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FOOD CONSUMPTION AND NUTRITION DIVISION

February 2005

FCND Discussion Paper 187

The Use of Operations Research as a Tool for Monitoring and Managing Food-Assisted Maternal/Child Health and Nutrition (MCHN) Programs: An Example from Haiti

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Abstract

This report describes the methods and results of an operations research undertaken to assess the effectiveness of World Vision (WV)'s food assisted maternal and child health and nutrition (MCHN) program in the Central Plateau region of Haiti. The research had three main objectives: (1) to assess the effectiveness of implementation and operations of the program relative to plans; (2) to assess the quality of delivery of the various services; and (3) to explore the perceptions of different stakeholders (i.e., beneficiaries and field implementers) regarding program operations and service delivery and the motivational factors that may affect staff's performance and job satisfaction. The overall goal was to identify constraints to effective operations; it was more important to identify and implement corrective actions that will ensure smooth implementation of the program and its various components. The report is directed to program managers, researchers, and development professionals who are interested in applying operations research methods to evaluate and strengthen similar MCHN programs with a food aid component in developing countries.

The operations research used a variety of qualitative and quantitative methods, including structured observations at different program delivery points, structured and semi-structured interviews with stakeholders, and a series of focus group discussions with the program staff. The following three main program service delivery points were included in the evaluation: (1) the Rally Posts (RPs) (n = 19), where health education, growth monitoring and promotion (GMP), and other preventive health-care services are provided, and where program beneficiaries are identified; (2) the Mothers' Clubs (MCs) (n = 20), where smaller groups of participants gather to discuss health and nutrition topics in the context of the program's behavior change and communication (BCC) strategy; and (3) the Food Distribution Points (FDPs) (n = 10), where beneficiaries receive their monthly food rations.

Key Findings

The Rally Posts (RPs). Our assessment suggests that the RPs are generally operating in accordance with the program's implementation plan. However, some problems were encountered, which relate primarily to organizational and logistical issues such as crowding, a high participant/staff ratio, long waiting times, bottlenecks at registration, and the lack of supplies and transport for staff. In terms of quality of services, the areas that could benefit from some improvement are the general education sessions and the communication between health staff and caregivers in the context of the GMP activities. In addition, every effort should be made to minimize measurement errors while weighing and plotting the child's weight on the growth chart as the nutritional status is the basis for targeting children beneficiaries in the recuperative program and misclassification of children into different malnutrition categories would lower cost-effectiveness of the program. Both beneficiaries and health staff consider the RPs as an important component of the program because it provides essential preventive services to the population.

The Mothers' Club (MCs). The MCs are also appreciated by both the staff and the beneficiaries and are perceived to be the least time-consuming requirement of the program for beneficiaries. Health staff and beneficiaries also perceive the MCs as being a key element of the package of services offered by the program and as being the primary venue for the education and BCC strategy. Note that a new BCC strategy was developed in 2002-03, which focused mainly on improving infant and young child feeding practices. All health staff in charge of facilitating MCs were trained in 2003 in the use of the newly developed communication materials and their technical content, and in adult education techniques. Our operations research, which was conducted a few months after the staff training was completed, showed marked improvements in the quality of the education provided at the MCs, both with regards to the technical content of the sessions and the health staff's facilitation and teaching skills. Ensuring the intended composition of the clubs (i.e., that mothers attend the clubs that correspond to their physiological status—pregnant or lactating—or to the age or nutritional status of their child—6-11 months, 12-

23 months, or malnourished 6-59-month-old children) in order to maximize their effectiveness and impact on behavior change is still a challenge. Continued supervision and retraining of the staff will be important to enforce adherence to the club composition and to sustain the quality of education over time and the motivation of both staff and beneficiaries.

The Food Distribution Points (FDPs). The program distributes food rations on a monthly basis at a central location referred to as the Food Distribution Points (FDP), where beneficiaries from several communities are brought together. The number of beneficiaries at each FDP is very high—on average, 240 beneficiaries—and thus, excessive crowding and long waiting times are the norm. Additional logistical constraints, such as delays in arrival of the food and the staff, are inherent to the environmental conditions in which the program operates (i.e., bad road conditions, limited transport facilities, and the scarcity of fuel) and are largely beyond the program's control. Problems with the amounts of food commodities received by the beneficiaries were another constraint identified through our research. A large proportion of beneficiaries included in our exit interviews at the FDPs did not receive the amounts of food commodities they were entitled to—some received more and others less of the different commodities due to the types of measurement tools used and the overcrowding in the FDPs. Solving these food allocation problems is important for fairness and to ensure the efficient use of resources. The sharing of food commodities also appeared to be widespread, according to the beneficiaries interviewed, and included both sharing among household members and sharing with other relatives, neighbors, and other individuals. Clearly the sharing of food commodities is unavoidable in this type of program and WV specifically addresses this issue by providing an *indirect* ration (to be shared among family members) in addition to the *direct* ration targeted to its beneficiaries. Sharing of food commodities, however, is apparently not limited to those commodities included in the *indirect* ration. Thus, the program should continue to emphasize the importance of using fortified commodities such as wheat-soy blend for its targeted beneficiaries—i.e., young children—because the micronutrient composition of

these foods is especially designed to help young children meet their high daily nutrient requirements. The other commodities, which are provided specifically to complement the diet of other family members, can continue to be used for this purpose.

Work environment of program staff and supervision. Data from focus group discussions with five categories of program implementers (including frontline implementers from the health and commodity side and their supervisors) were used to assess their perceptions of the work environment and of supervision. Staff at all levels of the program feel that they are engaged in important activities, which lead to improvements in the lives of the people and communities the program serves. They, however, identified a number of issues that affect their satisfaction with their work. These included the perceived inadequacy of wages, the heavy workloads and some largely unavoidable logistical constraints related to the environment in which they work. Overall, however, the results point to high levels of motivation and commitment of the program staff. Perceptions regarding the supervision received were also largely positive and indicated that, in general, the field staff felt well-supported and motivated by their supervisors.

Use of the Information for Program Strengthening

The results of this first round of operations research were presented in Haiti and discussed with the program staff. A one-and-a-half-day meeting was held to identify and prioritize potential solutions to address the operational constraints identified, and to develop a plan of action to implement corrective actions to strengthen program operations and improve the quality of service delivery. The tools used to guide this process and the action plan agreed upon by the WV staff are presented in the final section of this report. A second round of operations research will be conducted in 2004 to monitor the implementation of the corrective measures and to document improvements in program operations.

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Acronyms Used

ADP	Area Development Program
BCC	Behavior Change Communication
BF	Breastfeeding
CF	Complementary Feeding
CTS	Commodity Tracking System
DAP	Development Assistance Programs
EBF	Exclusive Breastfeeding
FANTA	Food and Nutrition Technical Assistance
FFH	Freedom from Hunger
GMP	Growth Monitoring and Promotion
FDP	Food Distribution Point
HH	Household
IFPRI	International Food Policy Research Institute
LAM	Lactational Amenorrhea Method
MC	Mothers' Club
MCHN	Maternal and Child Health and Nutrition
ORS	Oral Rehydration Salt
PVO	Private Voluntary Organization
RP	Rally Post
SFB	Soy-Fortified Bulgur
USAID	United States Agency for International Development
WFP	World Food Programme
WSB	Wheat-Soy Blend
WV	World Vision

Acknowledgments

The authors thank Dr. Arsène Ferrus, project director in Haiti, and his research team for their excellent work in the field. We also thank World Vision (WV)'s staff, especially Frank Williams, Bekele Hankebo, and Dr. Lesly Michaud, as well as staff members from the regional Hinche office and the field staff in the study zones for all their support during the fieldwork. The authors also thank the participants of the workshop held in Port-au-Prince, Haiti, on February 9 and 10, 2004, for their comments and feedback on this research. At the International Food Policy Research Institute (IFPRI), we are grateful to Wahid Quabili for his assistance with data processing and analysis and Mary Arimond for her comments and editing. Finally, we thank all program beneficiaries for their participation in this research.

This research was funded by the Food and Nutrition Technical Assistance (FANTA) through its cooperative agreement with the Office of Health and Nutrition of the Bureau for Global Health and the Office of Food for Peace of the Bureau of Democracy, Governance, and Humanitarian Assistance at the U.S. Agency for International Development (USAID). Additional funding was provided by WV-Haiti, IFPRI, Cornell University, the Government of Germany, and the World Food Programme (WFP).

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Key words: operations research, maternal/child health, nutrition, food aid programs, Haiti

1. Introduction

Background

In 2001, the United States Agency for International Development (USAID) funded 84 Title II food aid Development Assistance Programs (DAPs), valued at $383 million. An assessment of these programs in 2002 indicates that their monitoring and evaluation systems are generally designed for reporting to the USAID Missions or Headquarters, but not for program management (Bonnard, Haggerty, and Swindale 2002). According to this report, although the monitoring and evaluation systems of recent DAPs have been strengthened, there is still a need for improving the collection and use of monitoring and evaluation information for program management and to monitor and improve overall program performance.

The present manuscript describes how operations research methods can be used for this purpose, i.e., to systematically assess constraints to the effective implementation and high-quality service delivery of programs and to identify and implement corrective actions to improve programs' operations and overall performance. Specifically, this manuscript provides an example of how operations research approaches were used as a tool to strengthen program monitoring and management in the context of a Title II food-assisted Maternal and Child Health and Nutrition (MCHN) program implemented by World Vision (WV)-Haiti in the Central Plateau region of Haiti. The report is directed to program managers, researchers, and development professionals who are interested in applying operations research methods to evaluate and strengthen similar MCHN programs in developing countries.

Operations Research

Operations research aims at studying the processes by which programs are implemented and interventions are delivered to intended beneficiaries. The main purpose is to identify, as early as possible in the life of a program, any shortcomings in the process that may affect the effective delivery of the intervention, and as a result, its

potential impact on the expected outcomes. Thus, the overall goal of operations research is to generate the necessary information to program planners and implementers that will allow them to design and test potential solutions to improve program delivery and will lead to the timely implementation of corrective actions.

Operational research methods have been used to evaluate the quality of implementation of a number of social programs (such as the *Programa Nacional de Educacion, Salud y Alimentacion* [PROGRESA] program in Mexico; Adato, Coady, and Ruel 2000) as well as various nutrition and health programs. Some examples of the use of operations research in primary health care programs include the assessment of health services' organization at the community level; the determination of optimal forms of application of existing simple and low cost technologies; the planning and training of health promoters; and the evaluation of supplementary feeding programs (Blumenfeld 1985; Hermida and Robles 1992; Robles et al. 1995; Ruel, Arévalo, and Martorell 1996).

The main focus of the operational research described here was to assess the implementation and operational aspects of the WV food-assisted MCHN program, with the overall goal of identifying areas that could be improved, and to propose solutions for strengthening the program and maximizing its effectiveness.

Overview of the Study's Overall Research and Development Activities

This research is part of a larger evaluation being conducted by the International Food Policy Research Institute (IFPRI) and Cornell University (CU) in collaboration with WV-Haiti to compare two models for targeting and delivering a food-assisted MCHN program. The two models are (1) the traditional *recuperative* approach, whereby children under five 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 two years of age, irrespective of their nutritional status.

In addition to conducting the impact and operations research of the two program models, the IFPRI-CU team also provided WV-Haiti with technical assistance for the development and refining of the two program models. The focus of the technical assistance was on strengthening the education and communication component of the MCHN program. Thus, following a formative research study in 2002 (see Menon et al. 2002a; 2002b), the team worked with WV staff to develop a Behavior Change Communication (BCC) strategy, and to define the implementation of this BCC strategy within the separate contexts of the two program models (see Loechl et al. 2003a; 2003b).

The full field-based implementation of the BCC strategy in conjunction with the other program components (i.e., the food distribution and preventive health care services) started only in May 2003. Data collection for the operations research described in this report commenced in July 2003, three months after the program became fully operational, and concluded in September 2003. Thus, the results presented here depict the program as it was in mid 2003, i.e., more than six months prior to the finalization of this manuscript. Thus, as highlighted in the final section (Section 7), several of the operational constraints identified in our research had already been at least partially addressed when the results were discussed with WV, as a result of the program's routine monitoring and strengthening activities.

Organization of the Manuscript

The manuscript is structured as follows: Section 2 presents an overview of the objectives, design, and methodology of the operations research. The following three sections describe the results of the operations research carried out at the three main program delivery points, i.e., the Rally Posts (Section 3), the Mothers' Clubs (Section 4), and the Food Distribution Points (Section 5). This is followed by Section 6, which describes staff perceptions of their work environment, with a focus on factors influencing job satisfaction and motivation, and perceptions about supervision. The manuscript concludes with a description of the process used and the outcomes of discussions of the

results with WV-Haiti staff, and outlines the plan of action they designed to strengthen operations and improve the quality of service delivery (Section 7).

2. The Operations Research Objectives

The main purpose of the operations research reported here was to gather information on the effectiveness of delivery of the different components of the program and to determine whether the program was operating as planned. This first round of operations research was designed primarily as a "troubleshooting" exercise; i.e., its main purpose was to identify bottlenecks or constraints and possible corrective actions that can be implemented to ensure smooth implementation of the program and its various components.

The specific objectives of this first round of operations research were

1. To assess the implementation of the program, using operations research methodologies to identify constraints and potential solutions to improving program operations.
2. To assess the quality of delivery of the intervention with respect to the planned delivery system (for example, quality of the different services provided by the local staff, quality of the food distributed, quality of the education provided).
3. To explore the perceptions of different stakeholders about the program with a special emphasis on their perceptions regarding its effectiveness, the quality of services provided, the motivational factors that may affect their performance and job satisfaction within the program structure, and their suggestions for improvement.

The System Studied in the Operations Research

The WV MCHN program offers services at five major points of contact between program staff and participants. These are (1) the *Rally Posts* (RPs), where health education, GMP, and preventive health care are provided and beneficiaries are identified; (2) the *Mothers' Clubs* (MCs), where smaller groups of participants gather to discuss health and nutrition topics in the context of the program's BCC strategy; (3) the *Pre- and Postnatal Consultations*, where pregnant and lactating women receive preventive health care and education; (4) the *Food Distribution Points* (FDPs), where beneficiaries receive their monthly food rations; and (5) the *Home Visits*, where beneficiary households with a newborn infant, a severely malnourished child, or a child with growth faltering are visited by the WV health staff.

The main beneficiaries of the preventive MCHN program are *all* children between 6 and 23 months of age who reside in the program areas, whereas the beneficiaries of the recuperative MCHN program are *malnourished* children[1] between 6 and 59 months of age who reside in the program areas. In both programs, pregnant and lactating mothers (until their infant reaches six months of age) are also targeted.

In the preventive program areas, severely malnourished children between 24 and 59 months of age are also eligible to participate in the program. These children (classified as M3 according to the Gomez classification) are identified through the regular GMP activities done at the RPs. 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.

The Rally Post (RP) is the entry point in both programs, and is used to refer beneficiaries to the appropriate program services. New beneficiaries are identified at the

[1] Malnourished children are defined as M2 and M3 according to the Gomez classification. In this classification, normal (N) corresponds to ≥ 90 percent of the median of the weight-for-age CDC/NCHS/WHO standards; mild malnutrition (Grade M1) to 75 percent - < 90 percent; moderate malnutrition (Grade M2) to 60 percent - < 75 percent and severe malnutrition (Grade M3) to ≤ 60 percent (Cogill 2003).

RPs every month; eligible 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 the recuperative model, there is no defined upper age limit for admittance, although there is an upper age limit for eligibility for program services. For instance, a child can be admitted at 58 months, but s/he would have to exit the program one month later when s/he reaches the age of 59 months.

For mothers of children 6-23 months old in the preventive program and mothers of malnourished children in the recuperative model, monthly attendance at the RPs and at MCs is mandatory to be eligible to receive the monthly food rations offered by the program. Pregnant and lactating women are also required to participate in MCs and pre- and postnatal consultations to be eligible for the monthly food rations (see Figure 1).

For the first round of operations research, it was decided that the study would begin with an examination of the services delivered at the RPs, MCs, and FDPs and would conclude with interviews with beneficiaries in their homes. The latter were to be conducted with women two weeks after they had attended a MC meeting.

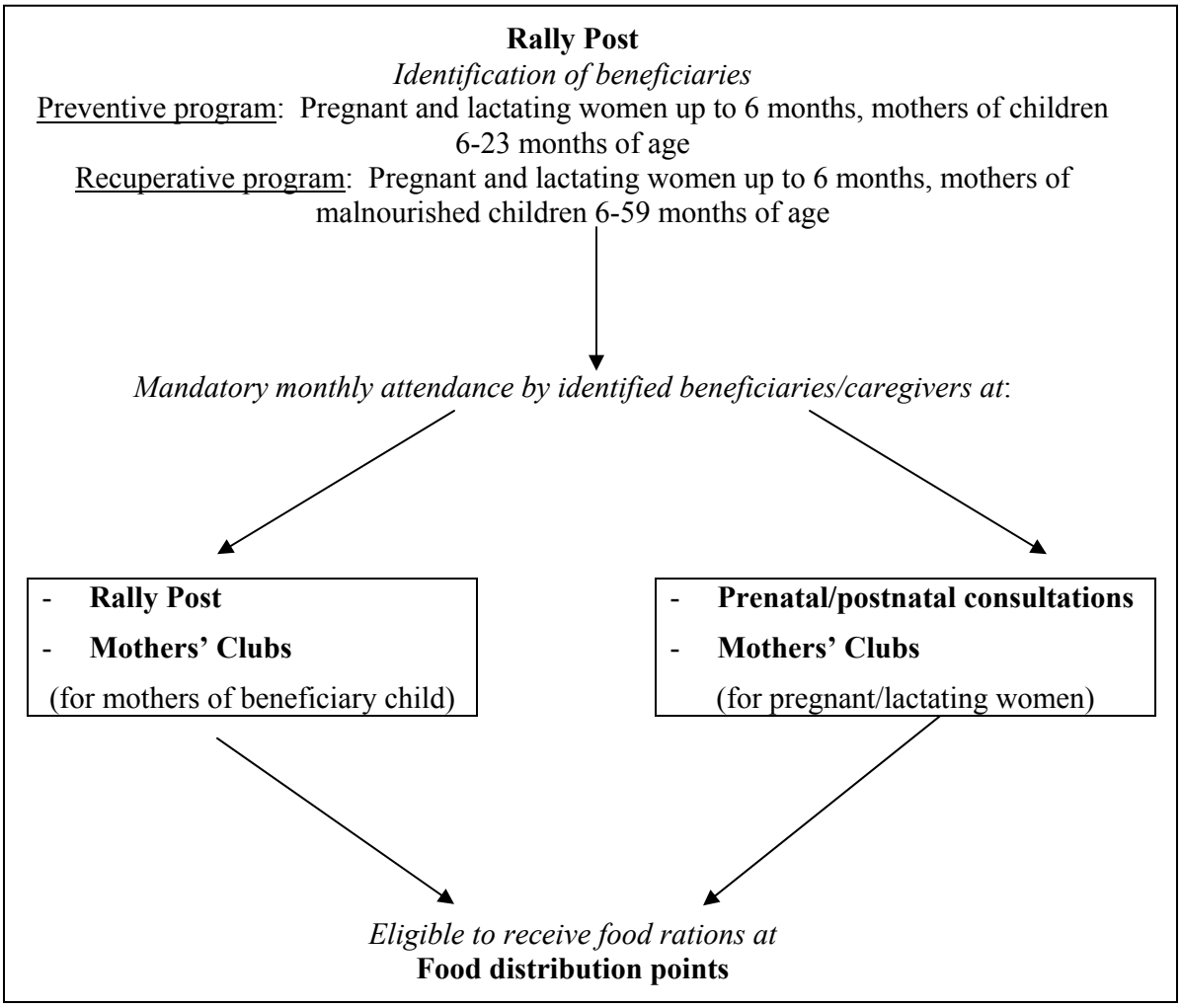
The Key Stakeholders Included in the Research

The main stakeholders included in this research were administrative and field staff at different levels of the program as well as program beneficiaries. The roles of these different stakeholders in the program structure are outlined below (see also the organizational structure of the program for the health component [Annex 1] and for the commodity component [Annex 2]).

