventions to increase availability and access to micronutrient rich animal foods and fresh fruits and vegetables, or other activities such as childcare support to working mothers and more intensive use of mass media communication methods to strengthen the BCC strategy.

Reflections on the program development process and conclusions

Our experience suggests that a program planning process that involves all the research and planning steps described here, as well as the *de novo* development of a full set of communication and training materials, would take considerably longer if it was conducted primarily by program staff involved in the daily management and administration of such a complex program. We feel, however, that these preparatory activities are essential for the design of effective interventions. The research process in particular, is essential to ensure that the BCC strategy targets practices that are amenable to change and that other program components are put in place to help relieve some of the identified constraints to behavior change.

Another point to be noted about the program planning process described here is that it was undertaken *after* World Vision's five-year program cycle had been established and as such, was limited by the lack of flexibility to include interventions that were outside of the current programmatic mandate. However, the process itself is generalizable and could be used at the proposal stage to plan future program funding cycles. This will help ensure that constraints to behavior change are addressed through appropriate programmatic interventions, even if these may be outside of the usual scope of activity of the implementing agency.

In conclusion, we highly recommend the use of a systematic research and development process such as the one described here for program planning. To facilitate this process, however, we suggest that program planners carefully assess the human, technical, and time resources required to implement these activities and factor them in their funding request. The rewards in terms of impact and cost-effectiveness of such carefully designed programs, which effectively address the specific needs of its targeted population, should largely compensate for this initial investment.

1. INTRODUCTION

1.1 Background

This report describes the process undertaken by the IFPRI-Cornell University team in Haiti to assist World Vision in the design of a program aimed at the prevention of childhood malnutrition in the Central Plateau. The preventive program combines a food aid component targeted to pregnant and lactating women and all children 6-23 months of age, a Behavior Change Communication (BCC) component and a preventive health care component. The latter includes immunization, prenatal care, growth monitoring, nutrition education and counseling, micronutrient supplementation, and deworming.

As part of its technical assistance, the IFPRI-Cornell team assisted World Vision in designing and implementing a fully developed preventive model that will be compared with the recuperative model that World Vision-Haiti is also implementing. The shift to a preventive program required adjustments in educational activities that emphasize prevention of growth faltering, as well as in the organization of the food aid component of the program to ensure that the right messages reach their targeted audience at the right time.

The technical assistance and program development process is part of a larger evaluation being conducted by IFPRI and Cornell University in collaboration with World Vision-Haiti to compare two models for delivering integrated food and nutrition programs with a take-home food ration component. The two models to be implemented by World Vision-Haiti, are: 1) the traditional *recuperative* approach, whereby children under 5 years of age are targeted to receive food supplements, nutrition counseling and follow-up when they are identified as being underweight for their age; and 2) the *preventive* approach, which targets food supplements and other preventive interventions to all children below 2 years of age, irrespective of their nutritional status.

1.2 Structure of the report

This report is structured as follows. The scientific rationale for an integrated preventive child health and nutrition program is described in Section 2, outlining both the technical basis for the food aid component and the behaviors promoted through the BCC component. Section 3 presents the program development process, focusing on the development and design of the BCC component of the program. The implementation plan for the preventive program with details of the services provided at all program delivery points is described in Section 4, which is followed by a short description of the next steps in research and program implementation (Section 5). The document concludes with some reflections and conclusions regarding the process used to develop this integrated preventive child health and nutrition program (Section 6).

2. SCIENTIFIC RATIONALE FOR A PREVENTIVE INTEGRATED CHILD HEALTH PROGRAM MODEL

This section presents the scientific rationale for developing an integrated preventive child health program that focuses on children under the age of 24 months. It presents the technical basis for targeting food supplements to children under 24 months and the rationale for the feeding and care behaviors that will be promoted through the preventive program.

2.1 Rationale for targeting food supplements to children under 24 months

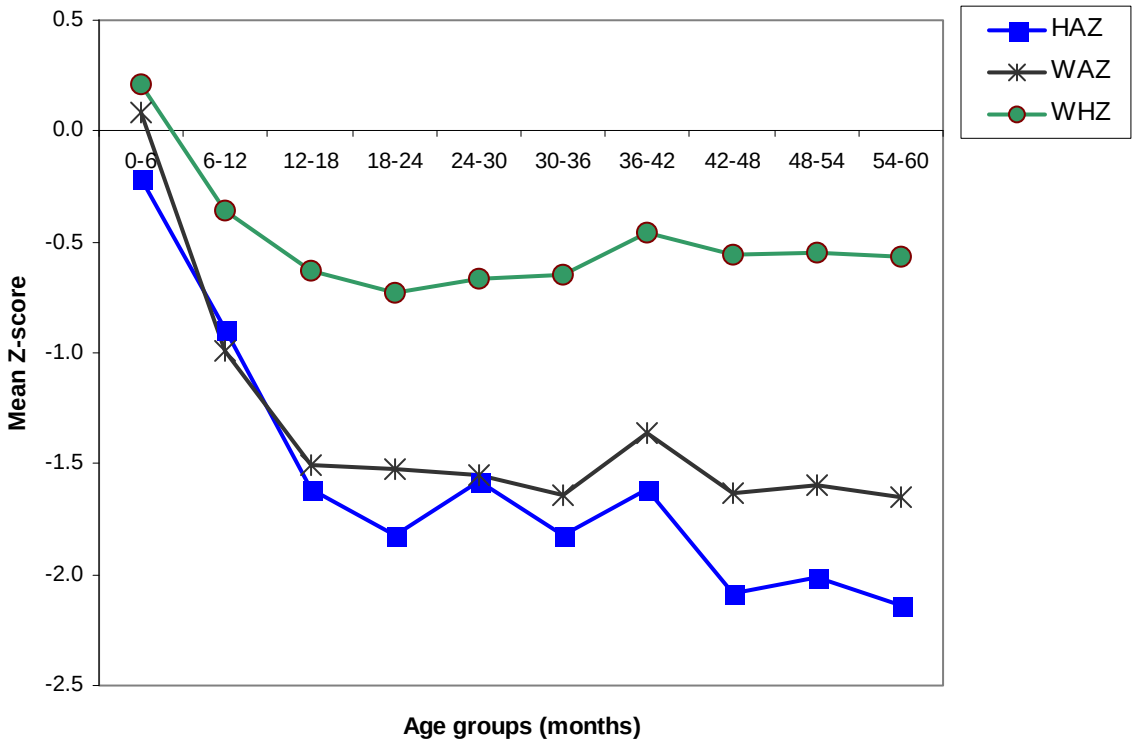
The rationale for targeting food supplements to children under 24 months is based primarily on current knowledge related to the patterns of growth of young children and on the factors that influence the impact of food supplementation on the growth of young children. A brief overview of these issues is presented below.

2.1.1 Patterns of child growth in Haiti and other developing countries

Recent national-level data from Haiti show that approximately one-third of children less than three years of age in Haiti have low height-for-age (<-2 SD with respect to reference data) and more than two-thirds of children are anemic (EMMUS-III 2001). Growth curves using data from the Demographic and Health Survey from 1995 in Haiti (see Figure 1) show a pattern of growth similar to the one observed in most developing countries around the world, where mean height-for-age (and weight-for-age) decline almost linearly from birth to approximately 18 months, after which they tend to stabilize at a low level (Ruel 2001). Mean WAZ follow similar age trends as HAZ, a pattern also observed in Latin American and eastern and southern Africa.

These growth patterns clearly show that children under two years of age are most vulnerable to growth faltering. This age range is therefore the period when interventions to prevent the rapid decline in nutritional status are most needed. As will be highlighted in the following section, this period is also the time of greatest potential response to nutrition interventions.

Figure 1: Mean weight-for-height (WHZ), weight-for-age (WAZ) and height-for-age (HAZ) of rural children in Haiti (EMMUS-II 1995)



2.1.2 Factors that influence the impact of food supplementation on child growth and faltering

A recent review of complementary feeding studies and programs (Caulfield, Huffman, and Piwoz 1999) shows that improving children's food intake through well-controlled supplementation studies resulted in an overall impact on growth that ranged from 0.25 to 0.46 Z-scores for weight-for-age and 0.04 to 0.35 Z-scores for height-for-age. Further research from randomized trials have demonstrated that the impact of supplementary feeding on child growth as well as recovery from growth faltering is determined by factors such as the timing of the intervention (child age at the time of the supplementation) and by the duration of supplementation. A brief overview of relevant findings on factors that influence the impact of supplementation on child growth is presented below.

2.1.2.1 Effect of timing of supplementation interventions on overall growth impact

Schroeder et al. (1995) have shown that in rural Guatemala, the greatest impact of food supplementation was achieved among children in their first and second years of life, and that no impact was found from three to seven years of age. In a different study setting, urban Colombia, Lutter et al. (1990) demonstrated that within the first 24 months, the greatest response to supplementation was seen in infants between 9 and 12 months of age, the peak period of diarrheal morbidity in this population. Finally, observational research from the Nutrition

Collaborative CRSP in Mexico, Kenya, and Egypt has also shown that improved diets after the age of 18 months were not associated with better nutritional status (Allen 1994).

Thus, evidence suggests that maximum benefits from improving dietary intake, including through programs that provide food supplements, will be most effective in preventing malnutrition in the period of approximately 6-24 months of age. This is not surprising, because this is the period of maximum expected growth velocity and also the period of greatest risks of growth faltering due to inappropriate complementary feeding practices and increased risks of infectious diseases rates, especially diarrhea.

2.1.2.2 Effect of timing of supplementation interventions on faltering and recovery rates

While it is important to examine the overall impact of supplementation at different child ages, it is also useful to understand through longitudinal analysis how supplementation affects the rates of growth faltering and the rates of recovery from faltering. Only two studies, both using the Guatemala longitudinal supplementation study conducted in the seventies in four rural communities, have examined the differential impact of supplementation on faltering and recovery rates in weight-for-height (WHZ) (Rivera and Habicht 1996, 2002).

The analyses confirm that the impact of supplementation on the prevention of faltering (maintaining a weight/length category during a specific supplementation period) is age-dependent. The authors found a much larger impact on the *prevention* of faltering in WHZ among children who were 6 to 24 months old at the time of the intervention (Rivera and Habicht 2002). In this age group, the faltering rates among those receiving the food supplementation intervention was 0.19 in contrast to 0.45 among nonsupplemented children, a difference of 0.26, which was due to the supplementation. The much smaller difference of 0.08 for the same comparison among children between 24 and 48 months of age was not significant.

Recovery from faltering was also found to be age dependent. Among 6-24-month-old children who had received the supplementation for 12 months, the rates of recovery from faltering was 0.78 for supplemented children and only 0.41 for those without the supplement, a difference of 0.37, which was due to the supplementation. Again there was no effect among the 24-48-month-old children.

2.1.2.3 Effect of the duration of supplementation

There is limited research on the optimal duration of food supplementation needed for maximal impact. The only information available that we are aware of comes from analyses of the Guatemala longitudinal trial (Rivera and Habicht 1996). In this context, although 59 percent of infants had recovered from faltering in WHZ within 3 months of supplementation, greater impacts were achieved with 12 months of supplementation, reaching almost 80 percent of children. These data suggest that longer durations of supplementation (6-12 months) are likely to have more impact than shorter durations (3 months).

Taken together with the current data on patterns of infant growth in countries like Haiti, the research on the impact of food supplementation on child growth indicates that in fact, children are most likely to benefit from food supplementation if they receive it well before they

are 24 months of age. Also, they should receive food supplements for at least six months in order to reap the full benefits in terms of improved growth and prevention of growth faltering. These findings suggest that a preventive model of food supplementation, targeted to all children between 6 and 24 months, is likely to have an overall positive impact on the prevalence of undernutrition in poor communities.

An important prerequisite for the applicability of the findings presented above, however, is that similar levels of supplementation as in previous studies be achieved. In the Guatemala longitudinal study, benefits were obtained when the supplement contributed at least 10 percent of daily energy requirements. This is likely to happen with the World Vision program, because it provides significant amounts of food both through a direct ration to the child (providing 1,325 kcal/day) and through an indirect ration for his/her household (an estimated additional 1,063 kcal/day/person for family members)[1] (World Vision-Haiti 2001).

2.2 Technical basis for behaviors promoted through the BCC component of the preventive program

In addition to providing *food* to children under the age of 24 months, it is also important to ensure that these foods are *fed* appropriately to these young children and that other aspects of feeding and care be also addressed. The key aspects of care and feeding to address in the vulnerable period of 0-23 months of age are breastfeeding, complementary feeding, and other preventive and curative health-related practices like good hygiene, timely immunization, appropriate home health care, and care-seeking during illness.

The World Vision program will provide caregivers in the program area with knowledge about these various aspects of care, particularly care during feeding, using a behavior change communication (BCC) intervention that works in conjunction with the food distribution component of the program. The IFPRI-Cornell team assisted World Vision-Haiti with the necessary technical support to develop this BCC strategy, focusing mainly on infant and young child feeding practices (breastfeeding and complementary feeding). Previous reviews of the communications program used by World Vision-Haiti had found that these aspects of infant care during the first few years of life were not addressed as thoroughly as some of the other aspects of child health.

This section briefly presents the current recommendations for the feeding of infants and young children under the age of 24 months. The technical basis for the feeding recommendations are not described here. However, they can be found in detail in a recent article in the *Food and Nutrition Bulletin* (Dewey and Brown 2003).

2.2.1 Current infant feeding recommendations

The behaviors promoted through the BCC component of the preventive program are grounded in the current recommendations for infant and young child feeding for each of the three

[1] The indirect ration is calculated to meet the average caloric deficit of a household of average size and composition. The average caloric deficit is estimated to be 10-20 percent in the target areas (World Vision-Haiti 2001, p. 16).

age groups: 6-8, 9-11, and 12-23 months. The recommendations are derived from a recent document entitled: "Guiding Principles for Complementary Feeding of the Breastfed Child" (PAHO/WHO 2003), and provide guidelines for appropriate feeding of breastfed infants from 0-23 months of age in developing countries. The following specific dimensions of infant feeding are covered in these guidelines (see Annex 1 for summary of "Guiding Principles"):

- *Duration of exclusive breastfeeding and age of introduction of complementary foods*: Practice exclusive breastfeeding from birth to 6 months of age, and introduce complementary foods at 6 months of age while continuing to breastfeed.

- *Maintenance of breastfeeding*: Continue frequent, on-demand breastfeeding until 2 years of age or beyond.

- *Responsive feeding*: Practice responsive feeding, applying the principles of psychosocial care.

- *Safe preparation and storage of complementary foods*: Practice good hygiene and proper food handling.

- *Amount of complementary foods needed*: Start at 6 months with small amounts of food and increase the quantity as the child gets older, while maintaining frequent breastfeeding.

- *Food consistency*: Gradually increase food consistency and variety, as the infant gets older, adapting to the infant's requirements and abilities.

- *Meal frequency and energy density*: For the average healthy breastfed infant, meals of complementary foods should be provided 2-3 times per day at 6-8 months of age and 3-4 times per day at 9-11 and 12-23 months of age.

- *Nutrient content of complementary foods*: Feed a variety of foods to ensure that nutrient needs are met. Meat, poultry, fish, or eggs should be eaten daily, or as often as possible. Vitamin A-rich fruits and vegetables should be eaten daily.

- *Use of vitamin-mineral supplements or fortified products for infant and mother*: Use fortified complementary foods or vitamin-mineral supplements for the infant, as needed.

- *Feeding during and after illness*: Increase fluid intake during illness, including more frequent breastfeeding, and encourage the child to eat soft, varied, appetizing, favorite foods.

It should be noted that the Guiding Principles do not provide guidelines for special situations of infant feeding, such as feeding of non-breastfed children, feeding during recuperation from severe malnutrition, or the feeding of infants born to HIV-positive mothers.

3. PROGRAM DEVELOPMENT PROCESS

This section describes the process used to develop the preventive program, with a focus on the development of the BCC strategy. The preventive health care components (i.e., immunization, vitamin A supplementation and deworming aspects) are not described here as the protocols for implementing these components were already in place.

3.1 Design of the preventive food aid component

The design of the food aid component of the program was based on the technical knowledge related to the effectiveness of providing food supplements to young children and the programmatic resources available to World Vision-Haiti. Discussions were held with key staff at World Vision-Haiti to present the technical rationale to them, and ascertain how the food aid component of the program could be structured to maximize the effectiveness of the food supplement and, at the same time, remain within the resource capacities of the program. Thus, issues such as the timing of enrollment of beneficiaries in the program, duration of supplementation, and provision of indirect rations to the beneficiary households were discussed. The decisions that were made are as follows:

1) Beneficiary children could be enrolled in the program beginning at 6 months of age, and up to 18 months of age. This age range was determined as the most appropriate for initiating supplementation, based on available literature on the topic.

2) Beneficiaries would continue to receive food supplements up to the age of 23 months, thus ensuring that even those who entered the program only at 18 months of age would receive six months of supplementation. The research on the duration of supplementation shows that longer durations of supplementation are associated with greater benefits, and it was decided that the program should aim to provide at least six months of supplementation.

3) Finally, it was decided that each household would receive one indirect ration of food supplements, even if the household included more than one direct beneficiary.[2]

Further implementation details of the food aid program are presented in Section 4.

3.2 Development and design of the BCC component

The BCC component of the full preventive program was designed in two major phases, a research phase and a development phase.

[2] Both program models (preventive and recuperative) also target food aid and preventive health care to pregnant and lactating women. Thus, it is possible that a single household might include a pregnant or lactating beneficiary in addition to the child beneficiary in the preventive or recuperative category.

Research phase

The research phase itself consisted of three steps:

1) *Review of existing communication materials:* A review of BCC program materials and manuals used in Haiti was conducted to identify potential materials for use in the World Vision-Haiti BCC program.

2) *A preliminary qualitative study:* A short qualitative study was conducted that gathered basic information on infant feeding and care practices in the evaluation area. This information was used both to design the baseline survey instrument for the program evaluation as well as to design a larger formative research study that was used to develop the BCC program.

3) *A more in-depth formative research study:* This study gathered data on infant and young child feeding and care and also included a recipe trials component that was used to develop enriched complementary foods to be promoted in the BCC program, using local and donated foods. In addition, it included some observations of current World Vision program activities, which were used to identify suitable program venues for the BCC program.

Program development phase

The data from Steps (2) and (3) in the research phase were used to assess the adequacy of infant and young child feeding practices and to identify and develop programmatic actions to improve non-optimal practices This was done through a rigorous program development phase, which consisted of the following steps:

1) *Identification of priority programmatic actions for the BCC program*: Following the formative research study, the results of the study were presented to key stakeholders in World Vision-Haiti using a program planning decision tool developed by the IFPRI-Cornell team. This facilitated the assessment of different programmatic options for the BCC program and supporting activities.

2) *Development of the BCC strategy*: Once the behaviors to be promoted through the BCC component had been selected, a BCC strategy was developed, taking into account the existing program structure and the available delivery points for different activities.

3) *Development of BCC materials and training plans*: BCC materials and training plans were developed in collaboration with World Vision and an adult education training firm.

4) *Training of World Vision staff*: World Vision staff was trained in the technical aspects of infant and young child feeding and care as well as in the use of the newly developed communication materials using adult education techniques.

5) *Development of implementation plan and schedule*: A round of discussions was held with World Vision program staff to finalize the implementation schedules for the BCC activities at different program points.

This section summarizes each of the steps used to develop the BCC program, and focuses on how the formative research results were used to inform the program development process. The research results used to guide the program development phase are only presented briefly because they have already been described in detail in previous reports (see Menon et al. 2001, 2002a, 2002b).

3.2.1 Research phase

3.2.1.1 Review of program communications materials

The first review of program communication materials commonly used by PVOs in Haiti was initiated in November-December 2001 and has been reported previously (Menon et al. 2001). The purpose was to gather information on the existing nutrition and health education models currently used in Haiti. The two guides used by different PVOs in Haiti were: 1) the Ministry of Health Guide (MSPP guide) produced in 1991, and 2) the CARE International guide produced in 1996. The health and nutrition topics that are covered in the two main health and nutrition education guides were compared to the currently recommended best practices for child health and nutrition at specific ages.

It was found that both guides covered breastfeeding practices and practices related to the prevention and treatment of childhood illnesses quite extensively. Messages related to complementary feeding practices, however, were minimal and psychosocial care was generally absent from both education packages. Messages related to complementary feeding focused mainly on nutrient density and dietary diversity and did not address feeding frequency or portion size. The CARE guide included a few messages related to hygiene during food handling and preparation, as well as one message related to assistance and supervision during child feeding. The MSPP guide did not cover these topics.

This first review revealed that in order to address the recommended best practices for infant and young child feeding up to two years, the program development team would have to look further to identify more materials or to develop new materials based on the planned formative research.

3.2.1.2 Rapid qualitative study

As a first step in the formative research process, a rapid qualitative study was conducted in January 2002 in the Central Plateau to gather information on general patterns of infant and child feeding practices. The data were used to guide the development of the baseline quantitative survey for the evaluation and to design the formative research required for the development of the BCC strategy (Menon et al. 2002a). Interviews with key informants and with young mothers were carried out to investigate the following topics: maternal knowledge, attitudes and practices regarding child feeding, maternal dietary restrictions during lactation, and maternal time, workload, and childcare arrangements.

Overall, the results suggested that the current infant and child feeding patterns departed substantially from international feeding recommendations, especially with regard to the recommendations to exclusively breastfeed up to 6 months of age, and to complement breast milk with frequent feeding of energy- and micronutrient-dense complementary foods after 6 months of age. This first phase of research raised a number of questions related to infant feeding that were further investigated in the next stage of formative research. These include issues related to the factors that motivate the early introduction of foods and liquids in children's diets, the nutrient composition and mode of feeding of the early complementary foods, the timing and patterns of feeding young children during the day, and the rationale for those behaviors. Findings regarding maternal diet during lactation also revealed that dietary restrictions were widespread. This suggested that additional research was needed to better understand the extent to which mothers adhered to these restrictions and to determine whether they were likely to result in nutrient deficiencies among lactating mothers.

3.2.1.3 Formative research study

A more extensive formative research study was undertaken between May and August 2002 to gather in-depth information on current infant feeding practices, conduct recipe trials to develop improved complementary foods, and to understand current World Vision program activities in the Central Plateau of Haiti (Menon et al. 2002b). Several data collection techniques were used, including individual and group interviews with mothers of young infants, grandmothers, fathers, and World Vision program staff. Participatory group recipe trials were conducted to develop recipes for enriched complementary foods and to discuss their feasibility, acceptability, and affordability under real-life conditions in the program areas. Finally, observations of World Vision's program activities were conducted in the Central Plateau area as well as on the island of La Gonâve to understand the implementation of current program activities and to explore the feasibility of enhancing current educational activities.

Infant and young child feeding practices

The formative research provided information that allowed us to characterize typical infant and young child feeding practices in rural Haiti and to understand the rationale for these behaviors. Specific factors likely to either facilitate or constrain adoption of optimal practices were also identified for each specific dimension of child feeding practices studied. Results of the formative research are described in Menon et al. 2002b, and a discussion on how the information was used for program planning is presented in a subsequent section of the present report.

Development of enriched complementary foods

In addition to the data gathered through the formative research interviews, a series of participatory recipe trials were conducted with groups of local women. The purpose of the recipe trials was to develop recipes for enriched complementary foods that could be promoted through the BCC program. The recipe trials confirmed that traditional complementary foods are low in micronutrient-density, although they are generally of adequate energy density. The process also demonstrated that it was feasible for the recipe trial participants to create a number of improved recipes using traditional preparation methods, local or donated ingredients, and adding locally available nutrient-dense foods such as fish, eggs, beans, and vitamin A-rich foods.

Exploring the potential of different program points for the delivery of a BCC program

Three main program delivery points are used by World Vision in their program and the formative research study gathered information on each one of these delivery points: 1) the Rally Posts (where growth monitoring, immunization, and health education activities are held); 2) the food distribution points (where food commodities are distributed); and 3) the Mothers' Clubs (group meetings held in the communities and used primarily for discussions on health education topics). Observations were carried out at these three delivery points to improve our understanding of current health and nutrition education program activities and to identify focal points for introducing our preventive BCC intervention.

Observations at the ***Rally Posts*** indicated that while the Rally Posts may be a promising entry point for the BCC program, some aspects of program implementation would have to be modified to improve their potential for effective communication with participants. First, the timing of the education session would have to be reconsidered to accommodate the majority of participants. Second, health agents would have to be trained on the use of communication techniques to improve their skills and interest in this area, and they would have to be provided with appropriate material to communicate more effectively. Finally, the time allocation of health agents would also have to be shifted to allow more time for communication and counseling, and less to weighing, charting, and reporting children's weights.

The ***food distribution points*** were identified as the least promising delivery point for the BCC intervention because of their crowded, busy, and distracting environment. However, the structured progression of beneficiaries through the food distribution system could facilitate the incorporation of a system to distribute brochures, counseling cards, or handouts to beneficiaries based on their child's current age and health status. The venue could also be used to inform program beneficiaries about the proper use of donated commodities and their potential use for preparing enriched complementary foods.

The ***Mothers' Clubs*** were seen to be the best forum for group communication and discussions, and thus a promising "main" venue for the BCC program. However, here too, it would be important to modify current teaching and communication approaches to ensure effective learning and behavior change communication. Specific modifications that could help the process include training health agents and *colvols* in the principles of adult learning, providing visual communication material, and training health agents in providing the group with local and contextual examples to accompany the theoretical aspects of the topics discussed. Also, in addition to the usual classroom-like activities, the sessions could be used to facilitate innovative activities such as participatory recipe trials. The venue could also possibly be used to set in place mechanisms that can *support* behavior change, like peer groups to encourage and support exclusive breastfeeding.

3.2.2 Program development phase: The use of formative research results for program planning

3.2.2.1 Identification of priority programmatic actions for the BCC Program

Priority programmatic actions for the BCC program were identified through discussions with World Vision staff at all levels. These discussions were held through a series of workshops involving decisionmakers and program staff within World Vision-Haiti, as well as the U.S. Agency for International Development (USAID) and other private voluntary organizations (PVOs) working in the area of child nutrition in Haiti. The workshop discussions focused on prioritizing behaviors to be promoted through the BCC program, as well as on reviewing the design and the technical and operational aspects of the BCC strategy.

The selection of priority actions for the BCC program was facilitated greatly by the use of a decision tool that summarized and organized the formative research results in the form of a matrix (presented in Annex 2). The matrix compares current practices in the program areas to best practices, as summarized in the Guiding Principles (PAHO/WHO 2003), and presented in Annex 1. The matrix also summarizes results of the formative research regarding facilitating factors and constraints that could influence the ability of program participants to adopt recommended practices. For details about the results, see Menon et al. 2002b.

As a next step to the results matrix, we developed a "program-planning matrix" that examined the programmatic actions that would be necessary to address each specific constraint or facilitating factor (see Annex 3). The consideration of feasible programmatic actions (presented in the second column) was based primarily on the existing World Vision program infrastructure and capacity (human, financial, technical). However, future needs and other supporting programs (particularly to support the BCC program) were also considered and these are presented in the third column of Annex 3. The program planning discussions held with World Vision-Haiti focused on identifying modifiable behaviors, constraints, and facilitating factors that could be addressed within the current programmatic options available to them. Program options that would require new program resources or infrastructure were also discussed.

3.2.2.2 Development of a BCC strategy

Following the formative research process and the discussion of the results with World Vision-Haiti, the BCC strategy was developed. This was done using a "BCC strategy planning matrix," which outlines the various aspects that need to be addressed in order to ensure that the behavioral change objectives defined through the program planning discussions are achieved. The matrix is presented in Annex 4. It identifies, for each age-specific set of behaviors to promote, the following aspects:

- *Who* needs to be targeted in order to ensure that the desired feeding behavior is achieved. For example, in order to ensure that breastfeeding is initiated appropriately, it is important to target older women and midwives in addition to pregnant women.

- *When* the communication related to a specific behavior has to reach the identified audience in order to maximize its effectiveness. For instance, communications

related to appropriate initiation of breastfeeding should reach the audience *before* a pregnant woman gives birth, since many of the appropriate behaviors are important to initiate in the few hours following childbirth.

- *Where* the communications has to take place in order to reach the desired audience at the right time. For example, behaviors related to initiation of breastfeeding would have to be promoted at prenatal consultations and Mothers' Clubs for pregnant women.

- *How* specific behaviors should be promoted at the different program venues and for different program audiences. For example, the prenatal consultations should consist of individual counseling while the Mothers' Clubs for pregnant women would use small group communications that include discussions and problem solving.

- *What* is needed to ensure that the communication strategies identified for each type of behavior, program venue, and participant are implemented appropriately. For example, prenatal and postnatal counseling staff would have to be trained in individual counseling methods, while the staff running a Mothers' Club for pregnant women would have to be trained in group communication methods. Both would also have to be trained in the technical content of the material. Further, all these activities necessitate the development of appropriate training and resource materials for staff.

3.2.2.3 Development of BCC materials and training plans

Following the identification of the BCC strategies to be used at the different program venues, program communication materials were developed for use in the BCC program. Since the Mothers' Clubs were identified as the most promising main venue for the BCC, the material development process focused on materials to be used at the Mothers' Clubs. Further, WV was already in the process of developing other simple materials for use at the Rally Posts.