Health Agents and Colvols

The health agents and *colvols* are the direct implementers of the MCHN program in the field and, thus, are the frontline staff in contact with the program participants. They are in charge of the interventions being delivered at the RPs and MCs and of

Figure 1—Beneficiary requirements for participation in the WV MCHN program



assisting the food monitors at the FDPs. They attest to the attendance by beneficiaries at the different MCHN activities (which determines their eligibility to receive food rations). Health agents are WV employees and receive a monthly salary. At the time of the study, *colvols* were community volunteers, who assisted the health agents in their duties and received a small monthly financial incentive from the program. Both health agents and *colvols* are supervised by nurses, who are referred to as MCHN supervisors.

Food Monitors

Food monitors are responsible for the distribution of the food rations at the FDPs and for ensuring that only eligible beneficiaries receive the food. They are also responsible for verifying the beneficiary lists provided by the MCHN supervisors. Food monitors pertain to the Commodity Section of the program, and are supervised by the field supervisors, who are referred to as commodity supervisors.

MCHN and Commodity Supervisors

As indicated above, MCHN supervisors are nurses responsible for the supervision of the health agents and *colvols*, and commodity field supervisors are responsible for the supervision of the food monitors. The MCHN supervisors generate monthly lists of beneficiaries eligible to receive the food rations based on lists of attendance prepared by the health agents for each service delivery point. The Commodity Section uses these lists to program the food amounts needed per distribution point. MCHN supervisors report to the Assistant of the Regional Health Coordinator of the area (Hinche in this case), and the commodity supervisors report to the Assistant of the Regional Commodity Officer.

Management Staff at the Regional and National Levels

The Assistant of the Regional Health Coordinator and the Assistant of the Regional Commodity Officer are supervised by the Regional Health Coordinator and the Regional Commodity Officer, respectively. At the national level, the National Health Coordinator is in charge of the implementation of the various health activities of the program in the country.

Beneficiaries

Program beneficiaries eligible for the food rations are all pregnant and lactating women, and malnourished children 6-59 months old (in the recuperative program areas) and children 6-23 months old (in the preventive program areas). The pregnant/lactating women and the mothers of the targeted children are the key recipients of all BCC

activities. As described in the previous section, beneficiaries receive food rations, nutrition counseling, and other preventive interventions. They must meet the conditions set by the program in order to benefit from the food rations (i.e., regular attendance at RPs, MCs, Pre- and Postnatal Consultations).

Methodology

The operations research used a variety of qualitative and quantitative research methods. These included (1) structured observations at the different program delivery points; (2) structured interviews with beneficiaries; (3) semi-structured interviews with various types of stakeholders, including national and regional health coordinators and a regional commodity officer, local health and commodity staff and their supervisors, and beneficiary women; and (4) focus group discussions with WV program staff. A description of each of these approaches is provided below.

Structured observations, as well as the semi-structured, individual interviews and focus group discussions with program staff, were used to identify bottlenecks and constraints in the implementation of different program activities (first objective of the research). In order to assess the quality of intervention delivery (second objective of the research), structured observations and semi-structured interviews with beneficiaries were used. Finally, qualitative methods (focus group discussions and semi-structured interviews with program staff and beneficiaries), as well as structured interviews with beneficiaries were used to explore perceptions related to the implementation of the program services (third objective of the research). Staff perceptions about job satisfaction and supervision were also examined.

A summary of the research methods used for different purposes and the samples used is provided in Table 1.

The operations research took place in the intervention area of the IFPRI-CU-WV evaluation project, which covers 20 zones or clusters of communities (*localités*) in three communes: Hinche, Thomonde, and Lascahobas. These 20 clusters of communities,

Table 1—Summary of methods used in operations research and sample sizes

Research method/stakeholder	Purpose	Location and sample size
Structured observations at main service delivery points	Assess operations, flow of activities, time involved in attending the delivery point	*Unit of observation/analysis is the service delivery point* **RPs**: n = 19 **MCs**: n = 20 **FDPs**: n = 10 In addition, at the RPs, information was collected on 38 tracked beneficiaries (2 per RP), using both observations and interview techniques (see below).
Structured interviews with beneficiaries	Assess access, services used, perceived importance of different services and use of food	*Unit of analysis is the participant/beneficiary*[a] **RPs** (n = 19): Exit interviews with tracked respondents (n = 38) Exit interviews with random sample of respondents (n = 59) **MCs** (n = 20): Exit interviews with random sample of respondents (n = 41) **FDPs** (n = 10): Exit interviews with random sample of respondents (n = 45)
Semi-structured interviews with health agents	Assess perceptions and opinions regarding operations, quality of services, constraints to program implementation, and suggestions for improvement	*Unit of analysis is the health agent* **RPs** (n = 19) **MCs** (n = 20) **FDPs** (n = 20)
Semi-structured interviews with health coordinators and commodity officer	Assess perceptions regarding current responsibilities, constraints to program implementation, supervision, coordination, and suggestions for improvement	*Unit of analysis is the health coordinator/commodity officer* National health coordinator Regional health coordinator (Hinche) Regional commodity officer (Hinche)
Semi-structured interviews with beneficiaries in their home	Assess perceptions regarding the program services, their relative importance, the constraints faced in using the services, and suggestions for improving the program	*Unit of analysis is the beneficiary* In beneficiaries' homes (n = 30)
Focus group discussions with five types of stakeholders (total of seven focus groups)	Assess perceptions about current responsibilities, roles, workload, time constraints, supervision and incentive structure, coordination and training	Health agents (2 groups) *Colvols* (2 groups) Food monitors (1 group) MCHN supervisors (1 group) Commodity supervisors (1 group)

[a] Throughout this report, women attending the RPs are referred to as "participants," whereas mothers and children attending the MCs and the FDPs are referred to as "beneficiaries." This differentiation is made because the RPs are open to all women of reproductive age and children under five years in the communities served, whereas the other two program delivery points, the MCs and the FDPs, are specifically targeted to program beneficiaries.

with program services for each cluster covered by one health agent, were selected from WV's program areas at the beginning of the evaluation. In each cluster, the health agent

is assisted by one-to-three *colvols*. Ten pairs of clusters were constituted that were matched for distance to main road, access to a dispensary, type of terrain and access to WV's private sponsorship program arm (called the Area Development Program). Within each pair of clusters, one was randomly assigned to receive the preventive program and the other one to receive the recuperative program.

The operations research studied one program delivery point, i.e., RP, MC, and FDP, for each health agent. A total of 19 RPs, 20 MCs, and 10 FDPs were observed (see Table 1). This does not represent the universe of program delivery points in the area since each health agent is in charge of two-to-five RPs and up to 12 MCs per month. With regard to the FDPs, however, each one covers several clusters and the 10 FDPs observed covered all 20 clusters of the project area. The MCs included in the sample reflected the different categories of MCs, i.e., MCs for pregnant women and MCs for lactating mothers (in both programs), MCs for mothers of children 6-23 months of age (in the preventive program), and MCs for mothers of malnourished children (in the recuperative program).

For the structured observation at the RPs and the structured exit interviews at the different delivery points, program beneficiaries were randomly selected. For the semi-structured interviews with beneficiaries in their homes, appointments were fixed with two women from each of 15 MCs during the exit interview.

The field team for the operations research consisted of two supervisors (Cornelia Loechl and Arsène Ferrus), two observers (responsible for observations at the RPs and FDPs), two fieldworkers (responsible for conducting the focus group discussions and semi-structured interviews with the health agents and beneficiaries), and one WV nurse (responsible for observations at the MCs). The training of the team, including the field-testing of questionnaires and interview guides, was done in June 2003 and data collection took place between July and September 2003.

Ethical approval for the study activities was obtained from the CU Commission on Human Subjects. Informed consent was obtained from all study participants before any data collection was conducted.

The next three sections present the results of the operations research carried out at the RPs, MCs, and FDPs, respectively.

3. Program Operations at the Rally Posts

This section describes the results of the operations research conducted at the Rally Posts (RPs). First, the expected sequence of activities at the RPs is described to provide context. This is followed by a short summary of the methods and samples used to carry out the research, and a presentation of the results. The results are described in relation to the three main objectives of the research, i.e., to assess the effectiveness of implementation of the different activities, the quality of service delivery. and the perception of the main stakeholders of the program, i.e., the implementers and users.

Description of Rally Post Operations According to Implementation Plan

RPs are open to all pregnant women, mothers with children less than five years of age and women 15 to 49 years old in the communities served. Services provided include health and nutrition education, growth monitoring and promotion (GMP) of children under five years of age, immunization, vitamin A supplementation, deworming, free distribution of oral rehydration salts (ORS), and information about the family planning component.[2] The monthly weighing of children who are beneficiaries in either the preventive or recuperative Maternal and Child Health and Nutrition (MCHN) program, and attendance at the RP by the child's caregiver are mandatory. Either the mother or another caregiver can take the child to the RP.

RP meetings are held on a monthly basis in each community and are managed primarily by the health agent responsible for that community. The health agent is usually

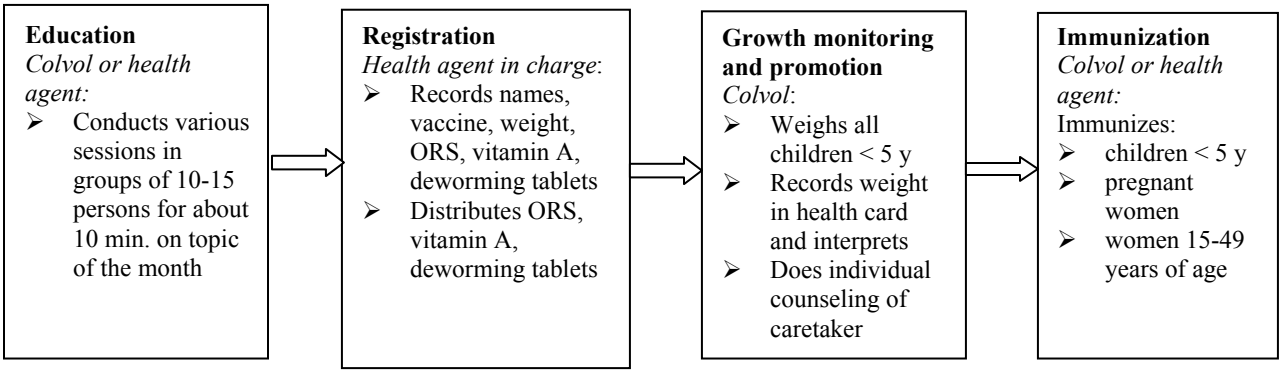
[2] WV offers hormone pills and three monthly injections. Women can receive these services administered by WV nurses at mobile clinics, in health centers during pre- and postnatal consultations, or at clinics of the Areas Development Program (ADP).

expected to be assisted by at least two other health agents and two *colvols*. The sequence of activities described in the implementation plan is as follows (also, see Figure 2 below):

1. The education session is the first activity to be carried out at the RP. The sessions run for about 10 minutes, depending on the topic. World Vision (WV) sets up a calendar of monthly topics, which include the following topics: immunization, pre- and postnatal care, preparation for child delivery, diet for pregnant and lactating mothers, weaning techniques, description of kwashiorkor and marasmus, hygiene and environment, diarrhea and preparation of ORS, acute respiratory infections, family planning, and HIV prevention. It is expected that appropriate visual materials will be used to communicate more effectively. The health agent or *colvol* is also expected to conduct several sessions on the same topic at the RP to allow all mothers to participate and to restrict the size of the group to 10-to-15 persons.
2. After the education session, the health agent registers attendance of each participant, and whether the child is due for immunization, or to receive vitamin A supplements or deworming tablets. S/he also updates the health cards with this information, and for food aid beneficiaries, s/he signs attendance on the ration card. This same health agent also does the distribution of vitamin A (every six months for children less than five years of age), deworming tablets (every six months to children two-to-five years of age), and ORS sachets (three sachets per month per household).
3. The next activity at the RP is growth monitoring and promotion (GMP). Each child is weighed and the weight is recorded on the growth chart printed in the health card kept by the caretaker. It is expected that at least the caregivers of malnourished children, especially of moderately and severely malnourished children (M2 or M3 for weight-for-age according to the Gomez classification), will receive brief counseling about feeding practices and prevention of childhood illnesses.

4. After GMP, children are directed to receive their immunizations, based on their specific needs.

Figure 2—Flow of activities at the Rally Post



The activities at the RPs are identical for the recuperative and preventive programs, with the only differences being the criteria for selection of food aid beneficiaries. In the recuperative program group, children are targeted based on their nutritional status, whereas in the preventive program group the selection of beneficiaries is based on age.

Methods Used to Assess Operations at the Rally Posts

The following data collection methods were used to assess operations at the RPs:

1. Structured observations to capture the general ambiance (N = 19 RPs);
2. The tracking of caregivers through the different services provided at the RP (N = 38);
3. Structured exit interviews with the tracked respondents (N = 38) and with randomly chosen caregivers who were accompanying a food aid beneficiary child (N = 59);
4. Individual semi-structured interviews with health agent in charge of the RP (N = 19);

5. Follow-up semi-structured interviews with beneficiary women in their homes (N = 30);
6. Focus group discussions with *colvols* and MCHN supervisors (N = 3).

Operations and Quality of Services at the Rally Posts

The presentation of data on the operations and quality of service delivery of the different activities at the RPs follows the sequence of activities as laid out in the implementation plan (see above), i.e., the education, registration, GMP, and immunization. General information on the overall organization of the RPs, attendance, and staff and beneficiary time involvement is presented first.

Overall Organization

Participants. Table 2 presents the numbers of participants, by type, as computed by the health staff at the end of the RP meeting. The data indicate that the total number of participants varies markedly between RPs, from a low of 9 to a high of 169 total participants and an average of 74. Note that these numbers do not include the accompanying caregivers or siblings of children attended, nor the nonpregnant, nonlactating women 15-49 years of age who are also eligible to receive services such as immunization at the RPs. Thus, RPs generally host a large number of people, which explains why they are generally crowded and noisy.

Staff. As per the program's implementation plan, each health agent in charge of a RP should be assisted by at least two other health agents and two *colvols* when they hold a RP session. This was rarely the case at the RPs observed; the majority of them did not have any other health agent present to assist the health agent in charge (n = 10), and only three of the RPs had two or three additional health agents present in addition to the health agent in charge (Table 2).

Table 2—Number of participants and staff present at the Rally Posts on the day of observation

Number of participants and staff present on day of observation	Mean [n=19]	Range
Pregnant/lactating women	26	0-72
Children under the age of five years	49	9-97
Children under the age of 24 months	35	9-91
Total number of pregnant/lactating women and children under five years	74	9-169
	Numbers	
Number of health agents aside from the health agent responsible:		
- None	10	
- 1	6	
- 2	2	
- 3	1	
	Mean	**Range**
Participant per health agent ratio	55	5-151
Participant per health staff ratio	22	2-59

As could be expected, the ratio of RP participant per health agent was high—on average, 55—whereas the ratio of all health staff (health agent + *colvols*) was more reasonable, at 22 beneficiaries per health staff person (see Table 2). Note that the variation in both ratios is quite large, and the upper end of the range is as high as 151 participants per health agent.

Venue of the RPs. Of the 19 RP meetings observed, about half were held in a church (n = 10), 4 in the courtyard of a private house, 3 in a school, and 2 in a dispensary. Venues like a church or a school, which usually have only one room, make it difficult to physically separate the different activities of the RP and to avoid interference. Our observations confirmed that, with rare exceptions, most of the services provided were indeed located in one single area, next to each other.

Our results from the tracking of two respondents per RP through the various program activities indicate that none of the respondents used the services according to the sequence of activities proposed in the implementation plan (see Figure 2). Several other sequences were used, the most popular one being the following: registration, followed by education, weighing or GMP, immunization, and vitamin A dosage. In four of the RPs, the sequence even differed between caregivers attending the same RP session. Education

is rarely the first activity that caregivers attend at a RP, and the vitamin A and deworming tablet dosages are not administered along with the registration as stipulated by the implementation plan.

There was no evidence from our observations, however, that departure from the proposed sequence of activities affected the flow of participant movement. Our data showed no evidence of an association between the likelihood of experiencing bottlenecks and the specific program sequence used in the different RPs. Factors responsible for bottlenecks were invariably the large number of participants and the high participant/staff ratios.

Time commitment for participants. The tracked respondents were followed through the different services provided at the RP in order to assess the amount of time they had to invest in attending a RP. They were also asked to estimate their travel time to and from the RP. On average, respondents spent 20 minutes, varying between 2 and 90 minutes, to get to the RP (Table 3). In addition, they spent a total of about two hours at the RPs with very high variability—between 15 minutes and 4 hours. The total time commitment for RP attendance, including travel time to and from the RP and the time spent, there was, on average, 2.5 hours—varying between 35 minutes in the best case to 7 hours in the worst case. By far the largest amount of time spent at the RP was in waiting in line for the next service (average 74 percent, and up to 97 percent for one respondent).

Education Sessions

Implementation and attendance. According to the program implementation plan, several education sessions should be held throughout the day to accommodate all participants. However, only at four of the RPs were two (n = 3) or three (n = 1) education sessions conducted on the day of observation (see Table 4). As expected, the number of adults participating in the education sessions was larger (average 30) at the RPs that organized only one session, compared to the RPs where two or three sessions were held (average 19 and 20, respectively). Moreover, 20 percent of our exit interview

respondents (12/59) and two-thirds of our home interview respondents (18 of the 27 who had attended a RP) reported having missed the education session because they had arrived late at the RP. This result confirms the need to conduct more than one session at the RPs if full coverage of the participants is to be achieved.