The materials developed for use in the Mothers' Clubs focus mainly on infant and young child feeding practices since this was the weakest component of the BCC program. Moreover, these behaviors were considered the most important to address in a program whose goal was to *prevent* malnutrition among children 0-24 months old. Other World Vision materials are available that cover other aspects of health care and care during illness for infants and children. Details about the development of the communication materials have been reported previously (Loechl et al. 2003). All the communication and training materials have been translated from Creole into English and are available on a CD-ROM.[3]

The development of the BCC materials to be used in the preventive program consisted of five steps:

[3] The materials can be requested by email. Contact: Cornelia Loechl, IFPRI, 2033 K Street, N.W. Washington, D.C. 20006; c.loechl@cgiar.org

a) A second review of program communication materials used in Haiti.

b) Pretesting and adaptation of newly developed messages.

c) Adaptation of BCC sessions based on the formative research and WV program context.

d) Testing and adaptation of visual aids for BCC.

e) Adaptation of BCC training guides.

(a) Second review of program communication materials in use in Haiti

In conjunction with the formative research process, a review of two additional sets of behavior change communication materials related to infant feeding in Haiti (other than those described in Section 3.2.1) was conducted to identify newly developed local materials that could potentially be adapted for use in the World Vision program. These materials were 1) the CONCERN Guide on nutrition produced in 2001, and 2) the modules on breastfeeding and young child feeding of Freedom from Hunger (FFH) produced in 2001 and used in conjunction with the FFH Credit for Education program. The first step of review consisted in comparing the health and nutrition topics covered to the currently recommended best practices for child health and nutrition at specific ages, as described previously.

Both sets of materials addressed breastfeeding practices. In addition to the topics covered in the MSPP and CARE guides, they also covered some aspects of responsive feeding and portion size. Furthermore, the FFH materials included messages related to feeding frequency, psychosocial care, and good hygiene practices during food handling. Both guides laid out complementary feeding practices for specific age groups and the FFH sessions used the same age ranges specified in the "Guiding Principles" document, i.e., 6-8 months, 9-11 months, and 12-23 months old.

In a second step, the specific content, the communication methods used, and the length and structure of the sessions were analyzed. The sessions used by FFH were highly detailed and comprehensive. For instance, the breastfeeding module of FFH consisted of seven learning sessions, and the young child feeding module included eight sessions. Also, each learning session included a set of explicit instructions to the fieldworker, accompanied by activities for them to carry out with the group of participants in order to achieve the objectives of the learning session. The learning sessions were accompanied by visual materials, a chart on child development and feeding, and a set of images to illustrate stories and specific feeding recommendations. Finally, the materials were intended for use with a communication strategy that was participatory and incorporated the principles of adult learning as well as of trials of improved practices.

The materials developed by FFH for their Credit with Education program in Haiti were identified as the most appropriate for adaptation and permission was obtained from FFH to use their materials.

(b) Pretesting of newly developed messages

A first step in the adaptation of the FFH materials and the development of new materials was the pretesting of new messages developed based on the formative research. Following this, the pretested messages were incorporated into the communication materials.

The behaviors to promote were reformulated into messages to be included in the communication materials. Some of these messages have been used successfully in Haiti by FFH and other organizations and did not require adaptation. For a few behaviors, which were not fully addressed in the FFH materials, the IFPRI-Cornell team developed new messages. These were based on the results of the formative research and on the current Guiding Principles for infant feeding. They focus on the feeding and care of children under 24 months of age and are presented in Annex 5.

All of the new or modified existing messages were pretested before being finalized. The pretest process consisted of four individual and two focus group discussions in the areas where the BCC program will be implemented. For each item, the interviews gathered information on participant comprehension, the believability of the message, the perceived importance and benefit of the actions implied in the message, and whether the participant would consider changing their behavior after hearing the message (see Box 1).

Box 1: Questions addressed in the pretest of new messages

- **Comprehension of the message**: *What do you understand?; What is the message asking to do?; According to you, is there a better way to phrase the message?; If yes, how should the message be phrased?*
- **Believability**: *What do you think of the message?; Do you believe what it says?; Do you agree with what the message says?; Do you think your neighbor would agree with what the message says?, If no, why not?; To whom do you think it is addressed and why?; Do you believe it is possible to do what the message says?; If no, why not?*
- **Perceived importance and benefit**: *What do you think about the importance of this message?; What do you think might be a benefit of doing what the message says?; How frequently do you think you will have to do what the message says to experience beneficial effects?*
- **Behavior change intent**: *Are you going to change your behavior after having heard this message?, If yes, what are you going to do?; How often do you think you would be able to do what the message says?; Why?*

Annex 6 presents the messages that had to be modified based on the pretest interviews, as well as the modified messages and the reason for the modification. For most messages, problems occurred only at the comprehension level. Once the messages were understood, believability was good in general. An exception was the message regarding drinking water while

breastfeeding: The interviewed mothers perfectly understood the content of the message but had difficulties to imagine that one could drink water without eating although they admitted that their lips become dry when the child feeds for a longer time and that they would then automatically ask for water. For all messages, the mothers perceived the importance of the actions implied and were ready to try these at home.

Along with the pretest of the messages, we also investigated how best to phrase certain words in Creole (e.g., "snacks," "enriched gruel," etc.). Further, a list of commonly used and possessed local measuring utensils was obtained in order to be able to develop appropriate communications about the quantities of foods to be fed to children in different age groups.

(c) Adaptation of BCC sessions based on the formative research and WV program context

Based on the results of the pretest exercise and the current infant feeding guidelines outlined in Section 2.2.1, the content of FFH materials was adapted in collaboration with the *Centre d'Appui et de Formation En Management* (CAFEM), a local service provider for FFH in Haiti.

The adaptation of the FFH materials also took into account findings from the formative research conducted by the team in 2002 (Section 3.2.1). The summary matrix from the formative research (Annex 2) was used to adapt the FFH learning sessions for use in the World Vision program areas by addressing specific *modifiable* constraints to adopting recommended practices. For example, the formative research had revealed that exclusive breastfeeding is rarely practiced because mothers typically have to leave home for long hours to work or to attend to other household responsibilities, as early as within the first two months following birth. Mothers usually leave the infant at home with a substitute caretaker and leave behind a variety of liquids and gruels to be fed to the child in their absence. The recommended practice of using expressed breast milk was found to be acceptable for most mothers in our formative research study. However, the practice itself was constrained by a lack of understanding of how exactly to express and store breast milk. This information was used to include training on the expression and storage of breast milk in the adapted sessions. The materials for the learning session now include demonstrations of expression of breast milk, and printed instructions on how to express breast milk. In addition, the sessions on exclusive breastfeeding address many of the problems that breastfeeding mothers reported in the formative research.

The materials were also adapted to the programmatic context of World Vision as this differed considerably from the context of the Credit with Education program that FFH had used them in. For instance, the Credit with Education sessions are based on weekly group meetings, while World Vision program participants meet only once a month in the Mothers' Clubs. Changes made to accommodate the program context include:

1) Adapting the order of the topics to the preventive perspective of the program, taking into consideration the notion that critical pieces of information should reach mothers at what is likely to be the most appropriate learning moment for each set of behavior. The schedule of the sessions was designed to be age-specific.

2) Extending the length of the learning sessions from about 30 minutes to about an hour for each session, but maintaining the same structure as with the FFH learning sessions.

Slight changes in the wording in Creole were also made during the various training sessions of the World Vision MCH staff.

(d) Testing and adaptation of visual aids for BCC

The instructions for conducting a learning session are accompanied by visual materials. For several of the learning sessions, a large-format, laminated chart on child growth, development, and feeding is used to facilitate discussion of infant and child feeding recommendations in relation to the physical development of a child (Child Development and Feeding chart on the CD-ROM of communication materials). It shows that children learn how to eat just as they learn how to sit, crawl, and walk. Each row represents a different theme related to infant and child feeding, covering issues of food texture, breastfeeding and feeding, participating in feeding, frequency of feeding, and recommended quantities of food. The child development and feeding chart can be attached to a wall or a tree.

In addition to the child development and feeding chart, a series of images is used to support verbal presentations of the health agents and *colvols*. The images present scenes to illustrate stories and specific feeding recommendations regarding exclusive breastfeeding, maintenance of breastfeeding, introduction of complementary foods, food variety, responsive feeding, and prevention of diarrhea. Some of them are enlargements of specific boxes on the child development and feeding chart.

These visual materials developed by Freedom from Hunger were adapted in collaboration with *DidacArts*, a local firm that specializes in producing visual materials for health and nutrition topics. The materials were adapted to ensure that the technical information was up-to-date and relevant, and also to ensure that the materials would be culturally relevant and accepted.

Technical adaptation: The technical adaptations included taking into account the current infant feeding guidelines regarding feeding frequency and separation of meals and snacks, using local measures for showing the amount of food that should be fed at each feeding, and the inclusion and adaptation of visual instructions developed by La Leche League of Guatemala showing manual breast milk extraction techniques.[4]

Adaptation to cultural context: The adaptation of the visual materials to the cultural context of rural Haiti was done by pretesting the visual materials in the program areas in three stages:

Stage 1: Two focus group discussions were conducted in the program areas where participants were shown parts of the child development and feeding chart as well as four other images and asked to comment on their perceptions related to these images. The goal was to

[4] Reference: Breastfeeding manual for breastfeeding advocates and mother-to-mother support groups, La Leche League of Guatemala.

ensure that the physical appearance of the people in the images would match that of the rural people, and thus ensure that mothers would identify themselves with the figures.

Stage 2: A second pretest included the following materials, modified based on the results of Stage 1: the child development and feeding chart, 17 images of the FFH modules and one new image that presents visual instructions on how to express breast milk. This pretest was conducted in project localities different from those used in Stage 1. Four individuals (mothers and fathers) were interviewed, and four focus groups were conducted, two with mothers and fathers of children less than two years old and two with World Vision health agents.

The questions addressed in the second pretest are presented in Box 2.

Box 2: Questions addressed in the pretest of visual aids

- What do you see in this picture? How does the picture make you feel?
- What are the people in this scene doing? Why are they doing this? What will the things that the people are doing in the scene lead to in the long term?
- Do the people in the picture look like somebody you know? Why?
- Is there anything in the picture you don't like? Why?
- How would you like to improve the picture?
- *Additional question for the health agents:* How would you use the picture?

The visual materials were modified to 1) adapt the images to the context of the target group in the Central Plateau; 2) help people understand the pictures and their messages more clearly, and 3) ensure that the persons or actions in the image would be those of a role model. Not all images needed to be modified.

Stage 3: Some of the images were modified slightly during the training sessions of the health agents and *colvols*.

(e) Adaptation of BCC training guides

The Freedom from Hunger training materials include manuals and resource materials for training of trainers as well as for training of field staff. For the WV staff, the trainers' guide and toolkit for the module on infant and young child feeding practices were adapted to reflect the changes in the content of the learning sessions. For example, a session on cooking and tasting recipes for enriched complementary foods was added to the training sessions. In addition, the schedule of learning sessions was created specifically to address the needs of the World Vision program. The manual on adult learning principles and practices, which is used along with the training materials on infant and young child feeding, needed only slight adaptations in terminology (for example, changing "fieldworkers" to "health agents/*colvols*").

Both training manuals were used for the training of trainers (Stage 2) and the training of field staff described in the next section. The guide for training in the use of adult learning principles is not included in the training manuals developed for World Vision-Haiti because only certified trainers facilitate this type of training.

3.2.2.4 Training of program staff

The contact between the program and participants is established through health agents and *colvols* (program volunteers). Health agents are World Vision employees and receive a monthly salary. *Colvols* are community volunteers who assist the health agents in their duties. They receive a small monthly incentive from World Vision. Both health agents and *colvols* are supervised by nurses who work under the supervision of the regional health coordinator in Hinche. The national health coordinator for World Vision is based in Port-au-Prince and oversees the activities in all the program areas of World Vision in Haiti. The organizational structure of the program is presented in Annex 7.

The formative research conducted by the IFPRI-Cornell research team in 2002 suggested that although the WV health agents and *colvols* were highly motivated to transfer skills and knowledge related to child health to the participants in the Mothers' Clubs, they were constrained by a lack of training in appropriate methods of adult education. The Mothers' Club sessions were didactic and rarely based on the real life experiences of the rural Haitian mothers. In contrast, the Freedom from Hunger approach uses methods of communication that are grounded in principles of adult learning (presented in Annex 8).

Using this approach to teaching and learning, program staff learn how to create a training environment where people feel safe and respected, how to facilitate group discussions, offer open-ended questions, create dialogue, animate role plays, and build on the ideas of the participants. Thus, it was decided that the WV program, particularly the Mothers' Club sessions, would use the same approach used by FFH and that WV program staff would be trained in the use of these communication methods in addition to being trained in the technical issues related to infant and young child feeding and care.

The training of World Vision staff was done in two steps, both of which covered the technical aspects of infant and young child feeding and the principles of adult learning. First, the supervisory-level staff were trained in a "training of trainers" session, followed by the training of field staff in World Vision. The training has been described in detail in a previous report (Loechl et al. 2003) and is presented very briefly here.

Training of Trainers

The training of trainers was done in two stages.

Stage 1: Training in the use of adult learning principles for effective communication: In the first stage of training, all MCH staff above the level of health agents and *colvols* (i.e., the MCH National Coordinator, Regional Coordinators, and field supervisory staff) were trained in the use of adult learning principles for communication. The workshop lasted for five days. The two CAFEM trainers who facilitated the transfer of training skills and knowledge are associates

of the Global Learning Partners, Inc.,[5] a firm that has designed a series of three training courses to strengthen skills on the principles and practices of adult learning.

Stage 2: Training in the use of the new communication materials on infant and young child feeding: In the second step, the same staff was trained over a period of six days on the use of the adapted communication materials on infant and young child feeding. This training workshop was facilitated by one of the CAFEM trainers who conducted the Stage 1 training. In addition, two of the World Vision supervisory staff participated as facilitators of the training and assisted the CAFEM trainer.

Training of field staff

Training of field staff (i.e., health agents and *colvols*) was conducted through a six-day workshop, which was similar to Stage 2 of the training of trainers described above. The training was conducted by a group of five World Vision supervisors who had previously been trained in the Training for Trainers workshops. The health agents and *colvols* were trained in the use of the infant and young child learning sessions, and the use of the technical content of the sessions was linked to the principles and practices of adult education.

3.2.2.5 Development of implementation plan

The implementation plan for the BCC activities at different program points was developed and finalized through a round of discussions held with World Vision program staff. A first outline of the implementation plan was developed together with the national MCH coordinator for World Vision. This plan was further complemented through several meetings with the regional MCH coordinator and the field supervisory staff in Hinche.