Table 3—Time commitment required for RP attendance (tracked respondents)

Time allocation by tracked respondents	Mean [N=38]	Range
Travel time to reach the RP (minutes)	20	2-90
Total time spent at the RP (minutes)	117	15-242
Total time commitment for RP attendance (minutes)	156	35-422
Time spent by respondent in different activities (minutes):		
- Registration (n=37)	5	1-30
- Education session (n=38)	10	1-23
- Vitamin A distribution (n=17)	4	1-14
- Deworming (n=2)	3	2-3
- ORS distribution (n=0)	0	
- Weighing (n=38)	4	1-14
- Counseling after weighing (n=14)	3	1-6
- Vaccination child (n=9)	3	1-8
- Vaccination adult (n=1)	3	3
Total time spent waiting (minutes)	94	4-234
Proportion of time spent waiting (waiting/total time)	74%	10-97%

Table 4—Number of education sessions at RPs and number of participants per session

Number of education sessions held	Number of RPs [N=19]	Mean number of participants/session	Range of participants/session
- One	15	30	6-76
- Two	3	19	9-29
- Three	1	20	4-51

Quality of education. The majority of the education sessions observed was conducted by the health agent in charge of the RP. On average, the sessions lasted for about 10 minutes, but the duration ranged from as low as 1 minute to as high as 23 minutes. Very little use of any communication material was observed, even though a variety of tools have been provided by WV to each health agent and *colvol*.

According to the 12-month program calendar of education topics, the topics suggested for discussion during the study months (July to September) were family planning, HIV/AIDS, and *Moringa oleifera*.[3] None of these topics were discussed in the 19 RPs observed. A wide variety of other topics were covered, however, the most popular ones being immunization, the health card, and the importance of weighing the child. Up to four different topics were covered within one month in the different RPs observed. The results from the home interviews confirmed that immunization was by far the predominant topic presented at the RP education sessions in the months prior to the home interviews. It is not clear from our research why the scheduled topics were not discussed, i.e., whether it was because the health agents were not aware of these monthly topics, or whether they did not feel comfortable enough with the topics. Unfortunately, this information is not available.

Table 5 summarizes our observations of the quality of the education provided at the RPs. A good ambiance was observed in 15 of the 38 sessions observed, i.e., participants were attentive to the health agent's presentation, there were few distractions and the health agent/*colvol* spoke clearly and loud enough so that s/he could be

Table 5—Quality of education provided at RPs

	Numbers [N=38]
Positive aspects	
Good ambiance	15
Practical advice	6
Use of demonstrations	2
Dialogue	2
Animator asks many questions to audience	18
Negative aspects	
No animation (songs, sketch)	22
Distracting atmosphere (side-conversations, crying children, etc.) and crowded	9
Audience asks questions to animator	
- No questions	34
- A few questions	4

[3] *Moringa oleifera* is a multipurpose tree of significant economic importance with several industrial and medicinal uses (local name in Haiti: benzolive tree). WV promotes the consumption of the leaves (fresh or dried), which are rich in carotene, iron, and ascorbic acid in any spinach recipe. The leaves are also a source of protein (Makkar and Becker 1997).

understood by the participants. In nine of the sessions, however, the noise levels were high, which is understandable, given the level of crowding at many of these sessions and the fact that there was no separate space available to carry out the education.

A few health agents and *colvols* included practical advice and demonstrations in the sessions, or attempted to create a dialogue with the participants. In about one-half of the observed sessions, the animators asked the audience many questions. However, in most of the sessions, the audience did not ask the animator any questions and there was no real dialogue between the animator and the audience. Finally, the education sessions tended to focus on messages rather than use concepts of behavior change, and lacked practical advice and/or the discussion of potential constraints to behavior change and solutions to address them.

The potential effectiveness of the education conducted at the RPs was assessed based on the recall and application of the information presented at the education sessions by the home interview respondents. The respondents were asked to recall as many of the details concerning what they had heard and learned at the RP and to talk about what they were able to use. The results are presented in Table 6.

Table 6—Spontaneous recall and application of advice received at Rally Post education sessions (home interview sample of mothers exposed to specific education topics)

Spontaneous recall of details	Numbers	Application/adoption	Numbers
Immunization protects against illness (N=9)	8	Taking the child regularly to RP for immunization (N=9)	7
Importance of giving all doses to fully protect the child (N=9)	3		
Role of certain vaccines (N=9)	3		
Dosage for treatment of drinking water and role of chlorine (N=1)	1	Treatment of drinking water, daily (N=1)	1
		Preparation of ORS when child has diarrhea (N=1)	2

In general, the information given in the education sessions on immunization was considered useful by the respondents, although it was not new to some of them. The recall of details and the adoption of recommended practices were quite good, given the

lack of depth of presentation of topics at the RPs. For instance, most of the mothers who remembered the topic of immunization had actively taken their child regularly to the RP for immunization. Further, most of the women who had attended an education session on immunization also recalled that immunization protects against illness, and a few mentioned the importance of fully immunizing the child in order to achieve total protection. Others remembered the role of specific vaccines, although not always correctly, and some either recalled names of vaccines or that there was an immunization schedule to be followed, but without remembering more of the details.

The one woman who attended a session on water treatment provided detailed information on dosage for chlorine and its role. She also reported treating the drinking water on a daily basis. No details were recalled by respondents who had attended RP education sessions on the importance of weighing and ORS. When asked about the application of advice though, the one woman who had heard about the importance of weighing said that she takes the child regularly to the RP for weighing. Similarly, two women mentioned that they prepared ORS at home when their child has diarrhea, even though one of these women had actually not attended a session on ORS at the last RP. It is difficult to establish a direct link between maternal knowledge and her participation at the RP because mothers may have been exposed to nutrition education messages through other programs and venues. Thus, these results should be interpreted with caution.

Registration, Vitamin A, Deworming, and ORS

Implementation and use of the services. According to the implementation plan, registration is the second activity a caregiver would attend at the RP. The same health agent who does the registration is expected to distribute vitamin A capsules, deworming tablets, and ORS packets. Therefore, the results for these services are discussed in the same section, even though in practice, vitamin A, deworming, and ORS are often provided along with the weighing or the immunization activities.

All tracked respondents were registered (see Table 7). Only 62 percent of the children of our tracked respondents who were due for their bi-annual dose of vitamin A,

however, received it on the day of observation/interview. Among those who were due and did not receive it, the reason in 22 percent of the cases was that the service was not offered on the day of attendance. For the others, the caregivers had not used the service for unknown reasons.

Table 7—Number of children who received vitamin A supplements, deworming tablets, and ORS packets at the Rally Posts

Registration, vitamin A, deworming, ORS	Tracked respondents[a] [N=38]	Exit interview respondents[b] [N=59]
Registration		
- Number of children registered	38	-
Vitamin A (every six months for children < 5 years)		
- Number of children due to receive	24	-
- Number who received on day of observation	15	
- Number who were due and did not receive because service not offered that day	2 of 9	
Deworming tablet (every six months for children > 2 years)		
- Number of children eligible to receive	13	20
- Number who received on day of observation	2	3
- Number who were eligible and did not receive because service not offered that day	7 of 11	9 of 17
ORS packets (all children < 5 years at every visit to RP)		
- Number of children eligible to receive	38	59
- Number who received on day of observation	0	2
- Number who did not receive because service not offered that day	24 of 38	37 of 57

[a] Tracked respondents were the sample of 38 beneficiaries (2/RP) observed by our field workers as they went through the different RP activities.

[b] The exit interview respondent samples consisted of 2-4 randomly selected caregivers accompanying a food aid beneficiary child in each RP [n = 59].

Similarly, very few of the children eligible for their bi-annual deworming tablets on the day of observation/interview received them (15 percent), and for many of them, this was because the service was not offered that day. Finally, none of the tracked respondents and only two of the exit interview respondents received ORS packets, again mostly because the service was not offered.

Information gathered at the level of the RPs confirms that the supply of vitamin A capsules, deworming tablets, and ORS packets was inadequate in many of the RPs

observed; vitamin A was unavailable in 5 of the 19 RPs, whereas deworming tablets and ORS were unavailable in 8 RPs and 12 RPs, respectively.

In the process of registration, the health agent is also expected to update the health cards with information on the vaccines, vitamin A supplementation, and deworming that the child is supposed to receive on the day of the RP, and sign attendance on the ration card for food aid beneficiaries. This was duly done for all but three of the tracked respondents who brought their health card with them.

Mothers, however, were much less likely to have brought their *ration* cards to the RP. This was likely due to the fact that the requirement was relatively new and mothers had not adjusted to this change yet.

Growth Monitoring and Promotion (GMP)

Implementation of GMP activities. As part of the activities carried out at the RP, each child should be weighed, the weight recorded on the growth chart (weight for age) printed in the health card, and the child's weight interpreted to evaluate nutritional status (i.e., whether or not the child has an adequate weight for his age, and if s/he is moderately or severely malnourished, i.e., M2 or M3 according to the Gomez classification). It is expected that caregivers will be informed about the child's weight and receive brief counseling, especially if their child is malnourished (M2, M3).

Data from our tracked respondent observations (Table 8) indicate that all children were indeed weighed. Health staff also tended to comply with the other "mechanical" steps involved in GMP, namely, recording the weight in the card and assessing the child's nutritional status. They were, however, much less likely to communicate the results to the caregivers or to engage in any type of discussion or counseling; only about half of the tracked respondents were informed of the child's weight, about 25 percent were told about the child's nutritional status, and only about one-third received any post-weighing counseling. Having a malnourished child (M2 or M3), however, seemed to increase the likelihood of receiving counseling (e.g., close to half of the respondents who had a malnourished child were counseled, compared to about one-third of those whose child

was not malnourished). Thus, it seems like the health staff did pay some attention to the nutritional status of the child in deciding whether or not to communicate with the mother about the child's status. However, they still did not provide counseling to more than half of the caregivers who had a malnourished child. Similarly, the vast majority of mothers who were accompanying a well-nourished child were not praised or encouraged for having a well-nourished child.

Table 8—Numbers of children/caregivers who were included in the different steps of growth monitoring and promotion (GMP) process

Steps in the GMP process	Tracked respondents[a] [N=38]
Child was weighed	38
Caregiver was informed of child's weight	16
Child weight was recorded in health card (n=35)	29
Nutritional status was assessed	32
Caregiver was informed of child's nutritional status	9
Post-weighing advise was given to caregiver	14
If child was malnourished	(n=20)
- M2: Received counseling	9/20
- M3: Received counseling	0/0
If child was not malnourished	(n=18)
- M1: Received counseling	3/9
- Normal: Received counseling	2/9

[a] Tracked respondents were the sample of 38 beneficiaries (2/RP) observed by our field workers as they went through the different RP activities.

Quality of the weighing. Results of our assessment of the quality of the weighing procedures at the RPs are presented in Table 9. Hanging (Salter) scales are used to weigh the children. The difficulties in reading the weight of a moving (and/or crying) child when using these scales are well recognized. Therefore, one of the observations made by the fieldworkers was the movement of the scale's needle at the time of measurement. In most of the observed cases, the needle was stable or only somewhat moving (80 percent), but in 20 percent (n = 8) of the observations, the needle was moving a lot. The children were reweighed using an electronic scale by the fieldworkers (who had been trained and

standardized in taking anthropometric measurements) to assess the extent of measurement error.

Table 9—Quality of weighing at Rally Posts (observations and reweighing by staff)

Characteristics	Mean [N=38]	Range
Weighing		
Difference between weight measured by fieldworkers (electronic scale) and by health staff (Salter scale) (g)	-120	-2600 – +1000
	Numbers [N=38]	
Scale's needle movement at the time of measurement:		
- A lot	8	
- Somewhat	15	
- Not at all (needle is stable)	15	
Measurement is correct, compared to electronic scale measure (± 100g)	18	
Measure is correct (+/- 100g) when weight is read when:		
- Needle is stable (n=15)	7	
- Needle swings somewhat (n=15)	9	
- Needle swings a lot (n=8)	2	
Plotting		
Weight is correctly plotted into growth chart (n=29)	14	
Difference in classification of nutritional status (misclassification) resulting from		
Plotting errors (using weight as measured by the health staff) (n=32):		
- "Normal" according to fieldworker but classified by health staff as "M1"	1	
- "M1" according to fieldworker but classified by health staff as "Normal"	2	
- "M2" according to fieldworker but classified by health staff as "M1"	1	
Weighing + plotting errors (using weight as measured by fieldworkers) (n=32		
- "Normal" according to fieldworkers but classified by health staff as "M1"	2	
- "M1" according to fieldworkers but classified by health staff as "Normal"	3	
- "M2" according to fieldworkers but classified by health staff as "M1"	2	
- "M1" according to fieldworkers but classified by health staff as "M2"	2	

On average, the weight measured with the hanging scale was 120 grams higher compared to the weight measured with the electronic scale, but there were large variations in the magnitude of the measurement errors (from –2,600 to + 1,000 grams). If we consider that a difference of + or – 100 grams between the two measurements is acceptable, nearly half of the observed measurements done by the health staff are within this range (n = 18). However, the percentage of acceptable measurements is lower when the needle of the scale swings a lot (25 percent), compared to when the needle is stable (where 47 percent are within +/- 100 grams). This finding suggests that the extent of

measurement errors could be considerably lowered if the health staff paid more attention to the movement of the scale's needle at the time of measurement.

Quality of the plotting. Data were also collected to verify the quality of the plotting and to determine the extent of misclassification that resulted from incorrect plotting. This was done by the fieldworkers, who verified the plotting of the weight done by the health staff (using the weight information as measured by the health staff). Results indicate that the plotting was done accurately in only half of the cases where the weight of the child was plotted in his/her health card (n = 14/29). The implications of these plotting errors for the classification of children into the different Gomez categories were also assessed by our fieldworkers, again using the weights obtained by the health staff. The results presented in Table 9 show that the plotting errors actually resulted in relatively small misclassification errors—no differences in classification were found in 87 percent of the cases (n = 28/32). This was probably because the plotting errors were not of large magnitude, and therefore, although they were found in approximately half of the cases, they resulted in only about 13 percent (n = 4/32) of the children being misclassified into the different Gomez malnutrition categories.

Implications of weighing and plotting errors. The implications of the combination of weighing and plotting errors for the classification of children into the different Gomez categories were also assessed by comparing the classifications obtained by the health staff with those obtained by the fieldworkers (using their measurement of the child's weight and their plotting of the child's weight). As expected, the results show that the misclassification errors are slightly higher—no differences in classification were found in 72 percent of the cases (n = 23/32), but about 28 percent (n = 9/32) of the children were misclassified into the different Gomez malnutrition categories. This was due to the fact that in addition to plotting errors, weighing errors occurred in about half of the observed measurements done by the health staff. Note that these results also highlight the implications of the misclassification for the program in terms of leakage of

food to non-eligible children or not reaching targeted beneficiaries (see Table 9). Misclassification errors in this case resulted in a similar number of eligible children being excluded from the program (n = 2) and of non-eligible children mistakenly being included in the program (n = 2). Although in terms of food aid quantities the numbers cancel out, the leakage of the intervention to children who may not need it and missing children who do need it results in lower cost-effectiveness and equity of the program. It is therefore important that every effort be made to try to minimize the measurement errors encountered through weighing of the child and plotting of the child's weight on the growth chart.

Post-weighing counseling. The quality of the post-weighing counseling received by tracked respondents (n = 14) was also assessed during our observations at the RPs (see Table 10). These results suggest that, not only was counseling offered to a small proportion of participants, but it also generally involved little interaction time between the health agent and the respondent. The counseling was also very brief and lasted, on average, about 3 minutes, varying between 1 and 6 minutes. The quality of interaction and of nutritional advice provided through the individual counseling was generally poor and largely unrelated to the specific needs of the child. Overall, the advice lacked detail and precision, and was generally of little practical relevance; the health staff did not provide examples of types of foods children should be fed, nor information on appropriate feeding frequency and portion sizes for specific children of different ages. Only one caregiver was given advice on specific foods to feed her child (fruits and fruit juice), but she was not advised on how often and in what quantity these should be given to the child.

For 3 of the 14 tracked respondents counseled, the nutritional status of the child had not been evaluated by the health staff, so the advice given to these caregivers was not expected to be related to the child's nutritional status. The findings for the remaining 11 tracked respondents counseled show that, with two exceptions, the type of advice provided was generally related to the child's nutritional status. The two exceptions were

Table 10—Type of advice received, by child nutritional status and time spent in post-weighing counseling (among tracked respondents who received counseling (n = 14))

Nutritional status, as evaluated by health staff using Gomez classification	N [N=14]	Type of advice given (multiple advice possible)
Nutritional status not evaluated	3	Feed the child more food (n=1) Encourage child to eat (n=1) Feed the child more food and give fruits, fruit juice (n=1) Take better care of your child (n=1)
Normal	2	Continue to feed same way/compliment (n=1) *Take better care of your child*[a] (n=1)
M1	2	Feed frequently (n=1) Feed the child more food (n=2)
M2	7	Feed the child more food (n=5) Take the child to the hospital (n=3) Encourage child to eat (n=1) Take better care of your child (n=1) Feed WV ration to the child (n=1) *Continue to feed the same way* (n=1)
Time spent in post-weighing counseling		
- Mean (minutes)		2.8
- Range (minutes)		1-6

[a] Sentences in italic refer to a type of advice that was inappropriate given the nutritional status of the child.

(1) the mother of a well-nourished child (Normal) was told to take better care of the child; and (2) the mother of a malnourished child (M2) was advised to continue to feed the same way, which seemed inappropriate, given that the child was malnourished. Similar findings were obtained in the home interviews; of the 21 respondents whose children were weighed, only 8 reported having received counseling after the weighing and the type of individual advice given was similarly to the examples provided in Table 10.

Immunization

Immunization services at the RP are offered to all children under 5 years old and to women 15-49 years of age. About 25 percent of the children of tracked respondents and exit interview respondents were immunized on the day of observation (Table 11). The majority of children who were not immunized on the day of observation were

already fully immunized.[4] Immunization for children was not offered at four of the RPs observed; at one of them it was not offered because an immunization campaign organized by a hospital nearby was ongoing; at two others, vaccines were unavailable; and at the fourth one, too few participants attended the RP and the health agent preferred not to open a vial containing 20 doses only for the four children who were due to receive their immunization that day. The anti-tetanus vaccine for women was in even shorter supply and was not available at six of the RPs. According to the fieldworkers' observations and the exit interviews, only a few respondents received an anti-tetanus vaccine at the RP (see Table 11). Most of the respondents were already immunized, i.e., had received two doses of anti-tetanus vaccine, or were attending a RP where this vaccine was not available on the day of observation.

Table 11—Use of immunization at Rally Posts and reason for non-usage

Immunization of child and caregiver	Tracked respondents[a] [N=38]	Exit interview respondents[b] [N=59]
Number of respondents whose child was immunized	8	16
If not, reason for non-usage:	(n=30)	(n=43)
- Child fully immunized	23	32
- Service not used (reason unknown)	1	1
- Service not offered day of observation	6	10
Number of respondents who were immunized	1	4
If not, reason for non-usage:	(n=37)	(n=55)
- Service not received because post ran out of vaccines	1	1
- Nonapplicable because respondent >49 years or male	1	3
- Respondent already immunized	18	25
- Service not used (reason unknown)	5	8
- Service not offered day of observation	12	18

[a] Tracked respondents were the sample of 38 beneficiaries (2/RP) observed by our fieldworkers as they went through the different RP activities.