Some of the changes to the BCC program included reorganizing existing Mothers' Clubs and forming new ones based on the program-specific criteria for club attendance (i.e., separate clubs for pregnant and lactating mothers, and for mothers of children 6-23 months old). Further, the protocols for activities at the other service delivery points were revised to introduce new BCC activities or to improve the existing BCC activities. Details of the changes and the current implementation plan are presented in the next section.

[5] The Global Learning Partners, Inc., is a Canadian adult-education training firm whose goal is to enable adult educators around the world to design and use dialogue in their education programs. Their courses are based on the teaching/learning approach of Dr. Jane Vella (Vella 2002). The firm has developed a network of organizations and individuals, referred to as the Global Learning Partners (see website: www.globalearning.com).

4. IMPLEMENTATION PLAN FOR THE PREVENTIVE PROGRAM

This section presents the implementation plan for the preventive program and provides details of the services that will be offered at the five major points of contact between program staff and participants. These are: (1) *Rally Posts*, where beneficiaries are identified and health education, growth monitoring, and preventive health care are provided; (2) *Mothers' Clubs*, where beneficiary mothers and children come together in a small group setting to discuss issues related to infant and young child feeding, hygiene, family planning, or HIV/AIDS; (3) *Pre- and postnatal consultations*, where pregnant and lactating women receive preventive health care and education; (4) *Food distribution points*, where beneficiaries receive their food rations for the month; and (5) *Home visits*, where beneficiary households with a newborn infant, a severely malnourished child, or a child with growth faltering are visited by the World Vision health staff.

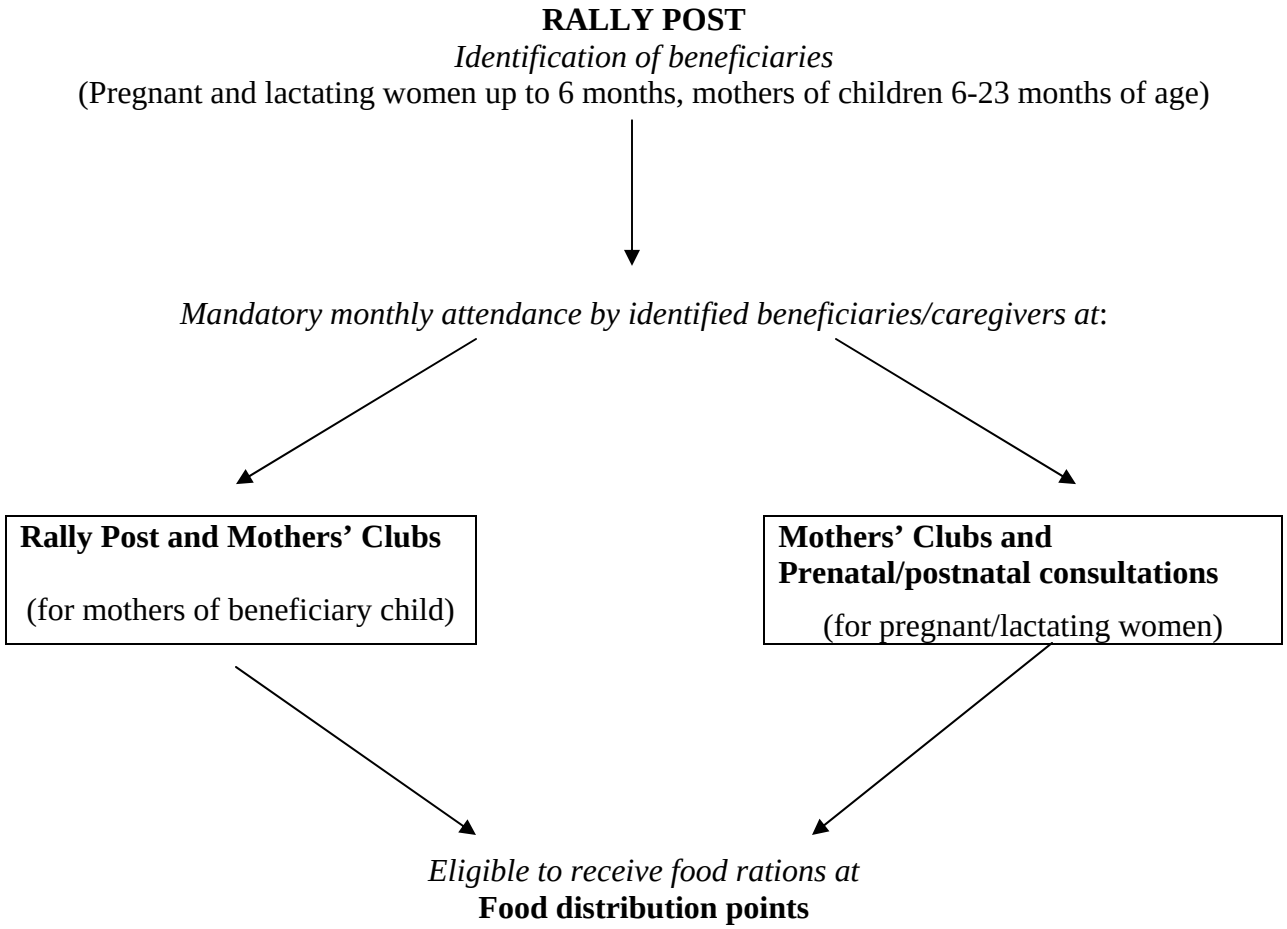
4.1 Recruitment of program beneficiaries

The main beneficiaries in the preventive MCH program are *all* children between 6 and 24 months of age who reside in the program areas, as well as pregnant and lactating mothers (until their infant is 6 months old). The Rally Post is the entry point for MCH beneficiaries, and is used to refer them to the appropriate program services. New beneficiaries are identified at the Rally Posts every month; 6-18 month old children are admitted into the program on a monthly basis, whereas pregnant and lactating women can enter the program only every four months. The upper age limit for admitting children into the preventive program is 18 months, to ensure that all children in the program receive food aid and other services for at least six months (up to 23 months of age).

For mothers of children 6-23 months old, monthly attendance at the Rally Post and at Mothers' Clubs is mandatory to be eligible to receive the food donations offered by the program. Pregnant and lactating women have to participate in Mothers' Clubs and pre- and postnatal consultations to have access to the food distribution, which takes place once a month (see Figure 2).

For ethical and humanitarian reasons, World Vision has decided that severely malnourished children who were older than the age range permitted in the preventive program (i.e. children aged 24-59 months) would still be eligible to participate in the preventive program. These children (classified as M3 according to the Gomez classification) are identified through the regular growth monitoring activities done at the Rally Posts. The services provided for the severely malnourished children in this age group include (1) distribution of food rations for nine months, (2) two meetings for the mothers where issues related to malnutrition and recuperation are discussed, and (3) home visits by health agents during the first weeks after identification.

Figure 2: Beneficiary requirements for participation in the World Vision MCH program



4.2 Rally Posts

Rally Posts are open to all pregnant women, mothers with children less than 5 years of age and women 15 to 49 years old in the communities attended. Services provided include health and nutrition education, growth monitoring of children under 5 years of age, immunization, vitamin A supplementation, deworming, free distribution of ORS and information about the family planning component.[6] The monthly weighing and attendance at the Rally Post is mandatory for caretakers of children 6-23 months of age who are MCH beneficiaries. Either the mother or another caretaker can take the child to the Rally Post.

The formative research study had revealed that a number of participants could not benefit from the education sessions conducted at the Rally Post because they arrived late, and the education session was usually carried out at the beginning of the session. Based on the

[6] World Vision offers hormone pills and three monthly injections. Women can receive these services administered by WV nurses at mobile clinics, in health centers during pre- and postnatal consultations, or at Area Development Program clinics.

discussions of these results, it was decided that multiple education sessions would be held at the Rally Posts to facilitate attendance even by those participants who have to travel long distances to arrive at the Rally Posts. Thus, it is now expected that all Rally Post participants will be able to attend an education session.

Rally Post meetings are held on a monthly basis in each community and are managed by the health agent responsible for the locality. The health agent is usually assisted by at least two other health agents and two *colvols*. The sequence of activities at the Rally Post is usually as follows (also see Figure 3 below):

1) The education session is the first activity carried out at the Rally Post. The sessions run for about 10 minutes, depending on the topic. Since a large variety of topics have to be covered, World Vision sets up a calendar of monthly topics to be covered. The health agent or *colvol* conducts several sessions on the same topic during the day with groups of 10-15 persons to cover all participants.

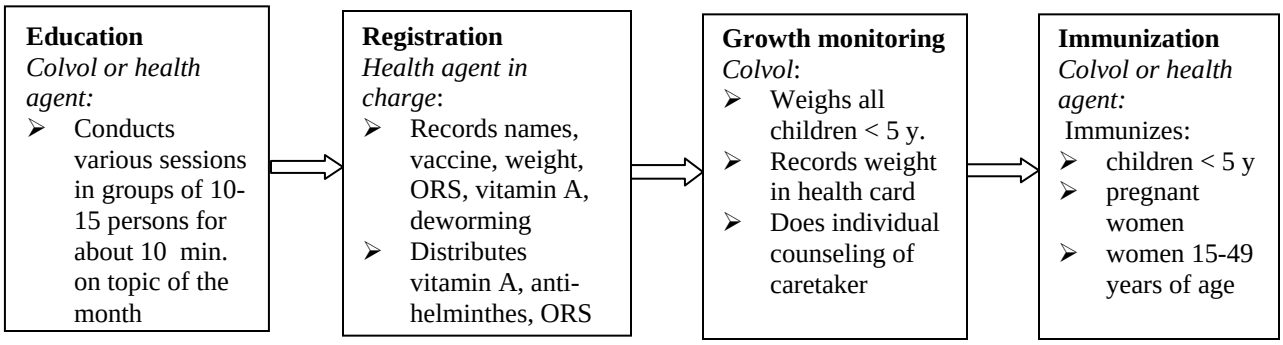
2) After the education session, the health agent registers attendance of each beneficiary. The health agent determines the type of vaccines to be administered, and whether the beneficiary is due to receive a dose of vitamin A or deworming tablets. The health agent also updates the health cards with the information on immunization and vitamin A supplementation, and for food aid beneficiaries, he/she signs attendance on the beneficiary ration card. This same health agent also does the distribution of vitamin A (every six months for children less than 5 years of age), anti-helminths tablets (every six months to children 2-5 years of age), and oral rehydration salts (ORS) sachets (three sachets per month per household).

3) The next activity at the Rally Post is growth monitoring. Each child is weighed and the weight is recorded on the growth chart printed in the health card kept by the caretaker. If the child is M2 or M3 for weight-for-age according to the Gomez classification, it is expected that the mother will receive brief counseling about feeding practices and prevention of childhood illnesses.

4) After growth monitoring, children are directed to receive their immunizations. Children receive vaccinations based on their age and previous immunization history (previously verified by the health agent in Step 2 above).

According to the new program implementation plan, the education activities at the Rally Posts will use communication materials different from the ones described in Section 3.2.2, which will be used at the Mothers' Clubs. World Vision is planning to develop short learning sessions structured in the same way as the sessions on infant and young child feeding practices, but on topics such as immunization, pre- and post-natal care, preparation of child delivery, diet for pregnant and lactating mothers, weaning techniques, description of kwashiorkor and marasmus, hygiene and environment, diarrhea and preparation of oral rehydration salt, acute respiratory infections, family planning, and HIV prevention.

Figure 3: Flow of activities at the Rally Post



4.3 Mothers' Clubs

The formative research revealed that the Clubs are an ideal setting for effective BCC activities since they are located close to mothers' homes (usually a maximum of about 15 minutes' walk) and include only a small group of mothers, resulting in minimal distraction (especially compared to the Rally Posts ambiance). Thus, the World Vision program will use Mothers' Clubs as the primary venue for BCC activities. The Clubs will bring women together in small group settings (15-20 mothers) to discuss issues related to health, hygiene, nutrition, or the environment. Health agents or *colvols* (or both) will facilitate the meetings, which will be held at least once a month.

The formative research showed that while the Mothers' Clubs were an ideal setting for BCC activities, there were many aspects of the Club sessions that needed to be modified to ensure that the BCC would, in fact, be systematic and effective. Among other things, the Clubs were reorganized to include groups of mothers of a particular physiological state and/or child age (e.g. separate clubs were now to be been organized for pregnant mothers, lactating mothers and mothers of children 6-23 months old). Furthermore, the schedule of sessions at each of the clubs was re-organized to be age-specific and to address behaviors at the best learning moment (see Annex 9 for Mothers' Clubs schedules). For instance, according to the new schedule, women will be exposed to materials and advice about the initiation of breastfeeding and exclusive breastfeeding as early as during pregnancy, and the messages will be reinforced throughout the first few months of lactation. Similarly, a session on introducing lactating women to complementary feeding is held when infants are four months old, and a follow-up session on nutritious complementary food is held when infants are five months old. This is intended to prepare them for appropriate complementary feeding when the infants are six months old.

Observations of the Mothers' Club sessions during the formative research phase showed a clear need for training the field staff in appropriate methods of communicating with adults. The observations had also shown that the field staff was not equipped with visual aids to enhance communications. Based on this, appropriate visual communication materials were developed that could be used with the different learning sessions on infant and young child feeding. Other activities at the Mothers' Clubs use other communication materials, such as an album of images with key messages related to the other aspects of maternal and child health like immunization,

preparation of child delivery, diet for pregnant and lactating mothers, hygiene and environment, HIV prevention, etc.

The Mothers' Clubs have now been organized in such a way that in the preventive program, it is expected that women will begin attending Mothers' Clubs when they are pregnant, continue to attend the clubs throughout their first six months of lactation and finally, as mothers of children 6-23 months of age, until their child reaches 2 years of age. Thus, a mother who starts attending the clubs during pregnancy could attend for up to 27 sessions. New Mothers' Clubs for pregnant and lactating women are formed only every four months, because too few pregnant and lactating women are identified each month. The mothers are required to attend the Mothers' Clubs themselves and cannot send another family member to use this service. This is different from the Rally Posts or food distribution points, where substitute caretakers are allowed to attend instead of the mother.

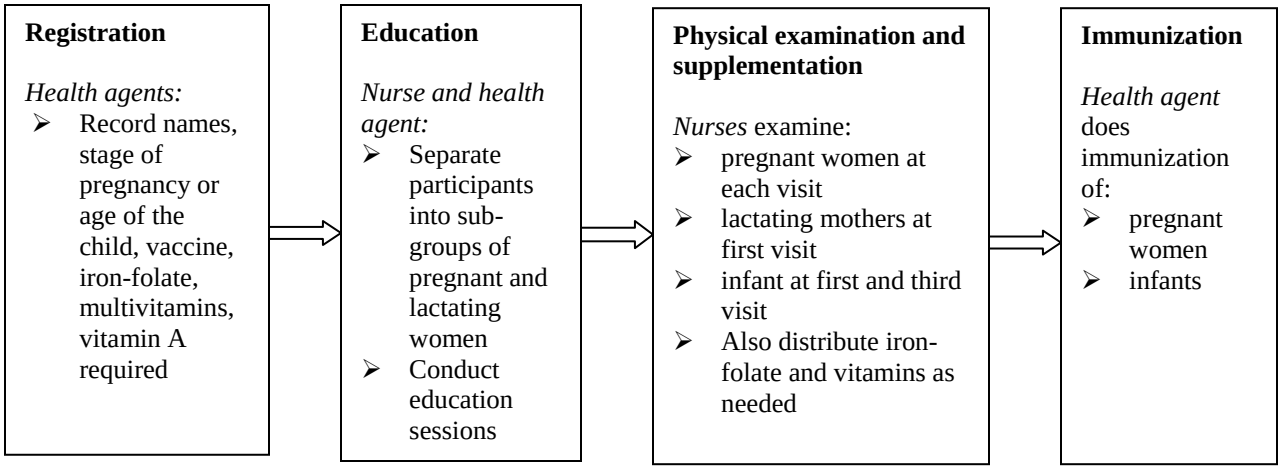
During the discussions about reorganization and formation of new Mothers' Clubs, the World Vision staff was particularly keen on ensuring that the Mothers' Clubs would be as homogenous as possible in terms of children's age and/or stage of pregnancy or lactation. However, other criteria such as distance from the mothers' homes and ensuring at least a minimum of 15 participants per club had to be taken into consideration. The resulting organization of the clubs reflects a compromise between these three factors, i.e., stage of pregnancy/child age, distance from mothers' homes, and ensuring that each club has at least 15 members. In situations where a club might consist of a relatively heterogeneous group, e.g., where there are women with children of different ages, it has been decided that both the health agent and the *colvol* will facilitate the Mother's Club meeting and they will split the group into two subgroups to provide relevant and timely messages to mothers based on their specific needs.

4.4 Pre- and postnatal consultations

Pre- and postnatal consultations are held together on the same day, about once a month. They are conducted mainly by the supervisor nurses in collaboration with the health agents of the localities covered. Consultations usually take place in health centers, although mobile clinics are also used for remote areas. For pregnant and lactating women, three prenatal and three postnatal visits are mandatory in order to receive food rations. The flow of activities conducted at these consultations is illustrated below (see Figure 4).

The discussions of the formative research results suggested that the pre- and postnatal consultations were a good venue to reinforce some of the issues discussed at the Mothers' Clubs. However, education and counseling was previously not a systematic part of the pre- and postnatal consultations. This has now been systematized to ensure that education sessions will be held at every pre- and postnatal consultation. Furthermore, the education sessions at the consultations will be held separately for pregnant and for lactating women, and will be facilitated by different health agents where possible. This will ensure that the women receive information targeted to their physiological state in a timely fashion. World Vision is also planning to reorganize the consultations so that those for pregnant and lactating women are held at different times during the day or on different days.

Figure 4: Flow of activities at pre- and postnatal consultations



The sequence of activities at the pre- and postnatal consultations is usually as follows (also see Figure 4 above):

1) All women are asked to arrive at the health center at the same time on the day the consultation is held. Upon arrival, they are registered for the consultation by the health agents. At this time, the health agents record the names of the women, their stage of pregnancy (or age of their child). They also note what vaccinations and supplements (e.g., iron-folate, multivitamins, vitamin A) are required for each woman.

2) The registration is followed by a short education session, usually between 10-30 minutes long. Under the revised implementation plan, the nurse and the health agents will conduct the education sessions separately for pregnant and lactating women. If possible, pregnant women will be further split into two groups according to their stage of pregnancy (first and second trimester, last trimester), while lactating mothers will be separated according to the age of their child. Another session will be held later during the day for mothers who arrive later.

   The schedule for the education session at the prenatal and postnatal consultations is provided in Annex 10. The focus of the education for the prenatal consultations is on danger signs in pregnancy, preparing for labor and delivery, and initiation of breastfeeding. The focus of the education during the postnatal visits on the other hand is on diet during lactation, and to encourage mothers to continue exclusive breastfeeding, at a time when they are particularly vulnerable to introducing other liquids and semi-solid foods to their infants. Some of the communication materials and learning sessions developed for infant and young child feeding will also be used during the education at the pre- and postnatal consultations. For other topics discussed during the pre- and postnatal visits, other communication materials, such as an album of images with key messages related to the other aspects of maternal and child health, will be used.

3) After the education session, the nurse conducts physical examination of women and children. She or a health agent distributes iron-folate tablets to pregnant women and multivitamins to lactating mothers at each of the visits. If a mother has not received a dose of vitamin A at the first postnatal home visit by her local health agent or *colvol*, a vitamin A capsule (100,000 IU) is be given to her at her first postnatal consultation.

4) The final activity at the consultations is the administration of vaccines to either the pregnant women and/or the children, if necessary. Pregnant women or newborn infants may have already received their immunization at the Rally Post, in which case they do not receive them at the consultation.

The prenatal consultations are held once a month, and women in their second and third trimesters are expected to attend at least three of the monthly consultations before they deliver their infant. The three mandatory postnatal consultations take place at the following time intervals:

1) 0-30 days after delivery: the mother is expected to come with her newborn infant to the health center for physical examination of herself and the child;

2) 30-60 days after delivery: the mother is expected to come for the education session;

3) 90-120 days after delivery: the mother is expected to bring her child with her for a physical examination.

4.5 Food distribution

The distribution of food aid commodities to the MCH beneficiaries of the World Vision program occurs on a monthly basis at special distribution points. Beneficiaries from several localities are often scheduled to receive their food rations at a central distribution point on the same day. There is a total of 10 central food distribution points covering 50 Rally Posts in the area included in the evaluation (including preventive and recuperative program communities). Unlike at the Mothers' Clubs, a beneficiary can designate another family member to collect the food ration by handing over the beneficiary card to this person.

The beneficiary households receive both direct and indirect rations. The amounts and commodities vary with respect to the beneficiary category (see Table 1). Even if a household has two direct beneficiaries participating in the program, only one indirect ration is provided.

Table 1: Composition of direct and indirect food rations, per beneficiary category

	Children 6-23 months of age		**Pregnant and lactating women**	
Type of commodity	Direct ration (quantity in kg)	Indirect ration (quantity in kg)	Direct ration (quantity in kg)	Indirect ration (quantity in kg)
WSB	8			
SFB		10	5	5
Lentils		2.5	2	2
Vegetable oil	2		1.5	1.5

The sequence of activities at the food distribution points is as follows:

1) Eligibility of the beneficiary is verified by food monitors and health agents mainly based on the information in the beneficiary card. This card contains information about the beneficiaries (direct and indirect) and indicates the attendance by the beneficiary at the other MCH activities (i.e., Mothers' Clubs, Rally Posts, and pre- and postnatal consultations) that are mandatory to receive the food rations.

2) Once the eligibility of the beneficiary is verified, they proceed to collect the different rations, based on their beneficiary category. A team of trained beneficiaries assists the World Vision staff during the distribution and is responsible for opening food sacks, measuring out appropriate amounts of each of the commodities, and handing over the food to beneficiaries. Rations for women and child beneficiaries are distributed separately at the distribution point, even though the distribution of food rations for preventive and recuperative program communities can occur at the same distribution point.

3) Finally, once a ration has been received by a beneficiary (or the designee), the ration received and the card are checked by the World Vision food monitor. In some cases, the food monitors reweigh the ration to verify that the right amounts have been received by the beneficiary. Once this final check is complete, the food monitor signs the beneficiary card to indicate that the right ration has been delivered to that beneficiary.

The formative research showed that the food distribution points were the least conducive for carrying out BCC activities like education sessions since they were crowded, noisy and distracting. However, World Vision is planning to use the food distribution points for complementary BCC activities. Some possible activities include recipe demonstrations using the food aid commodities and distribution of recipe booklets containing recipes for improved complementary foods using food aid commodities and other local ingredients to enrich traditional recipes. This would re-emphasize the key messages regarding the use of enriched complementary foods to improve the quality of the diet of 6-23-month-old children.

4.6 Home visits

In addition to the MCH services mentioned above, the World Vision program also includes a system of home visits targeted to special beneficiaries. These home visits are carried out by health agents and *colvols*, and are targeted mainly to:

- Families with a severely malnourished child under 5 years of age identified at the Rally Post: These families are visited twice during the week following the identification and a third time after two weeks. The focus of the home visit is on identifying ways to recuperate the severely malnourished child.

- Mothers of newborn infants: These mothers are visited the week after delivery to counsel them about exclusive breastfeeding, to administer a vitamin A capsule to the mother, and to refer them to the postnatal consultations;

- Children with growth faltering during two months; and

- Mothers who failed to attend program activities (Mothers' Club or pre- or postnatal consultations or Rally Post) for two months.

The system of home visits to special beneficiaries existed previously, and was not modified as a result of the formative research study. However, the formative research did reveal that there was no counseling material available for health agents and *colvols* to use during their home visits. Additionally it was found that the staff was not trained on how to conduct individual counseling effectively. Thus, World Vision is planning to develop counseling cards that address each of the special situations described above, and that provide guidance for the health agent on how to structure the individual counseling during the home visit. Until these materials are developed, however, health agents are encouraged to use different steps of the learning activities designed for the Mothers' Clubs.

5. NEXT STEPS

5.1 Future research steps

The next *research* step will be a first round of operations research to collect information about how the program implementation works and how the package of interventions is delivered to the intended beneficiaries. The emphasis will be on: (1) assessing the effectiveness of implementation and identifying key operational constraints; (2) evaluating the quality of delivery of the intervention (for example, quality of attention provided by the local staff, attitude towards participants, quality of the food distributed, quality of the education provided, etc.); and (3) exploring the perceptions of different stakeholders toward the program with a special focus on their perception regarding its effectiveness and the quality of attention.

The implementation of the new BCC program started only in May 2003. Thus, the first round of operations research will be designed to be primarily a "troubleshooting" exercise, since data collection on the operational issues will commence just two months after the program was fully implemented. This operations research phase will be used to generate possible solutions to factors that impede smooth implementation of the program services. A second round of operations research, planned for 2004, will focus more on identifying programmatic factors that might contribute to differences (or lack thereof) in impact and cost-effectiveness between the preventive and recuperative program models at the end of the evaluation.

5.2 Future programmatic steps

The planning of additional or complementary programmatic activities will include consideration of programmatic actions that will support the BCC program and better enable program participants to adopt recommended infant and young child feeding practices. Some of these possible supporting programmatic actions are presented in the third column of the matrix in Annex 3, and can be implemented without making major adjustments and additions to the existing program structure. For example:

- Setting up fathers' clubs to reach fathers and sensitize them to issues, such as the need for lactating women to have support from them and the nutritional needs of young children.

- Setting up activities to engage other caregivers (like grandmothers) in the behavior change communications arm of the project. This will ensure that the entire household is targeted for improvements in knowledge, not just mothers, and also ensures that other caregivers feel valued by the program.

- Setting up activities to engage midwifes in the behavior change communications arm of the project. This will ensure that breastfeeding is initiated appropriately and that mothers receive support for exclusive breastfeeding.

- Increasing the intensity of the BCC program by having more than one Mothers' Club meeting a month.

Other options, which have been identified through the formative research but would require more technical assistance, collaboration with other organizations, and possibly more funding, include the following:

- Provision of microcredit programs to increase resource availability within households and communities, particularly through income generation projects that allow breastfeeding women to stay home and earn an income.

- Promotion of food-based interventions to increase the production and intake of micronutrient-rich animal foods and fresh fruits and vegetables; explore the possibility of using some preservation techniques such as solar drying to extend the life of micronutrient-rich fruits and vegetables beyond their season of high availability.

- Initiation and support of community childcare initiatives to assist working parents with their childcare responsibilities. This type of initiative may also become a source of income for those mothers who would run the day care centers. Other initiatives could include identifying a safe spot in markets where other adults could take care of young infants when mothers are attending to their markets. This would facilitate exclusive breastfeeding among market women with young infants.

- Use of effective mass media communication methods such as posters or radio messages that reach the entire community to support behavior change towards the recommended infant and young child feeding practices.

There are clearly other programming needs related to basic, underlying constraints that cannot be addressed in the short term through the current World Vision program structure. These involve the constraints of overall rural poverty, lack of water and sanitation facilities, poor roads, and a lack of public transportation. These are general community and rural development issues that need concerted support from the Haitian government and/or other multisectoral collaborators. They have been included in this list so as to ensure that these underlying constraints are recognized both in the process of future program development as well in later program evaluations.

6. REFLECTIONS ON THE PROCESS AND CONCLUSIONS

This report has described the process used to design a program to prevent undernutrition among children under 2 years of age. A few reflections regarding the resources required for this process and its effectiveness are shared in this concluding section.

Duration of research and development phases: The entire process from planning to full implementation of the program took approximately one year. Given the various steps of research and development, this is, in fact, not an unduly long period of time. The research phase was expedited because the research team worked full-time on conducting the formative research and analyzing the data from the study. The research team worked closely with World Vision staff in the development phase, which itself was aided considerably by the availability of well-developed materials for communication and training from Freedom from Hunger that could be adapted to the World Vision programmatic needs. Our experience suggests that a program planning process that involves all the research and planning steps described here, as well as the de novo development of a full set of communication and training materials, would take considerably longer if it was conducted primarily by program staff involved in the daily management and administration of such a complex program.

Technical and human resources: The program planning process was facilitated by a team of IFPRI-Cornell researchers who were not directly involved in the day-to-day running of World Vision program activities, and therefore were able to devote a large amount of time to the research and program development activities. The research team consisted of a full-time postdoctoral researcher, assisted by a full-time data collection staff member, a quarter-time postdoctoral researcher, and two other senior researchers who had considerable program planning experience. The team was experienced in the use of the formative research methods and in the analysis of the data from the formative research process, thus facilitating the overall research process. These human and technical resources are not usually available in most program contexts, and although research consultants can be hired to conduct formative research, the cost of hiring such personnel is high and would need to be built into program planning budgets in advance.

Timing of the program planning process: The program planning process described here was undertaken *after* World Vision's five-year program cycle had been established and, as such, was limited by the lack of flexibility to include interventions that were outside of the programmatic mandate described in the five-year plan. However, the process itself is generalizable and could be used at the proposal stage to plan future program funding cycles. This will help ensure that constraints to behavior change are addressed through appropriate programmatic interventions, even if these may be outside of the usual scope of activity of the implementing agency.