[b] The sample exit interview respondents consisted of 2-4 randomly selected caregivers accompanying a food aid beneficiary child in each RP [n=59].

[4] A child is considered fully immunized in Haiti if s/he has received one dose of BCG, three doses of polio, three doses of DTP, and one dose of measles vaccination.

Consistent with the findings presented above for other medical supplies such as vitamin A, deworming tablets, and ORS packets, the availability of vaccines was insufficient at the time of the evaluation.

Staff Perceptions about the Rally Posts and Suggestions for Improvements

Information about perceptions and opinions of the health staff regarding the RPs was obtained in individual interviews with 19 health agents (one per RP) and in three focus group discussions with *colvols* and MCHN supervisors.

General perceptions about the RPs. Most of the health agents interviewed felt that the RPs were working well in general. Half of them reported high participation rates at the RPs they organized. Overall, they considered RPs to be an important component of their services to the communities and particularly of their role in fostering children's growth and health. MCHN supervisors consider the RPs as the key activity of the MCHN program because it is the venue where program beneficiaries are identified. In addition, the health staff expressed that they consider the RPs important because the services they offer also reach families who do not have access to the food aid component of the program. They also felt that people enjoyed going to the RPs.

Perceived problems with RPs operations. Some of the factors that the health staff felt hindered the efficient implementation of services at the RPs included problems with the lack of supplies such as medical supplies as well as scales and megaphones, insulated containers and ice for the vaccines, and furniture (chairs, benches, and tables). Other problems mentioned were the high participant/staff ratios, the late arrival of participants (and the fact that this prevented them from attending the education sessions), and the problem of participants forgetting their health or ration card at home. Furthermore, the health agents felt it was imperative that the program management provide more training to *colvols* so that they could better assist them in their duties. Finally, the lack of transport to pick up supplies at the dispensary or program office, and the long distances

between the different communities they worked in were mentioned as additional constraints to the achievement of their daily activities.

Suggestions for improvement. The suggestions made by the health agents to improve the services offered at the RPs were very much in line with their comments regarding the problems they faced. In order of importance, they recommended that the program management take the following actions: (1) provide medical supplies and vaccines regularly and in sufficient amounts, as well as all other materials and furniture needed; (2) assist with transport facilities; (3) hire more *colvols* and provide them with better training; (4) facilitate interaction among health staff to increase collaboration and support; (5) provide ice to maintain the cold-chain for vaccines; and (6) offer training to improve the logistics at the RPs and to improve their own performance.

Beneficiary Perceptions about the Rally Posts and Suggestions for Improvement

Perceived importance of different RP services. When asked about the relative importance of the different services provided at RPs, about half of all respondents considered immunization as the most important service because it protects them and/or their children against illnesses. Far fewer respondents considered weighing or education to be the most important service. Many respondents could not point out a specific service, and felt that all services were equally important.

The importance of weighing was seen as a means to check whether the child was growing well or not. The respondents voiced that a regular check of the child's weight was very useful in order to identify changes in the child's growth, since growth faltering could go unnoticed for some time. A few respondents admitted that weighing was important in order to know the child's weight and to check if the weight was adequate, but felt at the same time that this service did not have a direct impact on their child's health.

Respondents expressed that the vitamin A capsules were important because they prevented their children from having eye problems. The ORS was perceived as important when the child had diarrhea.

Ease of use. Approximately one-third of the home interview respondents felt that the services offered at the RPs were the easiest ones to use of all the WV activities they attended. They perceived that the RPs were convenient because they were relatively close to their homes and the time spent there was reasonable, especially if they arrived early in the morning.

Suggestions for improvements. Few respondents had suggestions on how to improve the RP services, but those who did mainly focused on the following two aspects: (1) logistics and organization of the RPs: provide better venues for the RPs, avoid changes in dates, repeat the announcements of the dates of the RPs, and ensure the timely arrival of the health staff; and (2) types of services offered: respondents suggested that additional services should be offered at the RPs, such as general consultations, free distribution of drugs for sick children or parents, and regular availability of chlorine for water treatment. Two additional suggestions related to child weighing were made: one was to have more scales at the RPs in order to make the weighing quicker; and the other that health staff shows more respect when doing the weighing.

Summary of Findings Regarding Operations at the Rally Posts

Overall, our assessment suggests that the RPs are generally operating in accordance with the WV's implementation plan. The problems encountered with operations relate primarily to organizational and logistical aspects such as crowding, high participant/staff ratio, long waiting times, bottlenecks at registration, and the lack of supplies and transport for staff. In terms of quality of services, the areas that could benefit from some improvement are the general education sessions and the communication between health staff and caregivers in the context of the GMP activities.

In addition, every effort should be made to minimize measurement errors while weighing and plotting the child's weight on the growth chart, as the nutritional status is the basis for targeting children beneficiaries in the recuperative program and misclassification of children into different malnutrition categories would lower cost-effectiveness of the program.

4. Program Operations at the Mothers' Clubs

This section is structured as the previous one: it first describes the activities and operations in the Mothers' Clubs (MCs), as laid out in the program implementation plan; it then briefly summarizes the research methods used for assessing the MCs; and finally, it presents the results regarding implementation, quality of services, and perceptions of staff and beneficiaries.

Description of Mothers' Club Operations According to Implementation Plan

Results from our initial formative research (Menon et al. 2002b) revealed that the MCs are an ideal setting for effective behavior change communication (BCC) activities because they are usually located close to the mothers' homes and include only a small group of participants, resulting in minimal distraction (especially compared to the RPs). Thus, the program staff decided to use the MCs as the primary venue for BCC activities.

The formative research also showed that while the MCs were an ideal setting for BCC activities, there were many aspects of the club sessions that could be strengthened. Among other things, in 2003, the clubs were reorganized to include groups of mothers of a particular physiological state and/or with children of a particular age to ensure that information was disseminated to women at the appropriate learning moment. For instance, separate clubs now exist for pregnant women, for lactating mothers up to 6 months, and, depending on the program model, for mothers of children 6-23 months old (preventive) or for mothers of malnourished children 6-59 months old (recuperative).

Finally, observations of MC sessions during the formative research (Menon et al. 2002b) had shown a clear need for training the field staff in appropriate methods of communicating with adults. Thus, in 2003, the World Vision (WV) staff was trained in the use of adult education techniques, in addition to receiving additional technical training on infant and young child feeding and care practices. The staff was also equipped with newly developed visual communication materials, which they could use as a guide for the different learning sessions on infant and young child feeding.

Schedule of Education Sessions at the Mothers' Clubs and Duration of Exposure, by Program Group

The schedule of sessions for the MCs was reorganized to be age-specific and to address behaviors that are immediately relevant for the child's health, development, and growth at a particular age. This was done for the pregnant and lactating MCs from both the preventive and the recuperative groups, and for the MCs with mothers of 6-23-month-old children in the preventive group. This was not done for the MCs with mothers of malnourished children in the recuperative group, because the focus of these MCs is on the recuperation of malnourished children, irrespective of their age.

According to the new MC schedule, women should be exposed to materials and advice about the initiation of breastfeeding and exclusive breastfeeding during pregnancy (see Annex 3a for a list of education sessions), and the messages should be reinforced throughout the first few months of lactation. Similarly, a session introducing lactating women to complementary feeding should be held when infants are four months old, and a follow-up session on nutritious complementary foods when infants are five months old. This is intended to prepare caregivers for the appropriate introduction of complementary foods when infants are six months old. Once the child reaches six months of age, mothers in the preventive group start attending the clubs for mothers of 6-23-month-old children (see Annex 3b) and again, emphasis is put on educating mothers about the current needs of their child such as the introduction of complementary foods between 6-8 months of age, the use of enriched porridges to improve the quality of the child's diet (6-

8 and 9-11 months), and the gradual transition from complementary feeding to the family diet (12-23 months).

The schedule of sessions for malnourished children from the recuperative group is different, and consists of a fixed set of nine learning sessions (see Annex 3c), which does not take the age of the child into consideration but includes topics of relevance for the recuperation of malnourished children.

The duration of attendance by mothers at the MCs (and other BCC activities) also differs between the two program groups; mothers in the preventive program may benefit from the BCC activities for longer than mothers in the recuperative program. For example, a mother who starts attending the MC during pregnancy (as expected), continues to attend the same club throughout her first six months of lactation and, subsequently, for another 18 months when the child is between 6 and 23 months of age. Thus, mothers in the preventive model may attend the MCs for up to 30 monthly sessions, without interruption. In the recuperative model, this continuity of attendance is not the norm. In order to be eligible for the MCs, mothers from this group must be either pregnant or lactating, and/or have a malnourished child 6-59 months of age. Thus, the length of participation of mothers in the MCs depends on their physiological status and on their child's nutritional status. All mothers are eligible to attend the MCs for six months during pregnancy, six months during lactation (the first six months postpartum), and up to nine additional months if they have a malnourished child at any point in time between 6 and 59 months of age. Thus, the maximum possible non-interrupted time mothers in this program group can attend the MCs is 21 months, and this will happen only if they start attending during pregnancy, continue through lactation, and have a malnourished child when they reach six months postpartum.

Communication Materials Used

The communication materials currently used in the MCs for the infant and young child feeding topics were adapted by the IFPRI-Cornell University (CU)-WV team from materials developed by Freedom from Hunger (FFH) for use with their *Credit for*

Education programs in Haiti (see Loechl et al. 2003a). All materials are organized into learning sessions, which are designed to be completed in about one hour. Each of these sessions covers specific key practices using a variety of communication methods, including a presentation by the health agent/*colvol*, small group discussions among participants, role plays, songs, and theater-like activities. All the sessions consist of a set of instructions to the health agents/*colvols*, accompanied by activities for them to carry out with the group of participants in order to achieve the objectives of the learning session. The instructions for conducting the learning session are accompanied by visual materials. The materials are described in detail in Loechl et al. 2003a.

Other communication materials are used for topics other than infant and child feeding, such as an album of images with key messages related to other aspects of maternal and child health including immunization, pre- and postnatal care, preparation for child delivery, diet for pregnant and lactating mothers, hygiene and environment, diarrhea and preparation of ORS, family planning, and HIV prevention.

Other Organizational Aspects of the Mothers' Clubs

Under the current program implementation plan for the MCs, women are brought together in small groups (15-20 women). Health agents or *colvols* (or both) facilitate the meetings, which are held once a month. Meetings take place in a variety of locations, including dispensaries, local schools or participants' homes.

As noted above, the MCs are expected to be as homogenous as possible in terms of the child's age and/or the mother's stage of pregnancy or lactation. However, other criteria, such as distance from the mothers' homes and the need to ensure a minimum of 15 participants per club, are taken into consideration. In situations where a club consists of a relatively heterogeneous group (e.g., where there are women with children of widely different ages), the program recommends that both the health agent and the *colvol* facilitate the Mothers' Club meeting and that they split the group into two subgroups to provide relevant and timely messages to mothers based on their specific needs.

Unlike the Rally Posts (RPs) and the Food Distribution Points (FDPs), mothers are required to attend the MCs themselves and cannot send another family member to use this service. This ensures that mothers have direct exposure to the BCC activities, which were developed for them.

Methods Used to Assess Operations at the Mothers' Clubs

The data used to assess the operations of the MCs were collected using the following methods:

1. Structured observations of general issues related to the MCs organization (n = 20);
2. Structured observation checklist to assess the quality of education (n = 20);
3. Structured exit interviews with randomly selected program beneficiaries at the end of each observed MC (n = 41);
4. Individual semi-structured interviews with health agents at the end of each observed MC meeting (n = 20);
5. Home interviews with beneficiary women (n = 30);
6. Focus group discussions with health agents, *colvols*, and MCHN supervisors (n = 5).

Operations and Quality of Services at the Mothers' Clubs

This section presents results regarding the organizational aspects of the MCs and the quality of education provided at the Clubs. It also summarizes the information gathered on the participants' recall and adoption of recommended practices and behaviors discussed at the MCs.

Organization of the Mothers' Clubs and Attendance

Of the 20 MCs observed,[5] five were organized for pregnant women (n = 3 in the preventive program group and n = 2 in the recuperative program group) and five for lactating mothers up to 6 months (n = 1 in the preventive program group and n = 4 in the recuperative program group). In addition, six MCs for mothers of children 6-23 months old in the preventive program group and four for mothers of malnourished children 6-59 months old in the recuperative program group were observed (see Table 12 for session topics discussed and Annex 3 for details about content of the learning sessions). The learning session materials were used in all the observed MCs to guide and animate the meeting.

Table 12—Session topics discussed in the different categories of MCs observed

	Session topic		
Category of MC observed	**Breastfeeding (Sessions #1-4)**	**LAM[a] (Session #5)**	**Complementary Feeding (Sessions #6-12)**
Pregnant women	4 MCs (#1-3)	1 MC	0
Lactating mothers	2 MCs (#4)	1 MC	2 MCs (#6+7)
Mothers of children 6-23 months old	0	0	6 MCs (#8-12)
Mothers of malnourished children 6-59 months old	0	0	4 MCs (#8+9)

[a] Lactational Amenorrhea Method.

Size of the MCs. The MCs are meant to gather small groups of 15-20 participants. The number of registered participants attending the MCs observed was within this range, although a number of other people—children, fathers, or other relatives—were also present at most sessions, raising the average number of participants to 18 and the upper end of the range to 41 participants.

Time commitment. The learning sessions are expected to last approximately one hour, and, on average, the sessions observed lasted 66 minutes. Duration varied,

[5] Although we had planned to observe the MCs held by the 20 health agents working in our evaluation area, in five cases, the health agent was replaced by a *colvol*. Thus, 15 of the MCs observed were facilitated by a health agent and 5 by a *colvol*.

however, between 25 minutes to more than two hours, depending on the session topic. As expected, the cooking and tasting sessions (Session #8) were longer than all other sessions observed. Because of significant delays in starting the sessions due to late arrivers, the total amount of time involved in attending or facilitating a MC was much higher than the planned one hour; for instance, the average time health agents spent at the MCs was 2.7 hours, with a range of 1.7 to 5.3 hours.

Adherence to MC categories and planned schedule of learning sessions. In general, the different MCs included the right categories of women, except for a few mothers in the lactating groups who had children older than the maximum 6 months recommended by the program and one mother in the MCs for mothers of children 6-23 months of age who had a 4.5-month-old infant (see Table 13).

Table 13—Adherence to MC categories (information from exit interviews at the MCs)

Characteristics of women/caregivers	Mean age of children [N=34][a]	Age range of children
Pregnant women (n=4/11)	2.1	1.2-2.7
Lactating mothers until 6 months (n=10/10)	4.7	0.4-9.2
Mothers of children 6-23 months old (n=12/12)	11.1	4.5-22.4
Mothers of malnourished children 6-59 months old (n=8/8)	31.5	16.1-52.8

[a] The sample of women interviewed in "exit interviews" consisted of 2-3 randomly selected women in each Mothers' Club [n = 41]. Seven women in the MCs for pregnant women had not yet given birth and, therefore, they were excluded for the calculations in this table [n = 34].

The MCs for pregnant women also included mothers who had already given birth, but this is consistent with the implementation plan. This is because Clubs for pregnant women are formed in a given locality with women at different stages of pregnancy. All women continue to attend the Club until all participating mothers have given birth. The Club then becomes a MC for lactating women.

We assessed the appropriateness of the *scheduling* of the MCs by examining the age of the children of the women participating in the different MCs, focusing on the appropriateness of the session topic and MC category for women with children in that age

group. Table 14 presents the age of the children of mothers who attended the different Clubs, by session topic and MC category. The findings show that for the MCs for pregnant women, the schedule was generally followed, and most women received information on breastfeeding (Sessions #1 to #5) at a very appropriate moment, i.e., when they were still pregnant (n = 7). However, three of the four mothers interviewed at the MCs for pregnant women who had already given birth listened to topics related to early initiation of breastfeeding and the use of colostrum (Sessions #1 and #2) when their infants were already 2-3 months old.

Table 14—Adherence to Mothers' Club schedules: Age (in months) of children of mothers who attended the different MCs (from exit interviews; n = 41)

	Mothers' Club category				
	Pregnant women		Lactating mothers (n=10) (infants up to 6 months)	Mothers of children 6-23 months old (n=12)	Mothers of mal-nourished children 6-59 months old (n=8)
	Still pregnant (n=7)	Given birth (n=4)			
Topic (session number)	**Number**	**Child age (months)**	**Child age (months)**	**Child age (months)**	**Child age (months)**
Pregnancy					
- BF (#1)	1	2.7 months			
- BF (#2)	2	1.8; 2.6 months[a]			
Lactation					
- EBF (#3)	2	1.2 months			
- EBF (#4)			2.1; 3.1; 3.4; 4.5 months		
- LAM (#5)	2		0.4; 6.7 months[a]		
- Introduction of CF (#6)			7.8; 9.2 months[a]		
- Learning to eat (#7)			4.9; 5.0 months[a]		
- Cooking trial (#8)					
Mothers of children >6 months					
- Cooking trial (#8)				6.2; 7.1; 10.9; 11.2 months	16.1; 18.0; 18.8; 26.9; 41.7; 52.8 months
- CF for children <12 mo. (#9)				11.8; 18.2 months[a]	26.4; 51.5 months[a]
- Food variety (#10)				7.9; 8.5 months[a]	
- Prevention of diarrhea (#11)				8.6; 22.4 months[a]	
- CF for children >12 mo. (#12)				4.5; 15.7 months[a]	
- Malnutrition (#13)					

[a] In these cases, the two mothers who attended the same session topic were also frequenting the same MC.

In the MCs for lactating mothers, the picture was different and indicates that for many of the mothers interviewed, the topics addressed at the MCs were discussed too late to be relevant for immediate application with their infants. Examples include the following: (1) one mother attended the session on lactational amenorrhea (LAM; #5) when her infant was already 7 months old, i.e., beyond the period of potential usefulness of LAM; and (2) two mothers attended the session on the "introduction of complementary foods at 6 months" (#6) when their infants were 8-9 months old.

Mothers who attended the MCs intended for those with children aged 6-23 months old generally had children who were either slightly too old or slightly too young for the topics addressed, again precluding immediate application of the new practices. This was especially the case for a mother of a 5-month-old infant who attended the session on feeding practices for children 12-23 months of age (#12). Two mothers also attended the cooking session (#8) on special complementary foods slightly too late, i.e., when their children were already 10 and 11 months old. These complementary foods are particularly important for 6-12-month-old infants, so mothers should be prepared in advance in order to start introducing them when the child is approximately 6 months of age. Other slight departures in the timing of the education sessions were also observed for sessions 10-11, but they were not too consequential. An additional problem that was observed was that the age range of the children attending the same MCs varied considerably, especially in the Clubs for mothers of 6-23-month-old children (e.g., ranging from 9 to 22 months for Session #11, and from 5 to 16 months for Session #12).

The information on the children's age by learning session number for the MCs for mothers of malnourished children is presented for descriptive purposes, since the schedule for this category is not age-specific. All children were between 6-59 months of age as expected.

Thus, there are clearly some logistical difficulties in forming MCs that are homogenous in terms of children's age and/or the mother's stage of pregnancy or lactation and in ensuring that all women attend the session that is most relevant for them

at a particular time. Coordination of this aspect is particularly complex for the preventive group and will require additional attention from the health staff and their supervisors.

Quality of Education at the Mothers' Clubs

Table 15 presents an assessment of the quality of the education provided at the MCs based on the observations of the education sessions. The observations suggest that most of the technical information communicated in the MCs was correct and complete, and was consistent with the intended content of the learning sessions (on average, 83 percent of the information was correct and complete). The weakest point concerning the technical content of the education was that about half of the health agents/*colvols* failed to correct and reemphasize the accurate messages when participants said something incorrect, which means that participants in these cases may have been left with incorrect information.

Table 15—Quality of education provided at Mothers' Clubs

	Numbers [N=20]
Positive aspects	
Technical content	
- 80-100 percent of technical information communicated was correct and complete	15
- No incorrect information communicated (n = 15)	8
Session management and organization	
- Completed all session steps	19
Facilitation and teaching skills	
- Used open-ended questions to probe and encourage, in addition to open-ended questions included in session guide	13
- Used other teaching techniques/facilitation skills as written in learning session guide	18
- Assured that all participants could see visual materials (n = 14)	13
Attitudes displayed	
- Provided praise/affirmation to participants	19
- Attempted to create good dialogue and/or limit lecture style	9
Atmosphere at the learning session	
- Did animations (songs, sketch) with the group, in addition to what is included in session guide	10
Negative aspects	
Technical content	
- Failed to correct and re-emphasize the accurate messages	12
Session management and organization	
- Failed to complete session in recommended time +/- 15 minutes	11
Facilitation and teaching skills	
- Failed to use small groups as suggested	4
Atmosphere at the learning session	
- Distracting side-conversations during the session	12
- Distracting environmental events	14

The management of the sessions was generally good. Most of the observed health agents/*colvols* completed all session steps and in the order indicated in the instructions. Many experienced problems with time management, however; some sessions were too short to allow sufficient time for interaction with participants, whereas others were up to one hour longer than recommended. This was especially the case for the cooking sessions, for which the duration depends on the recipes prepared.

Facilitation and teaching skills were generally good, with nearly all of the health agents/*colvols* using open-ended questions as suggested in the learning session guide. The large majority (n = 18) also used the various complementary communication methods recommended such as role plays, stories, games, and demonstrations. The use of small-group discussions among participants did not function very well, largely due to logistical problems. In general, the visual materials accompanying the learning sessions were used and the health staff tried to ensure that all participants could see them by moving or passing them around.

The attitudes displayed during the MCs meetings were quite positive, especially when considering that the health staff was used to a lecture-type approach before, as observed during our previous formative research. Nearly all of them provided praise and affirmation to the participants. However, demonstrating respect and helping participants to feel at ease when they made interventions was less common. A real dialogue or interaction was established by eight of the health agents/*colvols* observed. They were successful in returning questions from participants to participants, in reacting to the participants' comments, and in asking additional open-ended questions. In general, the atmosphere at the meetings was good. Half of the health staff did animations (songs, sketches) with the group in addition to what was suggested in the learning session guide. Although distracting side-conversations and environmental events (for example, a passing motorbike, animals making noise, etc.) were reported for more than half of the MCs, the level of distraction was definitely lower than at the RP education sessions. In half of the meetings, laughter was observed during the session, which can be considered an indication that participants felt at ease in the group.

These results are very encouraging and show a major improvement in the quality of education provided in the MCs since the recent training in the new BCC strategy.

Recall and Use of the Information Discussed at the Mothers' Clubs

Home interviews (n = 30) were used to assess maternal recall of the topics discussed at the MC they had attended one-to-two weeks prior to the interview. Respondents were asked to recall as many of the details as they could regarding the topics they had heard or learned about at the MCs. They were also asked which of the recommended behaviors they were able to adopt or try. The recall information was asked specifically with reference to the last MC meeting they had attended, whereas information on the application and adoption of the recommended practices was obtained for all sessions that the women had attended up to the interview date. Table 16 presents information on the recall and adoption of practices of mothers following their participation in the MCs.

Sessions #1-4: Breastfeeding practices. All 12 respondents who had attended a lactation session spontaneously recalled the message regarding exclusive breastfeeding up to 6 months. Two-thirds of the respondents recalled the topic of breast-milk expression and some of them also talked about how to store the expressed breast milk. The importance of feeding colostrum to the child and the risks of bottle-feeding were less likely to be recalled. Hardly anyone spontaneously recalled issues related to breastfeeding frequency and duration of feedings, good positioning of the child during feeding, or when to introduce complementary foods.

Six of the seven lactating respondents reported that they were currently practicing exclusive breastfeeding and that they were planning to do so until their child reached 6 months of age. For all except one, this was their first experience with exclusive breastfeeding. Also, all five pregnant respondents expressed their intention to exclusively breastfeed their infant. About half of the lactating respondents had expressed breast milk several times since the last MC meeting and left it for the child when they

Table 16—Spontaneous recall and application of advice received at the Mothers' Clubs

Topics covered in sessions	Spontaneous recall of details	Numbers who reported adopting
Sessions #1-4 (n=7 lactating and n=5 pregnant women)		
- Early initiation of BF		
- Importance of colostrum	4	
- EBF up to 6 months	12 3 (EBF protects from pregnancy (LAM))	6 (EBF up to 6 months) 5 (Pregnant women say they will do EBF up to 6 months)
- Continued BF up to 2 years		
- Risks of bottle feeding	2 (For diarrhea)	
- Local beliefs and practices, compared to recommended practices		
- Good BF techniques, frequent, on demand BF, care of nipples and breasts		
- Expression of breast milk,	8	3
- Storage of expressed milk	3	
- Importance of mother drinking water while BF		3
- Introduction of foods at 6 months		
Session #5 (n=2)		
LAM method for longer spacing between births:	2 (Longer spacing between children)	1 (Practice of LAM, i.e., EBF up to 6 months)
- EBF frequently	1 EBF up to 6 months	1 (Practice of LAM, i.e., EBF up to 6 months; and no monthly bleeding)
- No monthly bleeding since birth		
- Infant < 6 months	1 (Infant < 6 months)	
Session #8 (n=10)		
- Enriched complementary foods/recipes/meals (recipes, etc.)	10 (Recipes for enriched meals)	7 (Gruel with egg or milk) 2 (Mashed plantain with pumpkin and fish sauce)
- Role of different ingredients	6	
- Feasibility of preparing enriched recipes/meals		6 (Feeding of other rich foods or meals)
- Food texture	7 (Texture of gruel)	
- Feeding frequency		
- Serving sizes		
- Importance of encouraging child to eat	3	2
Session #9-12 (n=6)		
- Types of foods to introduce in child's diet after 6 months of age	2 3 (EBF until 6 months)	1 (EBF up to 6 months)
- Child development steps	4	
- Learning to eat (food texture, BF and feeding)		
- Feeding frequency	2	
- Serving size		
- Helping children to eat	2	
- Helping children to eat well when ill, convalescent		
- Importance of food variety and enriched meals		5 (Feeding nutrient-rich foods: leaves, beans, lemon juice, eggs) 1 Gruel with egg or milk 2 Mashed plantain with pumpkin and fish sauce
Feeding children beyond 12 months of age:		
- enriched meals		
- vitamin A-rich foods		
- importance of evening meal		

were away from home. This is a very promising result, given the fact that our previous formative research had revealed that many women had heard about expressing breast milk, but in most cases had not tried it (Menon et al. 2002b). Three respondents reported drinking water while breastfeeding at every feed as a result of having heard about it at the last MC they had attended. Although this recommendation was presented mainly as a practice to avoid dehydration and fatigue, respondents explained doing it because it increased their milk production.

Session #5: Lactational amenorrhea method (LAM). The two respondents who had attended the session on the lactational amenorrhea birth control method recalled spontaneously the objective of this method (birth spacing), and one of them remembered two of the three requirements: exclusive breastfeeding and infant less than 6 months old. None of them stated the third requirement correctly (i.e., no monthly bleeding since birth). The reported application of the method was as incomplete as the recall, suggesting that the concept of LAM and the need to meet all three requirements was not fully understood by the respondents.

Session #8: Cooking and tasting of enriched complementary foods. The cooking and tasting session is scheduled for mothers with children 6-7 months old to introduce the concept of enriched complementary foods and to provide them with concrete recipes. The results show that all 10 respondents remembered the enriched recipes that were prepared, although these recipes were new for all of them. About half of the respondents also stated the roles of the different ingredients and recalled that they were instructed to prepare a thicker gruel than the one they had usually made for young children. In addition, one-third of the respondents remembered that it is important to encourage the child to eat. Most of the respondents, however, did not spontaneously talk about practices related to feeding frequency, serving sizes, and how a child has to learn to eat.

The results of immediate application of the improved recipes at home are encouraging. Seven respondents reported having prepared enriched gruel—either adding

an egg or milk—at least once since the last MC meeting. Some had prepared it as often as every day. Two respondents of the four who had prepared the mashed plantain recipe with added pumpkin and dried fish sauce in the last club meeting also reported having tried the recipe twice at home. Three had prepared other rich foods or meals up to two-to-three times per week.

Sessions #9, 10, and 12: Complementary feeding practices. These sessions concentrate on issues related to complementary feeding practices for different age groups: 6-8 months, 9-11 months, and beyond 12 months of age. Important information is provided on child development and learning to eat (food texture, breastfeeding, and feeding), feeding frequency, serving size, and how to help children eat well.

The results show that more than half of the respondents recalled different child development steps that were presented in the chart accompanying the learning sessions. Half of the respondents remembered the importance of exclusive breastfeeding up to six months although the three sessions (#10-12) focus on practices for children older than 6 months. One-third of the respondents talked about the frequency of feeding for children 6-9 months old and correctly recalled the recommended number of meals and snacks. Two respondents mentioned that they learned what types of foods to introduce at six months, and two mothers remembered that it is important to encourage children to eat. None of the respondents talked spontaneously about feeding during and after illness, serving sizes, food texture, food variety issues and vitamin A-rich foods, or of the importance of an evening meal. Five respondents reported that they had fed their child rich meals several times per week, and/or enriched complementary foods many times per week since the last MC meeting. In sum, the results show that the practices most commonly reported as having been adopted following participation in the MCs were related to breastfeeding and feeding enriched complementary foods to the child. Some respondents, however, indicated that they were unable to adopt some of the recommendations. Four of the eight respondents who reported constraints indicated that they were not able to provide nutrient-enriched foods and meals to their child on a regular

basis due to economic constraints, whereas the remaining four reported constraints related to the expression of breast milk. One of them faced resistance from other family members after having tried it once; the others were concerned about the risk of contamination of the expressed breast milk during storage, if they left it for the child to consume at a later time.

Overall Comprehension of New Concepts Discussed in Mothers' Clubs

In addition to the analysis of the recall information and adoption of recommended practices, we also assessed home interview respondents' overall comprehension of the new concepts discussed at the MCs. This assessment was done after all the above-presented data were analyzed, and we had a good understanding of the data obtained from the home interviews. We classified respondents into the following four categories of overall comprehension: (1) very good, (2) upper middle, (3) lower middle, and (4) very poor. The ratings were made on the basis of the data from the spontaneous and probed recalls and the information on the adoption of recommended practices for each respondent. Specifically, we examined the data to evaluate the consistency in the recall (spontaneous and probed) and the application of the topics discussed at the MC.

The results of our rating exercise are presented in Table 17. One-third of the respondents had a very good overall comprehension, i.e., they recalled information correctly and were consistent in what they recalled and then reported translating information into practice. Very few respondents had a very poor comprehension, and most respondents fell into the middle categories of "upper" and "lower" middle.

Table 17—Overall comprehension of new concepts discussed in Mothers' Club

Categories (n=30)	Numbers
Very good	10
Upper middle	8
Lower middle	9
Very poor	3

In order to illustrate the meaning of the rating exercise, Table 18 shows one example of a respondent rated as having very good overall comprehension and another one rated as having very poor comprehension. The two respondents had attended MCs covering different topics; the respondent with very good comprehension had attended a session on breastfeeding (Session #3), whereas the one with very poor comprehension had attended a session on LAM (Session #5).

Table 18—Examples of a very good and a very poor overall comprehension

Example of a very good overall comprehension

Session #3 – How to breastfeed better

The individual: two children, youngest is 2 months old

Spontaneous recall

- Importance of exclusive breastfeeding up to six months;
- Expression of breast milk if the mother has to leave the house for some time;
- Storage of expressed breast milk in a clean cup, to be kept in a cool place next to an earthenware vessel, so breast milk can keep for 8 hours without spoiling;
- She did a demonstration of how to express breast milk in front of the others;

Probed recall

- Good probed recall, complemented with many correct comments by mother, e.g., exclusive breastfeeding so that child gets sick less frequently, good attachment of child (baby's mouth wide open), explains how to store expressed breast milk, drinking water while breastfeeding to avoid fatigue;

Application

- Breastfed exclusively so that child develops well and to prevent getting her monthly bleeding too early;
- Drank water while breastfeeding every time she feeds to avoid fatigue and to have more milk;
- Expressed breast milk so that child has something when s/he is hungry during her absence and helps to avoid giving other foods than breast milk; she demonstrated herself the expression of breast milk at the MC, but has not yet practiced it at home since she did not leave the house.

Example of a very poor overall comprehension

Session #5 – LAM

The individual: four children, youngest is 7 months old

Spontaneous recall

- At first, she did not remember the topic of the last MC meeting; when asked about specific ideas or pieces of information that she remembered of the last MC meeting, she talked about the following:
    - Family planning, birth spacing to have less children that could be sent to school and could get medical treatment if sick;
    - Wrong recall of requirements: monthly bleeding necessary for LAM;

Probed recall

- Good probed recall, but no further comments from the mother herself;

Application

- Could practice LAM (if: no monthly bleeding, feeding only breast milk, third requirement not mentioned), helps child to be healthy;
- Breastfed exclusively during six months;
- Prepared wheat gruel and bread soup two times per month;
- Fed mangos two times and bananas every time she goes to market.

It is clear from the first example that in addition to having a more accurate recall of the details of the content of the messages, the respondent who was ranked as having very good comprehension was more consistent in the behaviors/practices that she recalled and those that she applied. The respondent who was ranked by the team as having very poor comprehension not only performed relatively poorly on the spontaneous recall, but also reported applying very few of the recommendations from the MC meeting (second example).

It is important to note that the ranking into the different categories took into consideration that the implementation of the BCC component had started only a few months before the interviews were done. Therefore, complete acquisition of knowledge and translation into practices was not expected. The very good overall comprehension level is relative to the other observed comprehension levels in the sample. It was surprisingly difficult to identify respondents who had very poor overall comprehension. The majority of them had actually done well both in terms of recall and application.

Staff Perceptions about the Mothers' Clubs and Suggestions for Improvements

Information about perceptions and opinions of the health staff regarding the MCs was obtained in individual interviews with 20 health agents (one per MC) and in five focus group discussions with health agents, *colvols*, and MCHN supervisors.

General perceptions about the MCs. All health agents interviewed felt that the MCs were working well in general. Thirteen expressed that the MCs provide a forum for mothers to exchange ideas, to receive important information, and to learn very useful things. They also felt that the MCs helped change mothers' behaviors in a positive direction, and that mothers who attended the Clubs were in a position to take better care of their children, to avoid certain illnesses, and to fight malnutrition. Five health agents expressed that the MCs are the ideal venue of the MCHN program for BCC. A few health agents mentioned that mothers liked the clubs and that they were interested and motivated to participate. Only two health agents expressed that more efforts were still

necessary to improve the functioning of the MCs. The discussants of both focus groups with *colvols* confirmed the health agents' points of view as they, too, expressed that the MCs were working well and that mothers liked the clubs. The important contribution of MCs to positive behavior change toward recommended child feeding practices was also raised in the discussions in one of the two focus groups with *colvols*.

Participants in the MCHN supervisors' focus group, however, felt that mothers participate in the MCs only in order to get their ration cards signed and to be eligible to receive donated foods. They also expressed that the MCs are the basis of the MCHN program because they are an ideal forum to initiate behavior change.

There was also a general sense in the four focus groups with health agents and *colvols* that MCs had improved since the previous year, both in relation to organization aspects as well as in the content of the lessons, the availability of communication material and supervision.

Perceived problems with MC's operations. When asked about the problems they faced with the MCs, the majority of health agents mentioned the late arrival of the participants and absenteeism. Other difficulties that 12 health agents mentioned were poor venues for the MCs and/or the lack of seating facilities for all participants. Six health agents mentioned low active participation of women during the sessions and especially at the beginning of a new club. These difficulties were also voiced by the discussants in the focus groups with *colvols* and MCHN supervisors. Other problems mentioned less frequently included the following: (1) lack of availability of transport facilities to reach the MCs in remote areas; (2) lack of time to prepare the learning sessions for the MCs; (3) difficulties of fixing the child development and feeding chart during the meeting; (4) the small number of participants in some MCs; and (5) bad timing of meetings (market day, at noon) or having several MC meetings per day. Finally, the staff also exchanged ideas on how to deal with women who did not bring their ration cards to the MC; most of them asked to bring them the card later or sent the women back home to get their card.

Suggestions for improvement. Most of the suggestions made by the health agents were in direct relation to the problems identified earlier. In order of priority, their recommendations focused on the following aspects: (1) *staff training*: ensure retraining, monitoring, and supervision to maintain quality; (2) *time and workload*: provide transport; (3) *resources*: provide more suitable and better-equipped venues and more *colvols* to assist them in their work; (4) *calendars*: improve the scheduling of the MCs.

Beneficiary Perceptions about the Mothers' Clubs and Suggestions for Improvements

Information about the beneficiaries' perceptions of the MCs was obtained in home interviews (n = 30). Findings highlight that the MCs were well appreciated by the respondents, who indicated that the clubs were important for their children's health. The majority of respondents felt that attendance at the MCs improved their knowledge about infant and child feeding and about how to take care of their children. Some of the respondents considered that the MCs were the most important service offered by WV, although many had trouble ranking the different services according to their importance because they felt that all were important. Nearly two-thirds of the respondents felt that the MC was the easiest service to use among the different WV activities they attended. The main reasons were that the clubs were relatively close to their homes and that the time involvement was reasonable. The respondents had no suggestions on how to improve the MCs.

Summary of Findings Regarding Operations at the Mothers' Clubs

Overall, our results suggest that the MCs are appreciated by both the staff and the beneficiaries and are perceived to be the least time-consuming requirement of the program for beneficiaries. MCs are also perceived as being a key element in the package of services offered by the program and as being the primary venue for the education and BCC strategy. Our observations revealed that major improvements were achieved in a very short period of time in the technical content of the education provided at the MCs as

well as in the quality of communication and interaction between health staff and participants. Clearly, a behavior change process at the level of the health staff itself has commenced. Ensuring the intended composition of the clubs (especially in the preventive group) is still a challenge and will probably require continued supervision and retraining of the staff. The same is true for sustaining the quality of education over time and maintaining the motivation of both health staff and beneficiaries.