Programs of the kind described in this report are usually expected to start implementation a few months after funding is received from donor agencies. This leaves little time and limited resources to carry out the type of research and development activities undertaken by our team in collaboration with World Vision. We feel, however, that these preparatory activities are essential for the design of effective interventions. The research process, in particular, is essential to ensure that the BCC strategy addresses practices that are amenable to change and that other

program components are put in place to help relieve some of the identified constraints to behavior change.

In conclusion, we highly recommend the use of a systematic research and development process such as the one described here for program planning. To facilitate this process, however, we suggest that program planners carefully assess the human, technical, and time resources required to implement these activities and factor them in their funding request. The rewards in terms of impact and cost-effectiveness of carefully designed programs, which effectively address the specific needs of its targeted population, should largely compensate for these initial investments.

REFERENCES

Allen, L. H. "Nutritional Influences in Linear Growth." *European Journal of Clinical Nutrition* 48 (1994) (Suppl. 1): S75-S89.

Caulfield, L. E., S. L. Huffman, and E. G. Piwoz. *Interventions to Improve Complementary Food Intakes of Six-to-Twelve-Month-Old Infants in Developing Countries. Impact on Growth, Prevalence of Malnutrition and Potential Contribution to Child Survival*. Linkages Project. Washington, D.C.: Academy for Educational Development, 1999.

Dewey, K. G., and K. H. Brown. "Update on Technical Issues Concerning Complementary Feeding of Young Children in Developing Countries and Implications for Intervention Programs." *Food and Nutrition Bulletin* 24 (2003) (1): 5-28.

EMMUS-II (Enquête Mortalité Morbidité et Utilisation des Services) 1994/95. Institut Haitien de l'Enfance, Demographic and Health Surveys, Macro International Inc., Calverton, Md., U.S.A., 1995.

EMMUS-III (Enquête Mortalité Morbidité et Utilisation des Services) 2000. Ministère de la Santé Publique et de la Population (MSPP), Institut Haitien de l'Enfance, ORC Macro, Calverton, Md., U.S.A., 2001.

Loechl, C., P. Menon, G. Pelto, and M. Ruel. *Behavior Change Communication to Improve Infant and Young Child Feeding Practices in Rural Haiti: Training and Communication Materials.* A report submitted to the Food and Nutrition Technical Assistance Project, Academy for Educational Development, Washington, D.C., 2003.

Lutter, C. K., J. O. Mora, J.-P. Habicht, K. M. Rasmussen, D. S. Robson, and M. G. Herrera. "Age-Specific Responsiveness of Weight and Length to Nutritional Supplementation." *American Journal of Clinical Nutrition* 51 (1990) (3): 359-64.

Menon, Purnima, Marie Ruel, Gretel Pelto, and Jean-Pierre Habicht. *Review of Health and Nutrition Education Messages and Delivery System Currently Used in Haiti, and Recommendations for Further Research.* A report submitted to the Food and Nutrition Technical Assistance Project, Academy for Educational Development, Washington, D.C., 2001.

Menon, Purnima, Marie Ruel, Gretel Pelto, Yves-Francois Pierre, Elisabeth Metellus, and Arsene Ferrus. *A Qualitative Study of the Patterns of Infant Feeding and Care in the Hinche Area of Plateau Central*. A report submitted to the Food and Nutrition Technical Assistance Project, Academy for Educational Development, Washington, D.C., 2002a.

Menon, Purnima, Cornelia Loechl, Gretel Pelto, and Marie Ruel. *Development of a Behavior Change Communications Program to Prevent Malnutrition in the Central Plateau of Haiti: Results and Challenges from a Formative Research Study.* A report submitted to the Food and Nutrition Technical Assistance Project, Academy for Educational Development, Washington, D.C., 2002b.

PAHO/WHO (Pan American Health Organization/World Health Organization). *Guiding Principles for Complementary Feeding of the Breastfed Child*. Pan American Health Organization/World Health Organization, Washington, D.C., 2003.

Ruel, M. T. "The Natural History of Growth Failure: Importance of Intrauterine and Postnatal Periods." In *Nutrition and Growth*, edited by R. Martorell and F. Haschke, 123-158. Nestlé Nutrition Workshop Series, Pediatric Program, Vol. 47. Philadelphia: Nestec Ltd., Vevey/Lippincott Williams & Wilkins, 2001.

Rivera, J. A., and J.-P. Habicht. "The Recovery of Guatemalan Children with Mild to Moderate Wasting: Factors Enhancing the Impact of Supplementary Feeding." *American Journal of Public Health* 86 (1996) (10): 1430-1434.

Rivera, J. A., and J.-P. Habicht. "Effect of Supplementary Feeding on the Prevention of Mild to Moderate Wasting in Conditions of Endemic Malnutrition." *Bulletin of the World Health Organization* 80 (2002) (12): 926-32.

Schroeder, D. G., R. Martorell, J. A. Rivera, M. T. Ruel, and J.-P. Habicht. "Age Differences in the Impact of Nutritional Supplementation on Growth." *Journal of Nutrition* 125 (1995): 1051S-1059S.

Vella, Jane. *Learning to Listen, Learning to Teach: The Power of Dialogue in Educating Adults.* San Francisco, Calif.: Jossey-Bass, 2002.

World Vision-Haiti. *Development Activity Program.* Proposal submitted to the U.S. Agency for International Development (USAID) Mission, April 23, 2001.

ANNEXES

1. **Summary of guiding principles on infant and young child feeding**
2. **Infant and child feeding practices in Haiti compared to best practices, and constraints and opportunities for behavior change in Central Plateau (reproduced from: Menon et al. 2002b)**
3. **Identification of programmatic options to address the constraints to infant feeding, and to support facilitating factors**
4. **BCC strategy matrix for a BCC program to prevent malnutrition among children between 0-24 months**
5. **Existing and newly designed messages**
6. **Modification of messages following pretest**
7. **Organizational structure of the program**
8. **The key principles of adult learning**
9. **Schedules of learning sessions and topics at Mothers' Clubs**
10. **Schedules of learning sessions and topics at prenatal and postnatal consultations**

1. Summary of guiding principles on infant and young child feeding

1. **DURATION OF EXCLUSIVE BREASTFEEDING AND AGE OF INTRODUCTION OF COMPLEMENTARY FOODS.** Practice exclusive breastfeeding from birth to 6 months of age, and introduce complementary foods at 6 months of age (180 days) while continuing to breastfeed.
2. **MAINTENANCE OF BREASTFEEDING.** Continue frequent, on-demand breastfeeding until 2 years of age or beyond.
3. **RESPONSIVE FEEDING.** Practice responsive feeding, applying the principles of psychosocial care. Specifically, a) feed infants directly and assist older children when they feed themselves, being sensitive to their hunger and satiety cues; b) feed slowly and patiently, and encourage children to eat, but do not force them; c) if children refuse many foods, experiment with different food combinations, tastes, textures, and methods of encouragement; e) minimize distractions during meals if the child loses interest easily; f) remember that feeding times are periods of learning and love—talk to children during feeding, with eye to eye contact.
4. **SAFE PREPARATION AND STORAGE OF COMPLEMENTARY FOODS.** Practice good hygiene and proper food handling by a) washing caregivers' and children's hands before food preparation and eating, b) storing foods safely and serving foods immediately after preparation, c) using clean utensils to prepare and serve food, d) using clean cups and bowls when feeding children, and e) avoiding the use of feeding bottles, which are difficult to keep clean.
5. **AMOUNT OF COMPLEMENTARY FOOD NEEDED.** Start at 6 months of age with small amounts of food and increase the quantity as the child gets older, while maintaining frequent breastfeeding. The energy needs from complementary foods for infants with "average" breast milk intake in developing countries are approximately 200 kcal per day at 6-8 months of age, 300 kcal per day at 9-11 months of age, and 550 kcal per day at 12-23 months of age. In industrialized countries these estimates differ somewhat (130, 310, and 580 kcal/d at 6-8, 9-11, and 12-23 months, respectively) because of differences in average breast milk intake.
6. **FOOD CONSISTENCY.** Gradually increase food consistency and variety as the infant gets older, adapting to the infant's requirements and abilities. Infants can eat pureed, mashed, and semi-solid foods beginning at 6 months. By 8 months most infants can also eat "finger foods" (snacks that can be eaten by children alone). By 12 months, most children can eat the same types of foods as consumed by the rest of the family (keeping in mind the need for nutrient-dense foods, as explained in #8 below). Avoid foods that may cause choking (i.e., items that have a shape and/or consistency that may cause them to become lodged in the trachea, such as nuts, grapes, raw carrots).
7. **MEAL FREQUENCY AND ENERGY DENSITY**. Increase the number of times that the child is fed complementary foods as he/she gets older. The appropriate number of feedings depends on the energy density of the local foods and the usual amounts consumed at each feeding. For the average healthy breastfed infant, meals of complementary foods should be provided 2-3 times per day at 6-8 months of age and 3-4 times per day at 9-11 and 12-23 months of age, with additional nutritious snacks (such as a piece of fruit or bread or chapatti with nut paste) offered 1-2 times per day, as desired. Snacks are defined as foods eaten between meals—usually self-fed, convenient and easy to prepare. If energy density or amount of food per meal is low, or the child is no longer breastfed, more frequent meals may be required.
8. **NUTRIENT CONTENT OF COMPLEMENTARY FOODS.** Feed a variety of foods to ensure that nutrient needs are met. Meat, poultry, fish, or eggs should be eaten daily, or as often as possible. Vegetarian diets cannot meet nutrient needs at this age unless nutrient supplements or fortified products are used (see #9 below). Vitamin A-rich fruits and vegetables should be eaten daily. Provide diets with adequate fat content. Avoid giving drinks with low nutrient value, such as tea, coffee, and sugary drinks such as soda. Limit the amount of juice offered so as to avoid displacing more nutrient-rich foods.
9. **USE OF VITAMIN-MINERAL SUPPLEMENTS OR FORTIFIED PRODUCTS FOR INFANT AND MOTHER.** Use fortified complementary foods or vitamin-mineral supplements for the infant, as needed. In some populations, breastfeeding mothers may also need vitamin-mineral supplements or fortified products, both for their own health and to ensure normal concentrations of certain nutrients (particularly vitamins) in their breast milk. [Such products may also be beneficial for pre-pregnant and pregnant women.]
10. **FEEDING DURING AND AFTER ILLNESS.** Increase fluid intake during illness, including more frequent breastfeeding, and encourage the child to eat soft, varied, appetizing, favorite foods. After illness, give food more often than usual and encourage the child to eat more.

Source: PAHO/WHO 2003.

2. Infant and child feeding practices in Haiti compared to best practices, and constraints and opportunities for behavior change in Central Plateau (reproduced from: Menon et al. 2002b)

Goals	Practices to promote	Practices in Haiti	Facilitating conditions for behavior change	Issues that may affect capacity for behavior change
A. INFANT FEEDING FROM 0-5 MONTHS OF AGE				
Exclusive Breastfeeding (BF)				
➢ **Ensure exclusive BF** ➢ **Prevent bacterial contamination**	➢ Early initiation of exclusive BF (EBF) ➢ Feeding of colostrum ➢ BF on demand ➢ Avoidance of pre- and post-lacteal feeds ➢ Using expressed breast milk if needed ➢ Avoidance of baby-bottles	*Positive:* ➢ BF widely practiced ➢ Reported to be mostly on demand *Non optimal*: ➢ Pre-lacteals and post-lacteal liquids and gruels widely used ➢ Complementary liquids and foods introduced at a very young age ➢ Widespread use of baby bottles *Not enough information:* ➢ Timing of initiation of BF ➢ Colostrum use	❖ Experienced, successful positive deviant mothers (who EBF) exist in communities ❖ Positive deviant mothers had received information from health agents, media, health center staff ❖ EBF moms report it is cheaper to EBF and child is healthier ❖ No objection to use of expressed breast milk – some mothers do it; but training needed	➢ Water-based liquids and teas given to treat colic (*gaz*) ➢ Gruels given because mothers need to leave home for work or other activities ➢ Mothers' time and employment constraints ➢ Mothers feel weak and depleted when EBF ➢ Concept of *let cho* (prevents mothers from breastfeeding, but seems to be only in the short term) ➢ Use of expressed breast milk is rare, milk expression unknown in some areas
B. FEEDING PRACTICES FOR INFANTS AND YOUNG CHILDREN 6-23 MONTHS OF AGE				
Continued breastfeeding				
➢ **Ensure sustained, frequent, on demand BF up to 24 months of age and beyond**	➢ Continue to BF frequently and on demand ➢ Using expressed breast milk if needed ➢ Avoidance of baby-bottles	*Positive:* ➢ Mothers traditionally continue to BF up to 24 months of age *Non-optimal:* ➢ Widespread use of baby bottles *Not enough information:* ➢ Mothers may not always BF on demand because of need to leave home for work or other tasks ➢ Children whose mothers are frequently absent may not receive sufficient nutrients from breast milk	❖ No objection to expression of breast milk, but training needed	No need for behavior change, but continue promotion of continued BF up to 24 months and beyond *Potential constraints to frequent, on demand BF*: ➢ Mothers do need to leave home to work and/or go to markets ➢ Milk expression rarely practiced, unknown in some areas

Goals	Practices to promote	Practices in Haiti	Facilitating conditions for behavior change	Issues that may affect capacity for behavior change
Complementary Foods				
➢ **Provide foods to complement breast milk and to allow adequate intake of energy and micronutrients**	➢ Feed child special energy- and nutrient-dense foods of appropriate texture and consistency for age ➢ From 6 months on, gradually increase amounts and quantity of foods as child gets older ➢ Increase number of times child is fed CF as he/she gets older (at least 2-3 times/d for 6-8 mo old; 3-4 times/d for 9-24 mo old) ➢ Feed a variety of foods (gradually increase variety with age); animal foods should be eaten daily, or as often as possible	*Non optimal:* ➢ Complementary foods (CF) of low energy and very low nutrient-density ➢ Variety of foods seems low; animal foods consumed infrequently and in small amounts; low intake of vitamin A fruits and vegetables ➢ Frequency of feeding is low (2-3 times/d) and does not seem to increase with age ➢ Evening meal not fed to young children ➢ No "special" complementary food for child; gruels are consumed by all family members	❖ No cultural barriers to feeding young children animal foods ❖ Mothers know that eggs, liver are good for child ❖ Mothers usually feed child when they are present ❖ Mothers leave prepared food for child when they have to leave ❖ Good recognition of importance of fluid replacement during diarrhea	➢ Lack of availability and access to food, especially animal foods and micronutrient-rich fruits and vegetables ➢ Overall poverty, lack of economic resources ➢ Poor access to water, sanitation, health services ➢ Time constraints of caregivers to prepare "special foods" ➢ Belief that evening meal causes indigestion ➢ Lack of recognition of importance of high feeding frequency for young children ➢ Belief that children are ready for family foods and family meal patterns by 12 months of age ➢ Some cultural barriers to feeding young children specific fruits/vegetables
Feeding during diarrhea				
➢ **Continue to BF and feed CF to child during diarrhea; ensure fluid replacement**	➢ Increase fluid intake during illness, including more frequent breastfeeding, and encourage the child to eat soft, varied, appetizing, favorite foods ➢ After illness, give food more often than usual and encourage the child to eat more	*Positive practices:* ➢ Mothers continue to BF and give liquids when child has diarrhea *Non-optimal practices* ➢ Mothers reduce feeding of CF during diarrhea	❖ Knowledge about fluid replacement can be used to introduce issues of encouraging consumption of food during and after an episode of illness and providing special foods for recuperation	