5. Program Operations at Food Distribution Points

This section is structured as the previous two. It presents a brief description of planned operations at the Food Distribution Points (FDPs) and of the methods used to assess operations. The findings related to operations and quality of service delivery are presented next, followed by a summary of the perceptions of field program staff and beneficiaries regarding this service delivery point and their suggestions for improvements.

Description of Food Distribution Point Operations According to Implementation Plan

The distribution of food aid commodities to the beneficiaries of the World Vision (WV) Maternal and Child Health and Nutrition (MCHN) program occurs on a monthly basis at special distribution points. Beneficiaries from several communities (*localités*) are scheduled to receive their food rations at a central distribution point on the same day. The distribution is done by community and starts with beneficiaries from the communities that are far away from the distribution point. Within each community, food rations are provided first to lactating and pregnant women, and then to caregivers of child beneficiaries.

The beneficiary households receive both direct and indirect rations. The former is meant to be used for the targeted beneficiary and the indirect ration is for other family members. The amounts and commodities vary with respect to the beneficiary category

(see Table 19). Even if a household has two direct beneficiaries participating in the program, only one indirect ration is provided.

Table 19—Composition of direct and indirect food rations, per beneficiary category

Type of commodity	Children 6-23 months of age (preventive model) Undernourished children 6-59 months of age (recuperative model)		Pregnant and lactating women (both models)	
	Direct child ration (kg)	Indirect child ration (kg)	Direct women ration (kg)	Indirect women ration (kg)
Wheat-Soy Blend (WSB)	8			
Soy-Fortified Bulgur (SFB)		10	5	5
Lentils		2.5	2	2
Vegetable oil	2		1.5	1.5

There are a total of 10 central FDPs covering about 50 Rally Posts (RPs) in the area included in the research.

The sequence of activities at the FDPs is as follows:

1. Eligibility of the beneficiary is verified by food monitors and health agents mainly based on the information on the beneficiary card. This card contains information about the beneficiaries (direct and indirect) and indicates attendance by the beneficiary at the other MCHN activities (i.e., MCs, RPs, and pre- and postnatal consultations) that are required in order to receive the food rations.
2. Once their eligibility is verified, the beneficiaries proceed to collect their rations. A team of trained beneficiaries assists the WV 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.
3. Finally, once the beneficiary (or designee) has received his/her rations, the food monitor verifies the rations received and the beneficiary card. In some cases, the food monitors reweigh the rations to verify that the right amounts have been given to the beneficiary. Once this final check is complete, the food monitor signs the

beneficiary card to indicate that the correct ration has been delivered to that beneficiary.

The activities at the FDPs are identical for both programs, and beneficiaries from both program groups can attend the same FDP.

Methods Used to Assess Operations at the Food Distribution Points

The data that provide information on the functioning of the FDPs in the next sections were gathered using the following methods:

1. Structured observations of the general organization and ambience at the FDPs and of the quality of food commodities distributed (n = 10);
2. Structured exit interviews with randomly selected caregivers who had a food aid beneficiary child, as they were about to leave the FDP (n = 45);
3. Individual semi-structured interviews with health agents at the end of the observed FDPs (n = 20);
4. In-depth interviews with beneficiary women in their homes (n = 30);
5. Focus group discussions with *colvols,* MCHN supervisors, food monitors, and commodity supervisors (n = 5).

Operations and Quality of Services at the Food Distribution Points

Overall Organization

Beneficiary and staff attendance and time commitment. On average, the FDPs observed hosted approximately 240 beneficiaries, ranging from a low of 117 to a high of 375 beneficiaries. The beneficiary/food monitor ratio is also very high (average of 77, range 29 to 188). Not surprisingly, the time commitment for beneficiaries who participate in this activity is extremely high, averaging six hours, including travel time (average one hour each way) plus the time spent at the FDP (average four hours). The main reasons for the large amount of time involved in receiving food are delays in the

arrival of both the food and the staff to the FDP. For example, although the beneficiaries are typically asked to come to the FDPs at 8:00 a.m., 4 of the 10 FDPs observed started their activities after 11:00 a.m. Food was late to arrive in 3 out of 10 FDPs and food monitors were late in half of the FDPs observed.

Quantity and Quality of Food Rations

Quantity of food. Table 20 presents data on the amount of food received by the exit interview respondents and compares this to the amount of food allocated by the program. These data were obtained by reweighing the foods that respondents received on the day of the interview using an electronic scale. The amount of food a respondent should have received was calculated based on the knowledge of the number of direct and indirect rations that they were eligible for. This information was available for a total of 44 beneficiaries, 41 of whom were eligible for one direct and one indirect ration, and 3 of whom were eligible for two direct and one indirect ration. One case of this latter group was excluded from the calculations because of uncertainty regarding the beneficiary category of the second direct beneficiary.

Table 20—Amount of food received

	1 direct child ration + 1 indirect child ration [N=41]		2 direct rations for children + 1 indirect child ration [N=2]	
Food commodity	**Amount allocated in kg**	**Average amount received in kg (Range)**	**Amount allocated in kg**	**Average amount received in kg (Range)**
Wheat-Soy Blend (WSB)	8.0	7.9 (5.7-9.8)	16.0	16.1 (15.6-17.0)
Soy-Fortified Bulgur (SFB)	10.0	9.5 (8.1-13.9)	10.0	10.3 (8.1-12.8)
Lentils	2.5	2.6 (1.0-5.6)	2.5	2.6 (2.5-2.7)
Oil	2.0	2.4 (1.7-2.7)	4.0	4.3 (3.8-4.7)

The data show that, on average, the amount received is close to the amount allocated. The difference between the average amount received and the allocation is highest for the SFB, with a difference of 0.5 kilograms (shown in Table 21). However, the variability in the gap between amount allocated and the amount received is quite high,

particularly for WSB, SFB, and lentils. Thus, some households are likely to have received much less than their allocation, and some other households much more. At the extremes, one respondent household received 2 kilograms less while another received 4 kilograms more SFB than was allocated.

Table 21—Differences between amount of food received and allocated

Characteristics	Mean [N=44]	Range
Gap between amount received and amount allocated (kg)		
- WSB	-0.07	-2.3 – +1.8
- SFB	-0.48	-1.9 - +3.9
- Lentils	+0.10	-1.5 - +3.1
- Oil	+0.22	-0.3 - +0.7
	Numbers	
Number of respondents who received correct amount of food (+/- 0.20 kg)		
- WSB	17	
- SFB	7	
- Lentils	30	
- Oil	22	
Number of respondents who received less food than they were allocated:		
- WSB	28	
- SFB	36	
- Lentils	10	
- Oil	7	
Number of respondents who received more food than they were allocated:		
- WSB	14	
- SFB	8	
- Lentils	24	
- Oil	33	

We assumed an acceptable gap between allocated amount and received amount to be +/- 0.2 kilograms and used this to derive the number of households who received the appropriate amount of food rations for their beneficiary category. By this yardstick, approximately half of the respondents received the correct amounts of lentils (n = 30) and oil (n = 22), and about 39 percent (n = 17/43) received the correct amount of WSB. The results are worst for the SFB, where only 16 percent (n = 7/43) received the correct amount (see Table 21). We also calculated the number of respondents who received less food or more food than they were allocated. The results show that the majority of respondents received less SFB than allocated (n = 36) and more than half received less

WSB than allocated (n = 28). In contrast, the number of respondents who received more lentils (n = 24) and oil (n = 33) than allocated is much higher than the numbers who received less of these foods.

In summary, a large proportion of the beneficiaries interviewed did not receive the amount of the different commodities to which they were entitled. There seems to be a systematic bias, whereby recipients are more likely to receive larger amounts of lentils and oil than allocated, but lower amounts of SFB and WSB. It is not clear whether the direction of these errors is purely coincidental, but it is unfortunate that the two commodities that seem to be generally distributed in smaller amounts than allocated are the two micronutrient-fortified commodities (SFB and WSB).

Quality of food commodities. Our observations of the quality of the food at the 10 FDPs focused on visible infestation of the food commodities with insects or worms, visible moisture, and/or any visible color change. These observations were done before the food was distributed to the beneficiaries. In addition, five bags each of WSB, SFB, and lentils were randomly checked at each distribution point to see whether the bags appeared moist on the outside and to check their expiration date. The expiration date of five containers of oil at each distribution point was also verified.

In only one distribution site, three of the five bags of SFB checked appeared visibly humid from the outside and the bulgur inside was lumpy. No other problems with the quality of the food were observed in any of the other FDPs. There were no expiration dates on any of the bags or containers examined at the 10 FDPs.

Data from the exit interview respondents (n = 45), from home interview respondents (n = 29), and from individual interviews with health agents (n = 20) also confirmed that visible infestations or alterations in the quality of the food are rarely noticed.

Use of Food Rations

This section presents the results on the use of food rations by the beneficiary families. The usual length of time the different food commodities lasted in the home, the types of recipes usually prepared with the food commodities, and the sharing and selling of the foods received are described. Table 22 shows that, on average, all the commodities were consumed within two-to-three weeks and none lasted for the entire month. The SFB, lentils, and oil tended to run out before the WSB. The WSB, which is the commodity with the highest fortification level of micronutrients and is intended for the beneficiary child, lasted, on average, approximately 3-to-3.5 weeks.

Table 22—Duration of use of food in beneficiary households, by number of rations received and by number of indirect beneficiaries

Duration	Mean [N=45]	Range
How long the food lasted (weeks)		
- WSB	3.4	2-8
- SFB	2.2	1-6
- Lentils	1.6	1-4
- Oil	2.3	1-6

Sharing of the food commodities among all family members was almost universal, especially for SFB and for lentils (Table 23). Although this was less true for the WSB, only approximately 40 percent of the households reported feeding the foods prepared with WSB primarily to the targeted child, as recommended by the program.

Consistent with the exit interview findings, the home interview respondents (n = 29) reported that the meals prepared with the food commodities were generally consumed by the entire family. The majority of respondents (close to 70 percent) also reported having shared food, either from time to time or regularly, with neighbors, other family members living outside the household, or even strangers (see Table 24). The sharing of food was in many cases motivated either by feelings of charity—a person was hungry, in a miserable situation, or simply not in the program—or by an obligation felt towards other family members, in the hope of receiving the same favor when they would

Table 23—Recipes prepared with the commodities (from exit interviews, n = 45)

Type of recipe	Frequency of preparation	Who consumed: Mainly beneficiary child	All children	Entire family
	(numbers)	(percent)		
Wheat-Soy Blend (WSB)				
Gruel	45	44	16	40
Dumplings	23	30	13	57
Fried snacks	14	36	21	43
Other (eat raw)	5	40	20	40
Did not consumer all (shared with others outside household	10			
Soy-Fortified Bulgur (SFB)				
Gruel	19	26		74
SFB cooked plain	23	9		91
SFB cooked with lentils or beans	45	11		89
SFB with leafy vegetables and dried fish	27	7		93
Other preparations	15	7		93
Did not consumer all (shared with others outside household	22			
Lentils				
Lentil sauce	41	5		95
SFB cooked with lentils	44	11		89
Other cereals cooked with lentils	33	9		91
Other preparations	2			100
Did not consumer all (shared with others outside household	12			

Table 24—Sharing and selling of food commodities (from home interviews, n = 29)

Characteristics	Numbers
Number of beneficiaries who shared food	20
Shared with whom:	
- Non-resident family members	10
- Neighbors	11
- Strangers	2
Reasons for sharing:	
- Person not in program	9
- Because person/family is hungry	8
- Because they are family	6
- Compensation for help	3
- God says so	1
- To avert jealousy	1
Number of beneficiaries who exchanged the food for other food	1
Number of beneficiaries who sold food to buy other necessities	3

be in need. Three respondents expressed that they sometimes compensated people who had helped them by offering them some of the donated food (either raw commodities or prepared meals). These people were either workers on their farm or a family member

who usually picked up the food at the distribution site. A few indicated that they shared the food with neighbors to avert jealousy or because God had said that one should share. Many of the respondents who reported having shared the donated foods mentioned that prepared meals using these foods were often shared with visitors who arrived when the family was eating.

SFB was by far the most frequently shared commodity (n = 19/29), followed by oil (n = 11/29), lentils (n = 10/29), and WSB (n = 1/12). The amounts reported for the last time they had shared food varied widely: (1) for the SFB, between 1 measuring cup and 1 local pot (about 2.5 kilograms); (2) for the lentils, between ½ cup and 4 cups; (3) for the WSB, 10 cups (only one family reported sharing the WSB); and (4) for the oil, between 3 ounces and 2 quarts. Although the amounts of SFB and oil were high in some extreme cases, the amounts *usually* given away were relatively small (i.e., between 1-to-12 cups for SFB and 3-to-18 ounces for oil).

Only three respondents confirmed that they needed to sell some of their food ration from time to time. All three voiced that they had been obliged to sell about ½ - 1 local pot of SFB (approximately 1.2-to-2.5 kilograms) in order to buy other necessities, such as soap, bleach to purify water, gas, spices, or rice.

In addition to these results, our fieldworkers reported on rumors about food selling that they heard from beneficiaries. There is a rumor that traders from Port-au-Prince come to buy the donated foods from the beneficiaries. As reported by some beneficiaries, they either wait not far away from the distribution site for the beneficiaries or they go from house to house to buy the food. Other beneficiaries mentioned that they got robbed when they returned home after 6.00 p.m.

Staff Perceptions about the Food Distribution Points and Suggestions for Improvements

Information about perceptions and opinions of the health staff regarding the FDPs was obtained in individual interviews with the 20 health agents and in five focus group discussions with *colvols*, MCHN supervisors, food monitors, and commodity supervisors.

Perceived Problems with the Food Distribution

Delays in starting the food distribution. Individual interviews with the health agents revealed that they perceive delays in the start of the food distribution due to the late arrival of the food to be a major concern (n = 17). At the same time, the health staff indicated that they understand the reasons for such delays; the *colvols* indicated that rain was a major obstacle for the timely arrival of the food at the distribution site, as was the availability of food at the regional warehouse on the scheduled day for the distribution. Most of the health agents (n = 16) also confirmed in individual interviews that the latter was a concern, but they pointed out that it did not happen frequently. Some of the health agents also attributed some of the delays to the bad conditions of the roads. The challenge of trying to adhere to the scheduled distribution dates and start times was also voiced in the focus groups with food monitors and commodity supervisors. They explained that bad roads, rain, breakdown of trucks, or administrative problems made timely arrival of the food at the distribution site difficult. In addition, they explained that the food stock at the regional warehouse was sometimes insufficient but that they did not receive the information on time to be able to communicate the change in the distribution date to the health team.

Beneficiary lists. In the individual interviews with health agents, a frequent concern was that the names of eligible beneficiaries were often missing from the distribution lists of the commodity team (n = 15). The discussants of the focus groups with food monitors and commodity supervisors also raised concerns about frequent differences in the number of eligible beneficiaries according to the monthly distribution lists compared to the master list that includes all beneficiaries with information on entry/exit dates in the program. They also indicated that beneficiaries did not receive their rations if their entry and exit dates did not figure in the master list or the ration cards, or if the name of a beneficiary appeared on two distribution lists of different zones.

Crowding at FDPs. Half of the health agents felt that there were too many beneficiaries at the FDPs. This concern was also mentioned by the discussants in the MCHN supervisors' focus group. Staff from the commodity team (food monitors and commodity supervisors), however, did not raise this point as one of their concerns.

Lack of respect for beneficiaries and health staff. In the three focus groups with the health staff (*colvols*, MCHN supervisors), the discussants expressed their view that food monitors lack respect toward the health agents and *colvols* and toward the beneficiaries. They felt that food monitors often treated the beneficiaries badly, even to the extent that they would not distribute the food ration to a person who was present at the FDP but did not hear his/her name called the first time because of the noisy environment. Also, the health staff felt that making beneficiaries wait in the sun the whole day to receive their ration was humiliating. MCHN supervisors expressed that the food monitors often viewed the health staff with suspicion. These points were also raised by a few health agents in the individual interviews. In addition, others indicated that there was a lack of dialogue and collaboration between the health staff and the food monitors.

Food handling. Several health agents as well as the discussants in the *colvols'* and MCHN supervisors' focus groups expressed concerns in relation to food handling during the distribution. They felt that the distribution process was often unhygienic. In addition, they indicated that the amounts of food received differed between beneficiaries at the same FDPs.

Bringing ration cards to FDPs. The individual interviews with health agents and the five focus group discussions all raised the concern of beneficiaries not bringing their cards to the FDPs. For the health staff, the main concern was that beneficiaries who were otherwise eligible were not given their food rations if they did not have their ration card, even if the health staff vouched for them. In addition, the *colvols* expressed that whether

beneficiaries who forgot their cards would receive food or not depended mainly on the food monitor's goodwill.

The commodity staff, on the other hand, were bound by the rules of the food distribution process, and explained that they were not allowed to distribute food to beneficiaries if they did not have their ration cards, except in cases where beneficiaries had recently entered the program and did not yet have cards. The commodity supervisors were more flexible, and expressed the view that they would distribute food rations to a beneficiary who forgot the ration card if the health staff confirmed the eligibility of the person and if the beneficiary was able to list the names of at least three indirect beneficiaries in order to verify that the person is a beneficiary registered in the master list. It could be that this potential for flexibility was not communicated well to the food monitors.

Suggestions on How to Improve the Food Distribution Process

The health agents recommended that the program management address the overall logistical and punctuality issues by providing support to ensure the timely arrival of the food at the FDPs and to enable adherence to the scheduled distribution dates. They also made two specific suggestions on how to reduce crowding, i.e., establishing smaller distribution points and scheduling beneficiaries from different zones to arrive at different times. They also recommended that additional efforts be made to ensure that all eligible beneficiaries receive their food. They suggested that this problem could be addressed by encouraging the health staff and the commodity staff to work jointly on the preparation of the lists. The health agents also recommended that hygiene in food handling be improved and that local containers be standardized to ensure that beneficiaries receive the amount of each commodity they are entitled to.

Beneficiary Perceptions about Food Distribution Points and Suggestions for Improvements

Perceived importance of the food rations. As expected the food distribution component of the program was well appreciated by the respondents. Many indicated that they particularly appreciated the WSB because it contains vitamins, which keep children healthy. Other respondents felt that the food distribution helped them to cope with food insecurity, and prevent hunger.

Perceived problems with the distribution process and the food. The problems expressed by the beneficiaries were also not entirely unexpected, considering our findings reported above. Most beneficiaries considered that the time involved in attending a FDP was a major obstacle to the use of the service, and it was due to a combination of the long distances traveled to and from the FDP and delays in the start of the food distribution. A significant number of respondents expressed concerns about the food, and especially the WSB and the SFB, which they believed caused diarrhea. In some cases, this was reported in adults as well as in children, but only when they first started to consume the product (50 percent). For others, diarrhea was believed to result when the foods were consumed frequently. It is important to recognize that in environments such as these rural Haitian communities, where the incidence of diarrhea is generally so high (Menon and Ruel 2003), it is difficult to tell whether the donated foods are really responsible for the reported diarrhea.

Only two respondents felt that the amounts of food received varied considerably. They explained that the local measures used were not standardized and that the quantity also depended on when a beneficiary was served. They felt that those who received the food early on during the day got less food than those who were served toward the end of the day. One respondent also expressed that beneficiaries were sometimes badly treated and that she felt a lack of respect from the food commodity staff towards the beneficiaries. She expressed that one's dignity should be preserved even if food is donated.

Suggestions for improvement. Only a few beneficiaries proposed suggestions on how to improve the food distribution. Their recommendations were very similar to those made by the health staff and focused mainly on ways to improve the logistics and punctuality issues. They also recommended that the program staff visit the local markets after a food distribution day to assess the extent of food selling. Finally, they indicated their wish that ration sizes be increased and that everybody receive food donations so that there is no need for sharing with nonrecipients.

Summary of Findings Regarding Operations at the Food Distribution Points

In summary, our data confirm the existence of logistical constraints related to the transport and distribution of food commodities in the study area. Transport problems, which affect the timely arrival of both food and staff, are difficult to overcome in areas such as the Central Plateau, which are characterized by extremely poor road conditions, especially during the rainy season. Other problems, such as excessive crowding and long waiting times, which are also affected by logistical constraints inherent to the environment, continue to be a challenge, but need to be addressed. Solving the measurement problems to ensure that beneficiaries receive the amount of food they are entitled to is also important for fairness as well as to ensure efficient use of resources. The sharing of food commodities is probably unavoidable, but the program should continue to emphasize the importance of prioritizing the targeted beneficiaries within the family, and the differential use of selected food commodities such as WSB for young children who have high nutrient requirements. The other commodities, which are provided specifically to complement the diet of other family members, can continue to be used for this purpose.

6. Program Management and Supervision, Work Environment, and Job Satisfaction of the Program Staff

Current thinking about the functioning of health programs suggests that the effectiveness of a program is likely to be influenced by the work environment of the frontline staff who are the key program implementers in the field (Dickin 2003). Since the ultimate goal of operations research is to identify operational problems and devise solutions to improve implementation, it is essential to understand the environment within which the program staff operates. This allows program planners to design solutions to implementation problems that are situated within the reality of the program work environment, rather than idealized solutions.

Therefore, as part of the operations research conducted in this study, we examined certain key aspects of the work environment of the frontline program staff in this program, i.e., the health agents, *colvols,* and food monitors, as well as their supervisors and other staff at regional and national levels. Since this was an exploratory phase of operations research, we used primarily qualitative methods to study the work environment in which the staff operates. The aspects of the work environment that we present here focus on factors that may have positive or negative influences on the job satisfaction of program staff. We also present a brief discussion of staff perceptions related to the supervision in the program. The roles and responsibilities of field staff at different levels of the programs are described above (Section 2) and the organizational structure of the program is illustrated in Annexes 1 and 2.

As in previous chapters, a short description of the methods used is presented first, followed by the results as they pertain to (1) positive influences on job satisfaction of the staff at different levels, (2) constraints to job satisfaction, and (3) supervision.

Methods Used to Assess the Program Work Environment and Supervision

Data were gathered using the following methods:

1. Focus group discussions with *colvols*, health agents, and MCHN supervisors (N = 5);
2. Focus group discussions with food monitors and commodity supervisors (N = 2).

The data from the focus groups were supplemented by semi-structured interviews with the national and regional health coordinators and the regional commodity officer.

The field notes and audiotapes from the focus group discussions were transcribed and then analyzed to identify specific themes that reflected staff responses to the broad categories of issues discussed in the focus groups. We examined the data to identify theme-based statements that reflected ideas, concepts, values, feelings, or emotional states.

Positive Influences on Job Satisfaction and Motivation of Program Staff

The data from the focus interviews with the program staff indicated that the staff generally has a very positive view of their job roles. The nature of their work in itself seems to have a major influence on their satisfaction with their job. In addition, the staff appears to be motivated by factors such as enjoyment of their work, their perceived contribution to the development of the communities where they work, and to behavior change. Less frequently, staff mentioned their professional status or the training they had received to be a motivating factor for them. Finally, a few mentioned their perceived value of the program as a motivating factor.

Perceptions about Job Roles and Responsibilities

The three major themes that emerged from interviews with health and commodity staff in relation to their current roles and responsibilities were (1) the feeling that their job entailed serious responsibility, (2) their role in contributing to behavior change of both individuals and communities, and (3) their sense of increasing confidence in their abilities to handle their responsibilities. In Table 25, an *X* indicates that the theme was present in the focus group transcript. The results indicate that feelings of serious

responsibility as well as confidence in their ability to do the job were seen across all focus groups, while sentiments about changing lives of the communities they worked with were primarily seen in discussions with health staff.

Table 25—Positive influences on job satisfaction and motivation: Perceptions about roles and responsibilities addressed in focus groups

	Themes		
Focus groups	**Work entails serious responsibility**	**Perception of changing lives and communities**	**Confidence with their ability to fulfill their responsibilities**
Colvols	X	X	X
Colvols	X		X
Health agents	X	X	X
Health agents	X		X
MCHN supervisors	X	X	X
Food monitors	X		X
Commodity supervisors	X		X

Serious responsibility and changing lives and communities. In all seven focus groups, the discussants voiced the view that they were engaged in serious activities. In addition, the members of the health teams, and specifically the *colvols* and MCHN supervisors, expressed the view that they were contributing to changing peoples' lives and pointed this out with pride. They also expressed their felt need or obligation to help mothers obtain more knowledge and thus have healthier children. The following statements illustrate some of the ways in which the health staff has internalized the goals of the program:

- "Facing my responsibilities in the program, I feel proud. I have the information on how a child develops, how the child should eat, and what a pregnant woman should do." (*colvol*)
- "When the implementation of the program started, the work was a little bit difficult. But today, with the testimonies I receive from mothers and beneficiaries, I feel that we play a role in the changes in the communities that are about to happen. That motivates me even more to continue so that we reach what we are looking for." (MCHN supervisor)

Confidence. The theme of confidence in their preparation and capacity to meet their responsibilities was also present in all seven focus groups. Health agents and *colvols* expressed that they felt they had the necessary information on child development and feeding and on the special needs of pregnant women in a number of ways. They also mentioned the importance of the recent training sessions in improving their self-confidence with their work. The following examples provide insights in how they perceived their own competence (self-efficacy):

- "The workload increases from day to day, luckily we have more training now, what makes me strong enough to do the work." (*colvol*)
- "We feel prepared for the responsibilities that we have now in the program, especially after the training we have received recently." (*colvol*)

Other Factors that Positively Affect Job Satisfaction and Motivation

From the previous section, it is evident that, in general, the health staff has a positive attitude about their responsibilities in the program. Additional factors that positively affect the satisfaction with their work are listed in Table 26 (an *X* indicates that the theme was present in the focus group transcript).

Table 26—Other positive influences on job satisfaction and motivation addressed in focus groups

	Themes					
Focus groups	**Enjoyment of work**	**Community development**	**Behavior change**	**Professional status**	**Training**	**Perceived value of the program**
Colvols	X	X	X		X	X
Colvols	X	X	X		X	
Health agents	X	X	X	X		
Health agents	X	X		X		
MCHN supervisors	X		X	X		X

Enjoyment of work. Enjoyment of the work is an important dimension of job motivation, and this theme was reflected across all focus groups with health staff. The statements made by the discussants related to the positive aspects of their work included

features such as enjoying working with people, getting to know other communities, or receiving training. Below are some examples of the ways they expressed these views:

- "Yes, we enjoy our work a lot. Thanks to the program, there are a lot of areas and people that I did not know before, and that I know now." (*colvol*)
- "When I say that I am fine, this is because I enjoy my work, although my zone is a very difficult one. It is not the money that motivates me, but the people." (MCHN supervisor)

Community development and behavior change. The focus groups revealed that the contributions made by the staff to the communities they served and to individual behavior change were substantial motivating factors for them. In addition, this source of motivation provides us with a sense of the commitment of the health staff to the well-being of the communities that they are involved with, and is a very positive sign for the program. The following quotes from the data illustrate some of the ways in which the contribution of community development and behavior change to job motivation were expressed:

- "Our motivation is the community development." (*colvol*)
- "Help the people in my community changing their behaviors, their mentality, this is my motivation." (health agent)
- "The fact that I start observing changes in the behavior of people is a motivation source for me." (MCHN supervisor)

Professional status. In the focus group discussions with health agents and MCHN supervisors, professional status was revealed as another factor influencing job motivation. The health agents specifically voiced that their own conscience and their commitment motivated them to be correct and honest in their work. Below are some examples of the ways this theme was expressed:

- "It's my professional conscience that motivates me." (health agent)

- "What motivates me are my will and my conscience. My conscience tells me that one should not lie to people, that one should not give false information. If I give an appointment, I must be the first to respect it." (health agent)

Training. The members of the health team described the training they had received as informative and practical and that it had provided them with both knowledge and new communication skills, which they felt they needed in order to do community work. This theme appeared as a motivating factor in the two focus groups with *colvols*. The following quote illustrates the ways in which the contribution of the received training to job motivation was voiced:

- "The fact that we have received training motivates us to do our job in order to achieve a behavior change of the people in the community." (*colvol*)

Perceived value of the program. A final motivational factor relates to the perceptions of the health staff concerning the value of the program for the community. Some of the views about the benefits of the program for the communities describe the satisfaction that the health staff felt from seeing behavior change in their communities as well as improvement in malnourished children. The following excerpts from focus group discussions provide illustrations of their views that their work and the program are worthwhile and beneficial for participants and the community:

- "These past years, we were sad seeing certain mothers who had behind them malnourished children. Today, we can't say any longer that this is the case; I only can love the work I do, because we played an important role in these changes." (*colvol*)
- "When the program makes one step, I have to do two, because when I arrived in my area, I realized that the mothers [in the program] didn't want to do exclusive breastfeeding; today, these mothers are encouraging other mothers in practicing exclusive breastfeeding. They compliment us because their

> children don't get sick any more. In one word, the program has done a lot and I am happy and proud because, thanks to our work in the communities, one can feel a huge engagement of the mothers to exclusive breastfeeding. In one word, the program works well." (MCHN supervisor)

The fact that the program staff perceives their job as entailing a serious responsibility toward the communities suggests that they are highly committed to the program goals. Their confidence in their ability to fulfill their role in the program is also a key element for the successful implementation of the program. Moreover, given that the staff recognize the importance of the training they received as part of the implementation of the new behavior change communication (BCC) strategy in 2003, it will be important to ensure that the program continues to strengthen this component of staff support. Other factors responsible for the high levels of work satisfaction and motivation of the health staff included their desire to help others, their sense of making a difference through their work, and their enjoyment of the job. Finally, the significance of the views related to the staff's perceived value of the program should not be underestimated. It has been shown in another context that when first-level workers perceive the program they are working for to be of value in their communities, they are more highly motivated and gain more satisfaction from their work (Dickin 2003).

Constraints to Job Satisfaction and Motivation

In spite of the generally high levels of satisfaction and motivation observed in the staff participating in the focus group discussions, our research also identified some features that have negative influences on general staff satisfaction.

In the transcripts of discussions with *colvols* and MCHN supervisors, a theme of occasional feelings of discouragement and dissatisfaction emerged. The following statements are examples:

- "Sometimes I feel discouraged; I don't find any more the power to do the work. From the moment you work for WV, it is inevitable that a moment comes when you want to leave. You do the work with passion, but sometimes, it is just too much." (MCHN supervisor)
- "When you do work that you are not supposed to do, and you then realize that no effort is made to facilitate your tasks, this is frustrating." (*colvol*)
- "We work at least as much as the health agents; why do they always benefit when there is a little improvement." (*colvol*)

The themes we identified that led to this type of discouragement or dissatisfaction can be characterized under four headings: (1) low salaries and problems with payment arrangements; (2) lack of transport and supplies to facilitate their work; (3) heavy workload and too many responsibilities; and (4) issues with planning and coordination between the different levels of the program (see Table 27; an *X* indicates that the theme was present in the focus group transcripts). Another theme related to discouragement and lack of motivation, which appeared only in the discussions with supervisors and higher management level staff, was the issue of administrative constraints and their negative impact on program planning and implementation.

Low salary and problems with payment. Adequate compensation for work done is a key component of job satisfaction, and as shown in Table 27, the theme of low salary and problems with payment appeared in all sessions with health agents and *colvols*. Overall, it appears that this level of staff feels particularly under-compensated for their efforts. In addition, delays in receiving their payments constitute another source of dissatisfaction for these staff members. Some examples of their frustrations related to their salaries are provided below:

- "The salary is too low, I have a family with three children and I don't manage to fulfill all my responsibilities—that's my biggest problem." (*colvol*)

- "The work increases from day to day, but the salary is not adjusted accordingly." (health agent)

Table 27—Constraints to job satisfaction and motivation addressed in focus groups

	Themes			
Focus groups	**Low salary and problems with payment arrangements**	**Lack of transport/supplies and problems with roads**	**Workload and number of responsibilities**	**Planning and coordination between different program levels**
Colvols	X	X	X	X
Colvols	X	X	X	
Health agents	X	X	X	X
Health agents	X	X		
MCHN supervisors		X	X	
Food monitors		X		
Commodity supervisors		X		

Lack of transport/supplies and problems with roads. Transport problems were expressed in six of the seven focus groups. The food monitors also expressed their concerns related to the difficult road and transport conditions in the Central Plateau, which result in delays in the arrival of the food (and, in some cases, the lack of availability of food) at the distribution points. Health agents and *colvols* mentioned that transport was a problem especially in relation to the distances between the areas they have to cover, the organization of Rally Posts (RPs) when they need to pick up vaccines at the program office or at a dispensary before starting the RP, and the home visits in remote areas. The MCHN and commodity supervisors expressed their concerns about the limited numbers of cars available, which constrains their supervision activities. Below are some examples of statements regarding the transport constraints experienced by the staff:

- "The problem that bothers us most is when you have to organize a RP in a very remote area compared to the area where you live and you have to walk the whole day with the thermos on your back before you arrive. It is indispensable to have transport facility (mule)." (*colvol*)

- "Our major problem is the lack of transport facilities. We have three cars and sometimes all three break down the same day, which paralyses all activities that day." (MCHN supervisor)
- "There are also logistical problems. You want to supervise a food monitor and you have to go in the same car with him to the distribution point; you can't find a car and you are supposed to be at all the distribution points." (Commodity supervisor)

In the discussions with the members of the health and commodity teams, the problem of supplies was also raised as a source of concern.

Workload and number of responsibilities. Health agents and MCHN supervisors complained about being responsible for too many areas and too many activities. The MCHN supervisors were concerned that their supervision responsibilities with health agents and *colvols* were suffering because of their many other activities, particularly with mobile clinics and pre- and postnatal consultations.

The negative sentiments related to staff workload combined frustrations due to increases in the program's expectations regarding their time involvement and their resulting lack of time to attend to other personal activities. The *colvols*, for instance, who were initially hired as community volunteers, were expected to help the program for only 15 working days per month. They were compensated with a small remuneration for these services, about 30 percent of the salary of a health agent. Typically, they also had other income-generating activities during the remaining days of the month. Health agents also complained about less time for their own activities. The following statements testify to their views:

- "Last year, *colvols* were asked to be available only for 12 working days per month. I attended Mothers' Clubs (MCs) meetings but just to listen; now, it is rare that I have one day per month for my personal activities, given my full

agenda. I have two localities under my responsibility, there a MCs to organize, home visits, I have four vaccination posts." (*colvol*)

- "The work has become much harder, but also more interesting, especially with the new methods. We now have more responsibilities and less time for our own activities." (health agent)

Planning and coordination. Problems in planning and coordination between levels in the program were raised in two focus groups. The health agents and *colvols* felt that supervisors and higher-level managers were sometimes not considerate of their own planning of activities in the field, even though they routinely submitted their work calendars to their supervisors. They also felt that improvised meetings and frequent changes in the MCHN program itself were problematic. The following example illustrates these concerns:

- "This happened to me once. I had a meeting with the mothers in order to cook one recipe. The mothers had brought all the ingredients and in the moment we wanted to start with the cooking, the office in Hinche asked me to come; I was embarrassed and didn't know what to do. Finally, I decided to go to Hinche." (*colvol*)

In general, it appears that there are many facets of the program staff's jobs that encourage and sustain their performance. At the same time, it is important to consider that the staff is burdened with heavy workloads and that they work under severe constraints. Inadequate financial compensation for their commitment, problems with the availability of transport facilities and supplies, and nonrespect for their planning of activities in the field were also voiced as sources of dissatisfaction. It is likely that occasional feeling of discouragement results in a desire to leave the program and affects program implementation. Thus, attempts to address these constraints will likely yield large benefits for the program, especially given the high levels of motivation and commitment among the program staff.

Perceptions About Supervision in the Program

The importance of adequate and supportive supervision is increasingly recognized as an essential element of effective program operations. The themes identified in the interviews with health and commodity staff in relation to supervision by their direct superiors were very diverse and ranged from primarily positive comments to some negative views of supervision.

The statements about the nature of the supervision received by the staff suggested that there were two generally positive perceptions of the supervision: (1) the feeling that supervision is stimulating and motivating; and (2) the view that one receives adequate technical guidance for problem-solving, planning, and other technical issues. Table 28 summarizes the frequency with which these two themes were addressed in the focus groups (an *X* indicates that the specific theme or value was expressed in the transcript).

Table 28—Positive perceptions of supervision addressed in focus groups

	Themes	
Focus groups	**Motivating**	**Adequate technical guidance**
Colvols	X	X
Colvols	X	X
Health agents	X	X
Health agents	X	X
MCHN supervisors	X	
Food monitors	X	X
Commodity supervisors	X	X

In addition to these very positive descriptions of the type of supervision received, discussions of the perceived level of support received from supervisors ranged from the feeling that one received some support from supervisors but not to the extent expected, to the rare but extreme view that supervision was sometimes demoralizing and negative.

Motivating supervision. In all seven focus groups, some of the discussants voiced the view that supervision and the supervisors' attitude were stimulating and motivating for them and helped them take their work more seriously and thus, perform better. In addition, the health agents and *colvols* expressed the feeling that their work was valued

when they received supervision visits. Another aspect was the effect that supervision visits had on the beneficiaries. Health agents and *colvols* mentioned that supervision encouraged the participating mothers and noted that this resulted in a higher participation in the program activities. The following statements illustrate the ways in which the staff perceived the stimulating and motivating character of supervision:

- "Our work is valued. The supervisors come to the field to visit us. They don't stay in their offices. That makes work important." (*colvol*)
- "The supervision does not only motivate us, it also motivates the mothers, because they understand that what we do is not an isolated effort, but that there is a whole organization behind our efforts to work for a better community." (*colvol*)

Adequate technical guidance. Discussants in all groups except the MCHN supervisors group brought up the value of the technical support features of supervision. Health agents and *colvols* expressed the view that the feedback provided during supervision helped them to improve their performance. The staff expressed their appreciation for the type of supervisory support that involves helping them when they forgot something in the education sessions, helping them plan their work, spending enough time with them, organizing meetings for all staff if they felt that a problem experienced by one person was relevant to the whole group, etc. Below are quotes that reflect the ways in which this theme was expressed:

- "Yes, I receive support of the supervisor when I have a problem because at each time I am visited by the supervisor, he always stays very long with me in order to give me advice in case I would have done a mistake." (*colvol*)
- "Yes, when we have problems we receive enough support. For instance, I was at a food distribution in Saltadere and I suddenly saw a car with my supervisor in it. As the beneficiaries were not in order, the supervisor came and helped

me to arrange them carefully. I had difficulties to start with the distribution but with his arrival, everything was solved." (food monitor)

A positive appreciation of supervisory support is implicit in the preceding comments. In contrast, a few of the comments had a negative dimension. This dimension was described as insufficient support or lack of support in case of problems, when they needed help with planning activities, or when they needed technical advice or wanted to have constructive feedback on their performance.