Goals	Practices to promote	Practices in Haiti	Facilitating conditions for behavior change	Issues that may affect capacity for behavior change
Responsive feeding				
➢ **Practice responsive feeding, applying the principles of psychosocial care**	➢ Feeding with a balance between giving assistance and encouraging self feeding, as appropriate to the child's level of development ➢ Feeding with positive verbal encouragement, without verbal or physical coercion ➢ Feeding with age-appropriate, as well as culturally appropriate, eating utensils ➢ Feeding in a protected and comfortable environment ➢ Feeding in response to early hunger cues ➢ Feeding by an individual with whom the child has a positive emotional relationships and who is aware of and sensitive to the child's individual characteristics, including his or her changing physical and emotional states	*Positive practices* ➢ Child is usually fed in a separate bowl or plate rather than common plate ➢ Fathers seem involved in childcare and feeding *Insufficient information at this point on:* Psychosocial care (needs to be assessed through observations, which was beyond the scope of the present study)	❖ Some aspects of responsive feeding are already practiced (e.g., feeding in a separate bowl, involving fathers in care)	

3. Identification of programmatic options to address the constraints to infant feeding, and to support facilitating factors

Constraints/facilitators to appropriate infant feeding:	Program options within current structure and delivery system: (BCC, food donations and other interventions delivered by World Vision program at Rally Posts, food delivery points and Mothers' Clubs)	Program options that will require NEW program structure or complementary interventions:
A. INFANT FEEDING FROM 0-5 MONTHS OF AGE		
Exclusive breastfeeding		
Factors that constrain exclusive breastfeeding		
➢ Water-based liquids and teas given to treat colic (*gaz*)	➢ BCC program: ensuring women are given enough knowledge and confidence about dealing with infant colic	
➢ Gruels given because mothers need to leave home for work (economic, reasons) or other activities (mothers have multiple household responsibilities; time constraints)	➢ BCC program: training mothers in the use of expressed breast milk ➢ Food aid component (could aid in delaying extremely early resumption of work outside home)	➢ Microcredit programs targeting women and increasing their potential involvement in income-generating activities at (or close to) home ➢ Long term poverty reduction strategies needed ➢ Public transportation and road improvement projects ➢ Childcare support
➢ Mothers are concerned about feeling too weak and depleted if they EBF	➢ BCC program: can address need to replace fluids frequently when EBF ➢ Food aid component can possibly alleviate weakness due to poor quality diet and lack of food	➢ Fathers' Clubs: ensure that fathers are sensitized to the need for EBF women to be supported. ➢ Agriculture production activities to increase availability/access to food
➢ Concept of *let cho* (prevents mothers from breastfeeding, but seems to be only in the short term)	➢ BCC program	
➢ Use of expressed breast milk is rare, milk expression unknown in some areas	➢ BCC program: ensuring adequate training in the use and appropriate storage of expressed breast milk	
Factors that facilitate exclusive breastfeeding		
➢ Experienced, successful positive deviant mothers (who EBF) exist in communities	➢ BCC program: use mothers' clubs as support groups to encourage EBF	
➢ Positive deviant mothers had received information from health agents, media, health center staff	➢ BCC program: ensure that mothers receive the same information from different sources	

Constraints/facilitators to appropriate infant feeding:	Program options within current structure and delivery system: (BCC, food donations and other interventions delivered by World Vision program at Rally Posts, food delivery points and Mothers' Clubs)	Program options that will require NEW program structure or complementary interventions:
➢ EBF moms report it is cheaper to EBF and child is healthier	➢ BCC program: use benefits of EBF on household medical expenses as a motivator	
B. FEEDING PRACTICES FOR INFANT AND YOUNG CHILDREN 6-23 MONTHS OF AGE		
Continued breastfeeding		
Factors that constrain continued breastfeeding		
➢ Mothers need to leave home to go to work and/or markets	➢ BCC program: Promote and encourage continued and sustained breast feeding up to 24 months of age	➢ Microcredit programs targeting women and increasing their potential involvement in income-generating activities at (or close to) home ➢ Long term poverty reduction strategies needed ➢ Public transportation and road improvement projects ➢ Childcare support
➢ Expression of breast milk rarely practiced	➢ BCC program: ensuring adequate training in the use and appropriate storage of expressed breast milk	
Factors that facilitate continued breastfeeding		
➢ Mothers traditionally breastfeed up to 18 or 24 months	➢ BCC program: Promote and encourage continued and sustained breast feeding up to 24 months of age	
Complementary foods		
Factors that constrain feeding of optimal complementary foods		
➢ Time constraints of caregivers to prepare "special foods"	➢ BCC Program: Promote easy to prepare, time efficient recipes and ideas for nutritious CF	➢ Need for public transport and road projects that can ensure that women spend more time commuting to place of work ➢ Engage other family members (grandmothers, fathers, etc.) in BCC program to provide more support to mothers
➢ Belief that evening meal causes indigestion	➢ BCC program: encourage feeding of at least gruels at night, rather than juices or teas	
➢ Lack of recognition of importance of high feeding frequency for young children	➢ BCC Program: ensure mothers are sensitized to higher feeding frequency needs of infants and young children	
➢ Belief that children are ready for family foods and family meal patterns by 12 months	➢ BCC program: Need to ensure that children 12-23 are given adequate attention and	

Constraints/facilitators to appropriate infant feeding:	Program options within current structure and delivery system: (BCC, food donations and other interventions delivered by World Vision program at Rally Posts, food delivery points and Mothers' Clubs)	Program options that will require NEW program structure or complementary interventions:
of age	appropriate foods (use brain development as a motivator	
➢ Some cultural barriers to feeding young children specific fruits/vegetables	➢ BCC program: encourage trials of small amounts of these foods	
➢ Lack of access to micronutrient rich foods, especially animal foods and micronutrient-rich fruits and vegetables	➢ BCC program: encourage use of small amounts of meat, liver or eggs for children ➢ Encourage consumption of goat milk (especially among goat owners)	➢ Livestock projects to increase access to animal source foods ➢ Livestock care projects to improve health of animals and milk production ➢ Home garden promotion; solar drying of fruits/vegetables ➢ Microcredit programs to facilitate income generation through livestock rearing ➢ Market interventions to encourage sale of small pieces of meat and liver
➢ Overall poverty, lack of economic resources	➢ Food aid component can help somewhat	➢ Overall community development projects and poverty reduction interventions
➢ Poor access to water, sanitation, health services		➢ Community development projects for improving water, sanitation, etc.
Factors that facilitate feeding of optimal complementary foods		
➢ No cultural barriers to feeding young children animal foods; and mothers are aware that eggs and liver are good for young child	➢ BCC program: encourage and support feeding of animal foods to young children	➢ Same as above (3 rows up): Livestock projects and market interventions to increase availability and access to animal source foods
➢ Mothers leave prepared food for child when they have to leave	➢ BCC program: encourage preparation of enriched recipes rather than traditional low nutrient density gruels/juices	
Feeding during diarrhea		
Factors that constrain optimal feeding during and after diarrhea		
➢ Feeding of CF during illness is decreased	➢ BCC program: encourage caregivers to continue attempts to feed children during illness ➢ BCC program: Stress the need for extra food and the use of enriched recipes when children	

Constraints/facilitators to appropriate infant feeding:	Program options within current structure and delivery system: (BCC, food donations and other interventions delivered by World Vision program at Rally Posts, food delivery points and Mothers' Clubs)	Program options that will require NEW program structure or complementary interventions:
	are recovering from illness	
Factors that facilitate optimal feeding during and after diarrhea		
➢ Good recognition of importance of fluid replacement during diarrhea	➢ BCC program: encourage caregivers to sustain fluid replacement with ORS and other safe fluids when child has diarrhea	➢ Community development projects for improving water quality and sanitation ➢ Ensuring availability of and access to ORS
Responsive Feeding		
Factors that could constrain responsive feeding		
➢ Mothers' time and workload constraints	➢ BCC program: Encourage mothers to entrust adult members and inform them about responsive feeding as well	
Factors that facilitate responsive feeding		
➢ Fathers seem involved in childcare and feeding		➢ Ensure that fathers are engaged in BCC program as well through Fathers' Clubs and sensitized to responsive feeding practices
➢ Mothers usually feed child when they are present	➢ BCC program: Encourage responsive feeding and encourage mothers to entrust adult members to feed child when possible	

4. BCC strategy matrix for a BCC program to prevent malnutrition among children between 0-24 months

Behaviors to promote	***Who* will messages be targeted to?**	***When* will messages be delivered?**	***Where* will communication be delivered ?**	***How* will communication be delivered ?**	***What* is needed to help with communication ?**
0-5 Months: Exclusive breastfeeding 1. Initiate breastfeeding immediately after the child is born 2. Give the child colostrum (and avoid *lòk*) 3. Breastfeed exclusively (avoid other liquids and foods) 4. Breastfeed frequently, on demand 5. Use expressed breast milk as needed (avoid other liquids and foods) 6. Use a cup and spoon to feed the infant expressed breast milk (avoid baby bottles) 7. Increase the frequency of breastfeeding when the infant is sick	Pregnant mothers Midwifes Grandmothers Health professionals in health centers (prenatal care) Lactating mothers Fathers Grandmothers	Pregnancy, before delivery At delivery First 1-2 months of lactation	➢ Pre- and postnatal consultations (can also be group education) ➢ Food distribution ➢ Mothers' Clubs ➢ Fathers' Clubs ➢ Markets	➢ Individual counseling at prenatal and postnatal consultation ➢ Group education of pregnant women at health centers (if they invite all pregnant women to attend on a particular day for the prenatal control) ➢ Discussion and problem solving related to breastfeeding at Mother's Clubs ➢ Discussions on support needs with fathers at Father's Clubs ➢ Home visits	➢ *Training of prenatal and postnatal counseling staff* (health staff as well as midwives) in communication methods and content of practices to encourage ➢ *Training of health agents and colvols* in group discussion and problem solving methods ➢ *Provision of resource materials for communication* (counseling cards, flip charts, other visual material) ➢ *Make attendance at pre- and postnatal consultation and mothers' clubs mandatory* in order to receive food
6-8 Months Complementary feeding and continued breastfeeding 1. Continue to breastfeed on demand and use expressed breast milk as necessary 2. Gradually introduce enriched porridges, gruels and special foods (enriched using beans, eggs, fish,	Lactating mothers Fathers Grandmothers	First 2-3 months of lactation	➢ Rally Posts ➢ Food distribution centers ➢ Mothers' Clubs ➢ Father's Clubs	➢ Group education at Rally Posts ➢ Recipe demonstrations at Food Distribution Points	➢ *Training of agents de santé and colvols* in group discussion and problem solving methods ➢ *Training of health*

Behaviors to promote	***Who* will messages be targeted to?**	***When* will messages be delivered?**	***Where* will communication be delivered ?**	***How* will communication be delivered ?**	***What* is needed to help with communication ?**
breast milk, milk, pumpkin, etc.) 3. Feed the infant enriched foods 2-3 times per day 4. Increase the quantity of enriched foods as the child grows older 5. Feed nutritious snacks (like *cham cham*, fruits, peanut butter) 1-2 times per day 6. Use a cup and spoon to feed the infant expressed breast milk and other liquids (avoid baby bottles) 7. Feed infants directly, and feed slowly and patiently. 8. Encourage children to eat, but do not force them; if children refuse many foods, experiment with different food combinations, tastes, textures and positive methods of encouragement 9. Minimize distractions during meals 10. Talk to children during feeding, with eye to eye contact 11. Increase frequency of breastfeeding and liquids when the infant is ill 12. Feed the child his or her favorite foods when ill 13. Increase the frequency of feeding and feed more enriched foods when the infant is convalescing after an illness	Lactating mothers Fathers Grandmothers	During 3-9 months of lactation		➢ Recipe trials at Mothers' Clubs ➢ Group discussions and problem solving at Mother's Clubs ➢ Group discussions with fathers at Father's Clubs? ➢ Home visits	*agents and colvols in recipe trials/ demonstrations* to be implemented at food distribution points and mothers' clubs ➢ *Provision of resource materials for communication* (counseling cards, flip charts, etc.) ➢ *Make attendance at postnatal consultation and mothers' clubs mandatory* in order to receive food
9-23 Months: Complementary feeding and continued breastfeeding 1. Continue to breastfeed on demand and use expressed breast milk as necessary 2. Continue to feed enriched porridges, gruels and special foods (enriched	Lactating mothers Fathers Grandmothers	9 months onwards	➢ Food distribution centers ➢ Rally Posts ➢ Mothers' Clubs ➢ Father's Clubs	➢ Group education at Rally Posts ➢ Recipe demonstrations at Food Distribution	➢ *Training of health agents and colvols* in group discussion and problem solving methods

Behaviors to promote	***Who* will messages be targeted to?**	***When* will messages be delivered?**	***Where* will communication be delivered ?**	***How* will communication be delivered ?**	***What* is needed to help with communication ?**
using beans, eggs, fish, breast milk, milk, pumpkin, etc.) 3. Increase the variety of foods fed to the infant by adding other family foods to the child's diet 4. Feed the infant enriched porridges/gruels or special foods 3-4 times per day 5. Increase the quantity of food as the child grows older 6. Feed nutritious snacks (like cham cham, fruits, peanut butter) 1-2 times per day 7. Use a cup and spoon to feed the infant expressed breast milk and other liquids (avoid baby bottles) 8. 9-11 months: Feed infants directly, and feed slowly and patiently 9. 12-23 months: Assist and supervise feeding to ensure adequate intake, and feed slowly and patiently 10. Encourage children to eat, but do not force them; if children refuse many foods, experiment with different food combinations, tastes, textures and positive methods of encouragement 11. Minimize distractions during meals 12. Talk to children during feeding, with eye to eye contact 13. Increase frequency of breastfeeding and liquids when the infant is ill 14. Feed the child his or her favorite foods when ill 15. Increase the frequency of feeding and feed more enriched foods when the infant is convalescing after an				Points ➢ Recipe trials at Mothers' Clubs ➢ Group discussions and problem solving at Mother's Clubs ➢ Group discussions with fathers at Father's Clubs? ➢ Group education at Community Health sessions ➢ Home visits	➢ *Training of health agents and colvols in recipe trials/ demonstrations* to be implemented at food distribution points ➢ *Provision of resource materials for communication* (counseling cards, flip charts, etc.) ➢ *Make attendance at postnatal consultation, Rally Posts and Mothers' Clubs mandatory* in order to receive food

Behaviors to promote	***Who* will messages be targeted to?**	***When* will messages be delivered?**	***Where* will communication be delivered ?**	***How* will communication be delivered ?**	***What* is needed to help with communication ?**
illness					
All the above behaviors + overall attention and focus on the under-two child	Entire community		➢ Community meetings ➢ Radio ➢ Posters ➢ Other	➢ Sensitization to various practices at the community meetings ➢ Radio messages ➢ Community posters	➢ Utilization of community leaders and pastors for sensitization in churches and at community meetings? ➢ Design of effective posters ➢ Identification of key venues to display posters ➢ Design of effective radio messages/ stories/ songs/dialogues ➢ Identification of key radio stations and key times during the day to broadcast messages

5. Existing and newly designed messages

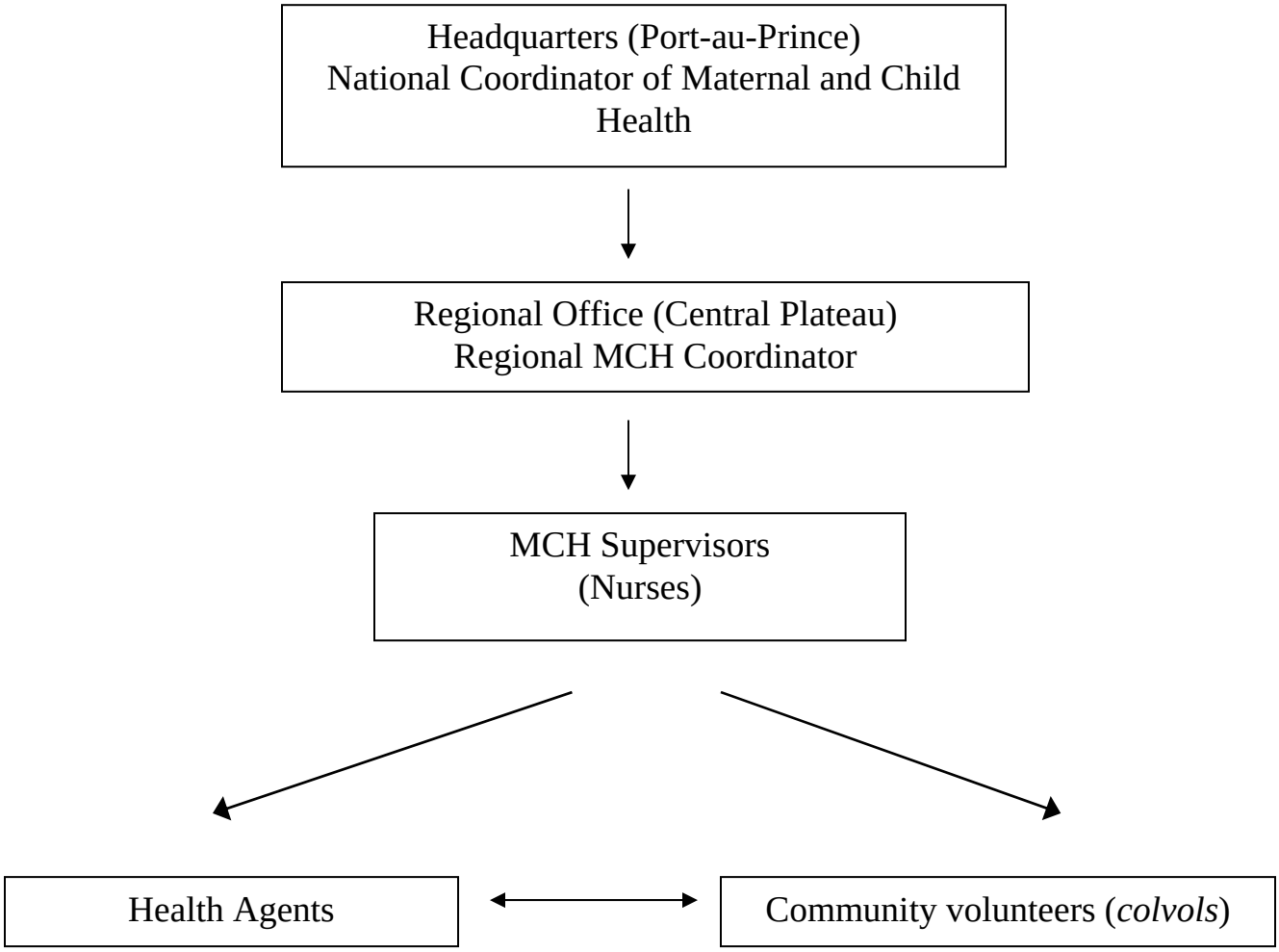
Age group	Messages already in use	New messages or modified existing messages
0-5 months	➢ Start breastfeeding immediately after delivery. ➢ The first milk is the best "lòk" for newborn babies. ➢ Breastfeed babies whenever s/he wants. ➢ Exclusively breastfeed children are healthier, and breast milk is free. ➢ Give breast milk only, no other foods or liquids. ➢ We must get rid of the bottle in order to protect our children against diarrhea. ➢ A sick child needs to be breastfed more often.	➢ If the mother has to leave home she can express breast milk so that another person can give this to the child with a little spoon when she is away. ➢ Not only a crying child wants to breastfeed. ➢ To keep the baby from having colic ("gaz"), hold him and tap his back each time he has finished breastfeeding. ➢ To avoid fatigue, you must drink a lot of water while you are breastfeeding. ➢ A mother should be assisted until the baby is 6 months old (stay "ti nouris"). That means, she should continue to receive during 6 months the same benefits and support her family normally provides when she has just given birth. ➢ To get rid of the bottle, use a cup instead, it is easier to clean and it does not hold germs.

Age group	Messages already in use	New messages or modified existing messages
6-8 months	➢ Continue on-demand breastfeeding. Breastfeed first, then give other foods to the child. ➢ Children 6-8 months need to be introduced progressively to other nutritious foods in addition to breast milk to continue to grow well. ➢ Introduce new foods one at a time. ➢ Prepare meals for the child with little or no salt, soak dried fish in water before using it. ➢ Begin offering mashed, pureed or soft foods 2-3 times each day. The stomach of an infant is small, that's why s/he cannot eat a lot at one time. S/he has to eat several times a day. ➢ Give liquids to the child with a little spoon out of a clean cup that is used for her/him only. ➢ Talk to the children and encourage them to eat while feeding them. ➢ When children are sick, breastfeed them more often and increase liquids. ➢ After illness try to feed children more often and more than usual each time. ➢ After illness, offer the children appetizing and favorite foods, and encourage them to eat.	➢ As the child gets older, give her/him more food at each feeding so that s/he may get stronger. ➢ Different stages require different foods.
9-23 months	➢ Continue to breastfeed for 24 months and beyond — feed other foods first and then breastfeed. ➢ Provide a variety of foods. ➢ Give children vegetables and yellow fruits rich in vitamin A and other nutrients such as: mango, yellow pumpkin, green leafy vegetables (watercress, different leaves like "*lyann panyen*" and "*malanga*", spinach, etc.) along with liver, eggs and milk to help them develop well.	➢ Pay attention that the child eats 3-4 times a day special meals containing a variety of different foods so that the brain develops well and the child will be able to succeed at school. ➢ Feed children at night, so they may get stronger – this is not going to inflate them. ➢ Even when a child can walk s/he is still at risk.

6. Modification of messages following pretest

Age group	Messages tested	Modified message
0-5 months	If the mother has to leave home, she can express breast milk so that another person can give this to the child with a little spoon when she is away.	If the mother has to leave home, she can express breast milk *in a cup* so that another person can give it to the child with a little spoon when she is away. *[To avoid that they express it in a bottle]*
	Not only a crying child wants to breastfeed.	Start breastfeeding when the baby is beginning to fuss, moving the lips or sucking fingers, before it starts to cry. It is not only when a child cries that s/he needs to breastfeed. *[Mothers need more details to understand]*
	To avoid fatigue, you must drink a lot of water while you are breastfeeding.	While you are breastfeeding you must drink lots of water so that you don't get tired. *[This wording seems easier to understand]*
	To get rid of the bottle, use a cup instead, it is easier to clean and it does not hold germs.	Do not use the bottle, use a cup instead, it is easier to clean and it does not hold germs *[This wording seems easier to understand]*
9-23 months	Pay attention that the child eats 3-4 times a day special meals containing a variety of different foods so that the brain develops well and the child will be able to succeed at school.	Feed children special meals 3-4 times per day so they will learn well in school when they are older. *[It was too long]*
	Feed children at night, so they may get stronger – this is not going to inflate them.	Feed children special foods such as enriched gruel, etc. in the *evening*, so they may get stronger – this is not going to inflate them. *[At night was considered too late, children are already sleeping; evening for them is around 6.00pm]*

7. Organizational structure of the program



8. The key principles of adult learning

The key principles of Adult Learning (Vella, J. 2002)

- Respect: Ensuring that the learner feels respected and feels like an equal.
- Affirmation: Ensuring that the learner receives praise for even small attempts.
- Relevance: Recognizing that the learner learns best by drawing on his/her own knowledge and experience. Also, that learning must meet the real-life needs of the adult—jobs, family, etc.
- Dialogue: It is important for learning that the learner is encouraged to enter into a dialogue with the teacher and with other learners
- Engagement: The learner must get involved through discussion, small groups, and learning from peers.
- Immediacy: The learner must be able to apply the new learning immediately.
- (20/40/80 Rule): The learner remembers more when visuals are used to support the verbal; adults remember best when they practice the new skill. We remember 20 percent of what we hear, 40 percent of what we hear and see, and 80 percent of what we hear, see and do.
- Affective, psychomotor and cognitive learning: Learning should involve feelings and doing as well as thinking.
- Safety: The learner needs to feel that their ideas and contributions will be valued—that they will not be ridiculed or belittled.

9. Schedules of learning sessions and topics at Mothers' Clubs

a) Schedule of learning sessions at Mothers' Clubs (for pregnant and lactating women)

Month of Pregnancy	Mothers' Clubs for pregnant women
5	Other topics: Diet for pregnant women
6	Other topics: Dangerous signs during pregnancy
7	Other topics: Preparation of child delivery
8	Session 1 Importance of breastfeeding (initiation of breastfeeding, exclusive breastfeeding, continue breastfeeding until 2 years of age or beyond) Discouragement of bottle use Comparison of recommendations with local beliefs and practices
9	Session 2 Initiation of breastfeeding, importance of colostrum Exclusive breastfeeding until 6 months Position and attachment of the baby during feeding, frequency of breastfeeding
Child age (months)	**Mothers' Clubs for lactating women**
1	Session 3 Sharing experience with exclusive breastfeeding Review of exclusive breastfeeding Review of position and attachment of the child during feeding, frequency of breastfeeding and care of nipples and breasts Expression of breast milk Drinking water while breastfeeding
2	Session 4 Sharing experiences related to drinking water while breastfeeding and expression of breast milk Sharing experience related to exclusive breastfeeding Discussing constraints/problems related to exclusive breastfeeding and offering solutions
3	Session 5 Exclusive breastfeeding and Lactational Amenorrhea Method (LAM)
4	Session 6 Introduction of complementary foods when children are about 6 months old Importance of continued breastfeeding until 2 years of age or beyond
5	Session 7 Overview on child development and feeding chart (for children 6-11 months of age: food consistency, participating in feeding, frequency, quantity of food) Learning how to eat Important information about the first food (in addition to breast milk) given to children Preparation of the next session: preparing nutritious foods
6	Session 8 Preparing nutritious foods/cooking session Tasting and discussion Repetition of learning how to eat Session 7 Preparation of the next session: preparing nutritious foods

b) Schedule of learning sessions at Mothers' Clubs (for mothers of 6-23 month old children)

Month in the program	Mothers of 6 to 23 months old children
1	Session 8 Preparing nutritious foods/cooking session Tasting and discussion Repetition of learning how to eat
2	Session 9 Repetition on child development and feeding chart (for children 0 to 11 months of age) Helping children to eat Feeding during and after illness Preparation of the next session: variety of food
3	Session 10 Sharing experience with one new feeding practice (related to helping children to eat) Variety of food Sharing experience with preparing nutritious foods at home
4	Session 11 Hygiene in food preparation, handling and storage – Diarrhea prevention Feeding during and after illness
5	Session 12 Child development and feeding chart (for children 12-23 months of age) Discussing food variety issues (special complementary foods, fruits and vegetables, vitamin A-rich foods, animal foods, evening meal) Preparing a creative way to communicate one feeding recommendation of the child development and feeding chart
6	Session 13 Causes of malnutrition Different types of malnutrition Recuperation of moderately malnourished children
7	Other topics: Diarrhea
8	Other topics: Immunization
9	Other topics: Hygiene
10	Other topics: Use of Moringa Oleifera
11	Other topics: HIV/AIDS
12	Other topics: Family Planning
13	Other topics: Home gardening
14	Session 12 Child development and feeding chart (for children 12-23 months of age) Discussing food variety issues (special complementary foods, fruits and vegetables, vitamin A-rich foods, animal foods, evening meal) Preparing a creative way to communicate one feeding recommendation of the child development and feeding chart
15	Other topics: HIV/AIDS
16	Other topics: Family Planning
17	Other topics, placement in schedule to be determined
18	Other topics, placement in schedule to be determined

10. Schedules of learning sessions and topics at prenatal and postnatal consultations

Month of pregnancy	**Prenatal Consultations**
5	Other topics: Dangerous signs during pregnancy
6	Other topics: Family Planning
7	Other topics: Breastfeeding
8	Other topics: Preparation of child delivery
9	Session 2, steps 2+5 Review of initiation of breastfeeding, position and attachment of the baby during feeding, frequency of feeding
Age of the infant	**Postnatal Consultations**
1	Other topics: Diet for lactating mothers
2	Session 3, step 2+5 Sharing experience with exclusive breastfeeding and offering solutions for related constraints/problems Expression of breast milk
3	Other topics: Family Planning (LAM)