Summary of Issues Related to the Work Environment of Program Staff and Supervision

Our assessment clearly shows that staff at all levels of the program feel that they are engaged in important activities, which lead to improvement in the lives of the people and communities the program serves. Staff also appear to be highly motivated not only by the very nature of their job, but also by their perception that they are serving their communities and encouraging behavior change. Some constraints to job satisfaction include the perceived inadequacy of wages, the heavy workloads, and some largely unavoidable logistical constraints related to the environment in which they work. Overall, however, the results point to high levels of motivation and commitment of the program staff. Perceptions regarding the supervision received were also largely positive and indicated that, in general, the field staff felt well-supported and motivated by their supervisors.

7. Feedback to Program Management and Plan of Action Developed by World Vision to Improve Selected Aspects of Program Operations and Service Delivery

The results of this first round of operations research were presented by the IFPRI-Cornell University (CU) team in Haiti in February 2004. The general presentation of the results to private voluntary organizations (PVOs) and USAID staff was followed by a

one-and-a-half day meeting of the IFPRI-CU team and the World Vision (WV)-Haiti management staff. The main objectives of the meeting were

1. To review and discuss the findings of the operations research;
2. To discuss the constraints to implementation that were identified in our assessment and to identify potential solutions to address these constraints and to strengthen program operations and quality of service delivery;
3. To prioritize the constraints to be addressed and the potential solutions to be implemented, and to develop an "action plan" for implementing the corrective actions selected to strengthen the program and improve the quality of service delivery.

A matrix was used to guide the discussions and to facilitate prioritization of the constraints to be addressed by the program in the short term (see Table 29). The matrix consists of five columns; starting from the left-hand side, the first two columns list the operational constraints identified at the different service delivery points and for different activities; the next column lists the potential solutions identified by the management staff present at the meeting to address the different constraints, the fourth column summarizes discussions regarding the feasibility of adopting the proposed solution(s) in the short term; and the fifth column provides an assessment of the potential impact of addressing the different constraints identified on program operations as well as on the overall impact of the program on its targeted beneficiaries.

Thus, the matrix summarizes the process utilized by the IFPRI-CU-WV team to review and prioritize potential solutions to the constraints identified and to develop an action plan to implement future corrective actions. The three criteria used for the prioritization of constraints to be addressed were the following: (1) the possibility of identifying a solution (corrective measure) that was within the scope of current program activities; (2) the feasibility of implementing these corrective measures, given the program's current financial and human resources; and (3) the estimated impact of

implementing these corrective measures to strengthen a particular aspect of program operations on the overall program's effectiveness and impact. This latter criterion is important because it may be that for some aspects of the program, very simple and low-cost solutions exist, which if implemented, could have a major impact on operations and on the effectiveness of the program. By contrast, efforts to improve other aspects may not warrant the level of investment necessary to implement corrective actions because their overall potential to improve the programs' effectiveness is small. These aspects were carefully gauged in the discussions held in Haiti.

A summary of agreements on the corrective actions to be implemented by the program at the different delivery points is provided below and summarized in Table 29.

At the Rally Posts

The logistical constraints related to crowding, high participant/staff ratio, and time involvement for both staff and participants at the Rally Posts (RPs) were discussed in length, but few solutions were identified to solve these problems in the short term. Given that the program is already perceived as having a large number of health agents and *colvols*, it was not considered feasible to increase the number of staff at this time. It was also considered inappropriate to recommend a major effort to split existing RPs into smaller ones, because the staff is already stretched to their maximum, with health agents being responsible for up to nine RPs per month. It was agreed, however, that the management would continue to examine the situation on a case-by-case basis and that RPs that are clearly unmanageably large would be reexamined and split if deemed possible.

A suggestion was made by some of the health agents interviewed during the operations research to improve the training of *colvols* in order to increase the support they provide to the program. The management staff indicated that this measure had already been implemented and that *colvols* were now being included in all field staff training. The *colvols* had also recently been "promoted" and their salary was raised from 30

percent of the health agents' salary to 50 percent. This change was accompanied by a change in title, whereby the *colvols* are now referred to as "agents promoteurs de santé," or health promoter agents.

It was suggested that improving the venue of the RPs with some basic furniture, such as chairs, benches, and tables, could facilitate the logistics and organization of the RPs. The management staff agreed to follow up on this aspect and felt that it was feasible to mobilize community resources to improve the venue of the RPs.

Finally, the group revisited the program's proposed sequence of activities at the RPs that, according to our operations research, was not particularly effective in preventing bottlenecks at registration and long waiting times for participants. The group agreed on a revised sequence of activities to be tested and implemented if effective (see Table 29, second row, third column). The main changes in the proposed sequence of activities included (1) giving a number to each participant as they arrive at the RP, (2) weighing the children before they are registered, (3) evaluating the nutritional status and individual counseling of the mother along with registration rather than with weighing, and (4) providing the deworming tablets, vitamin A capsules, and oral dehydration salt (ORS) as the last activity for participants (along with immunization), rather than providing these at the time of registration.

It is hoped that these relatively simple modifications in the RP operations will help improve the flow of participants through the different activities, and reduce the time burden for both health staff and participants, making the RP generally more efficient and pleasant. Avoiding bottlenecks may also help improve the quality of services if it allows the health staff to dedicate slightly more time to each participant and if the overall environment is less crowded.

Education. The group agreed that it was worth pursuing efforts to increase the coverage of the education sessions by offering more than one education session at the RPs. It was felt that this could easily be achieved by ensuring that supervisors reinforce the importance of providing additional education sessions to accommodate late arriving

participants. There was a general consensus, however, that the RPs were not the most suitable venue for effective education, given the generally crowded, busy, and noisy environment and the number of activities taking place there simultaneously. It was therefore agreed that the education sessions at the RPs should be used to deliver simple messages on topics of general interest such as hygiene, immunization, or family planning. The RPs were to be considered as a complementary opportunity to cover additional topics and to reinforce some of the messages provided at the Mothers' Clubs (MCs) (the main venue for the education and behavior change communication [BCC] strategy). The team also agreed that supervisors needed to be more active in promoting the use of the 12-month calendar of education topics to ensure that participants were exposed to the complete set of topics planned by the program, which ultimately should help increase their general knowledge of health, nutrition, and hygiene.

Supplies. The lack of supply of vitamins, ORS, deworming tablets, and vaccines at the RPs appeared to be mostly due to a problem with the main providers (Ministry of Health, UNICEF, etc.). It was therefore considered important that the program management continues to pursue every effort to ensure constant supply of these important preventive health services, but no action was recommended for field staff, because it was considered to be outside of their control. High coverage of these preventive services is extremely important in the context of Maternal and Child Health and Nutrition (MCHN) programs as they are key complementary strategies to improve child growth, health, and survival, and should therefore continue to be prioritized by the program management.

Growth monitoring and promotion (GMP). GMP in the context of the WV MCHN program has two main purposes: (1) to identify malnourished children in the recuperative program communities; and (2) to communicate with mothers (from both preventive and recuperative groups) about their child's nutritional status and growth and provide individual counseling. For the first purpose, it is important to minimize measurement error in order to reduce misclassification of children during the screening

process. For the second purpose, i.e., to communicate with the mother, it is important that the health staff spend some time with the mother to inform her of the results of the weighing and nutritional status assessment, and to provide her with specific advice regarding her child's progress. Problems with both of these aspects were identified through our operations research and the solutions proposed at the meeting to address them are summarized below.

With respect to the measurement problems, again the group agreed that given the environment at the RPs and the equipment used to measure children, a certain level of error is to be expected. It was agreed, however, that retraining and increased supervision of the health staff will be used to minimize measurement errors and misclassification problems. One simple recommendation, which according to the results of our operations research could significantly reduce measurement error, is to make sure that the child's weight is recorded when the needle of the scale is stable (as opposed to when it is moving significantly). Plans to retrain and improve supervision of the plotting of children's weight on the growth card were also agreed upon.

The discussions on process of GMP and the communication with mothers led to an agreement that all mothers should be informed about the child's weight, nutritional status, progress since last weighing, and that some brief individual advice should be provided. The group was very clear about the limitations of conducting GMP in the context of the RPs, and especially with regards to the time that the health staff can allocate to individually counseling each mother about feeding and care actions relevant to her child's growth pattern. Given the crowded and noisy environment and the severe time constraints faced by the health staff, it was agreed that the brief advice would consist of praising and encouraging the mother if her child is growing well. If her child was not growing well, the advice would consist primarily of a recommendation to follow up with other program activities and to adopt the recommended practices discussed at the MCs (e.g., exclusive breastfeeding, use of enriched porridges, etc.).

At the Mothers' Clubs

Implementation of the new BCC strategy in 2003 required significant reorganization of the MCs, especially in the preventive program group. This is because the strategy emphasizes the importance of the timely delivery of education messages to mothers, based on the specific age and developmental stage of their child. This approach is based on the premise that a much greater impact on behavior change is expected if the intervention reaches the beneficiaries at their best learning moment. Our findings showed that there were still some problems with the reorganization of the clubs and that some mothers were in the wrong groups relative to the age of their child, and thus likely to receive education messages that were not particularly timely and relevant. Management staff agreed that improving this aspect of the MCs was feasible, since so much had been achieved already, but that it would require strengthening supervision in the field. The management staff emphasized the need to strengthen the training of the supervisors themselves to improve their understanding of the rationale for the recommended structure of the clubs and how to operationalize it. It was also agreed that one modification to the current system would be made in the preventive group, which now uses two age groupings for the MCs for beneficiary children: mothers of children 6-8 months and mothers of children 9-23 months. The change recommended was to replace these two groups with the two groups that were originally planned: 6-11 months and 12-23 months. These two groups are better balanced and include children with more similar needs relative to child-feeding practices. It was also agreed that the MCs with children 6-11 months would emphasize the differences in recommended practices for children 6-8 and 9-11 months of age regarding the number of meals, and the consistency and quantity of food.

Remarkable improvements in the quality of education delivered at the MCs were achieved since health staff were trained in the implementation of the new BCC strategy in 2003. The importance of effective supervision and feedback were emphasized during the meetings as being key to maintaining the quality of the intervention, and even more

important, to maintaining the enthusiasm and motivation of the staff, and the interest of the beneficiaries.

At the Food Distribution Points

The logistical problems related to the distribution of the food, and especially the transport of food and staff to the point of distribution, and the time burden of this activity for staff and beneficiaries were discussed at length in the meeting. The commodity team is fully aware of the problems highlighted by our operations research and many of the constraints identified have already been addressed since our data were collected. The commodity staff have been actively working on improving the logistics of the food distribution, including taking measures to improve local storage facilities. Transport and other logistical problems, however, can never be fully overcome in areas such as the Central Plateau, where road conditions are so bad and the availability of fuel continues to be a major constraint. These problems are systemic to the context in which this program operates. It is worth pursuing efforts to try to improve the situation, but flexibility and patience will always be required by staff at all levels and by the beneficiaries themselves.

Errors in the amount of food received by the beneficiaries are also difficult to avoid because of the types of measurement tools used and the overcrowding in the FDPs, but the management staff recommended that the existing supervision system be strengthened. This system consists of having the supervisors systematically verify the ration received by a subsample of beneficiaries as they leave the FDPs. This system is clearly worth reinforcing to minimize errors in food allocation, and consequently improve beneficiary satisfaction.

The communication difficulties that had been reported between the commodity staff and the health staff and beneficiaries respectively were also well understood by the management staff, who indicated that these cases had been addressed individually by the supervisors or regional coordinators. Continued supervision will be required to maintain good communication among all staff and with the beneficiaries.

Finally, the problems of hygiene in the distribution of food commodities, which had been raised in our operations research, had also been addressed in part by the program. Plastic sheets are now being used and the suggestion to provide gloves to food handlers was perceived as feasible. An additional suggestion was to provide a small compensation to the food handlers to motivate them to do their work more carefully and more hygienically. The possibility of acquiring large containers with a tap to distribute the oil more hygienically was also discussed. It is important to recognize that these proposed approaches to improving hygiene in the food distribution process will require identifying the financial means to acquire the materials proposed.

Final Comments

The action plan described above to address some of the operational constraints identified through our operations research relies almost entirely on a strong and effective supervision system. At the time of the meeting, the management staff indicated that they had already been taking steps to strengthen the supervision of the program at all levels, and the health team presented their newly developed supervision plan for the region. The high level of motivation of the staff documented in Section 6, and the generally positive attitude of the staff towards supportive and effective supervision should greatly facilitate implementation of the new supervision plan and its success in strengthening program operations.

The next round of operations research will be conducted in 2004, starting in June. This will allow some time for the WV team to experiment with the implementation of the corrective measures agreed upon. This next round of operations research will focus on assessing the effectiveness of implementation of these corrective measures and on studying the supervision structure as well as staff motivation. An additional objective of the next round of operations research will be to assess differences in implementation between the two program intervention groups to facilitate interpretation of the final impact evaluation findings.

Table 29—Summary of discussions held in Haiti with WV staff on the operations research findings and follow up actions

A - RALLY POSTS (RP)

Aspects/activities	Constraint(s) identified	Potential corrective action(s)	Feasibility of implementing corrective action(s)	Potential impact of improving this aspect on effectiveness and impact of program
Organization	Too crowded, too many beneficiaries; ratio of participants/staff is too high	Increase number of RPs	Not possible at this point; health agents already have too many RPs/month	- Will reduce staff and participants time burden and frustrations - May increase participation at RPs, which in turn may increase impact of program - May increase quality of services at RPs
		Increase staff (AS/*colvols*)	Not feasible in short-term because of program criteria and lack of resources	
		Continue to work on a case-by-case basis to split the RPs that are really too big and can be split	Feasible; already being done; should be continued.	
		Train *colvols* better so that they can help the health agents more	This is already being done; *colvols* have been included in all recent training; salary has also been increased and they are now referred to as "health promoter agents"	Will increase assistance that health agents receive and reduce their time burden.
		Improve venue of the RPs by providing basic furniture (chairs, benches, tables, etc.)	This will be done through mobilization of community resources	Could make the RPs more efficient and more pleasant for staff and participants.
	Registration is a major bottleneck; sequence of activities varies a lot between RPs and does not usually follow the implementation plan	The following sequence was recommended for the future: 1) give a number to each participant; 2) provide general education session 3) weigh child, plot weight on growth chart in health card; 4) do general registration (including register weight in registry); 5) evaluate nutritional status 6) inform and advise mother (see below in GMP) 7) give required immunization, deworming, Vitamin A and ORS	Feasible; the team has discussed several possible sequences and concluded that this one was probably the best choice; supervisors will assist health agents/*colvols* in implementing and testing this sequence	See above

Aspects/activities	Constraint(s) identified	Potential corrective action(s)	Feasibility of implementing corrective action(s)	Potential impact of improving this aspect on effectiveness and impact of program
Specific activities (organization and quality)				
1. Education	Still mostly one session, first thing in the morning and therefore many participants miss the session	Give at least two education sessions and if needed, up to three	Feasible; was done in some of the RPs observed; the supervisors will be key in motivating the health staff to comply with this recommendation.	Greater coverage of participating mothers; this may increase maternal knowledge and reinforce certain topics discussed at the MCs, thereby strengthening the BCC strategy
	Quality of education is non-optimal (messages tend to be vague, little use of visual materials, limited interaction between staff and participants)	May be difficult to improve, given crowded, busy, noisy environment; may be best to focus on simple topics and messages of general interest (e.g., ORS, immunization, family planning, etc.)	Feasible to focus on simple topics, ensuring that information is accurate and messages are clear and simple; supervisors will have to monitor this.	Following the 12-month calendar of education, topic will allow mothers to receive education on the full set of topics considered important and of general interest to mothers by the program. This can increase their general knowledge of health, nutrition and hygiene.
	Monthly education topics recommended by the program are rarely used.	Ensure that the calendar of topics is distributed to all supervisors; also ensure that supervisors work closely with health staff during their monthly meetings to reinforce adherence to monthly schedule of topics.	Feasible; requires greater communication between health staff and their supervisors and monitoring of implementation of the calendar of topics	
2. Vitamin A/deworming/ORS	Many participants do not receive the services and this seems to be due largely to a lack of supply of the products	This problem is due to lack of availability from the main providers (Ministry of Health, UNICEF, etc.)	This problem is outside of the program's control, but efforts should be pursued to ensure a constant supply.	These preventive health services are very important for child's health, growth, development and survival. Therefore it is important to achieve high coverage.

Aspects/activities	Constraint(s) identified	Potential corrective action(s)	Feasibility of implementing corrective action(s)	Potential impact of improving this aspect on effectiveness and impact of program
3. Growth monitoring and promotion	Children are weighed, their weigh is recorded and their nutritional status assessed, but there is little use of the information to communicate with the mother and to give her tailored individual advice regarding her child's growth and progress.	Retrain personnel to ensure that each mother receives the following information: 1) Child's weight 2) Child's nutritional status 3) Child's progress (gained or lost weight) 4) Brief message of encouragement (if child is growing well); and recommendations for follow up with other program activities (e.g., MCs) if child is not growing well. If child is M3, make sure s/he is scheduled for a home visit.	Feasible; will require that supervisors motivate staff and monitor that these actions are implemented	The information provided to mothers about their child's nutritional status and growth can help raise awareness among mothers and motivate them to engage more actively in the BCC activities and to adopt the recommended practices.
	The quality of the weighing and plotting varies; errors result in the misclassification of some children into the different Gomez categories, and thus in errors in screening beneficiary children (true only for the recuperative group, which uses children's nutritional status as a screening criteria).	Retrain health staff to improve the quality of the weighing (making sure that needle of the hanging scale is still before recording the weight will help). Retrain staff to improve their skills in plotting the child's weight in the growth chart.	Very feasible; can be achieved through good training and supervision.	Improving the weighing and plotting of the weights in the growth chart will reduce misclassification errors, thereby improving the cost-effectiveness of the program.
4. Immunization	Lack of supplies (similar to the problems of vitamin A, ORS, and deworming tablets)	See above (vitamin A, ORS, and deworming)	See above (vitamin A, ORS, and deworming)	See above (vitamin A, ORS, and deworming)

B- MOTHERS' CLUBS (MCs)

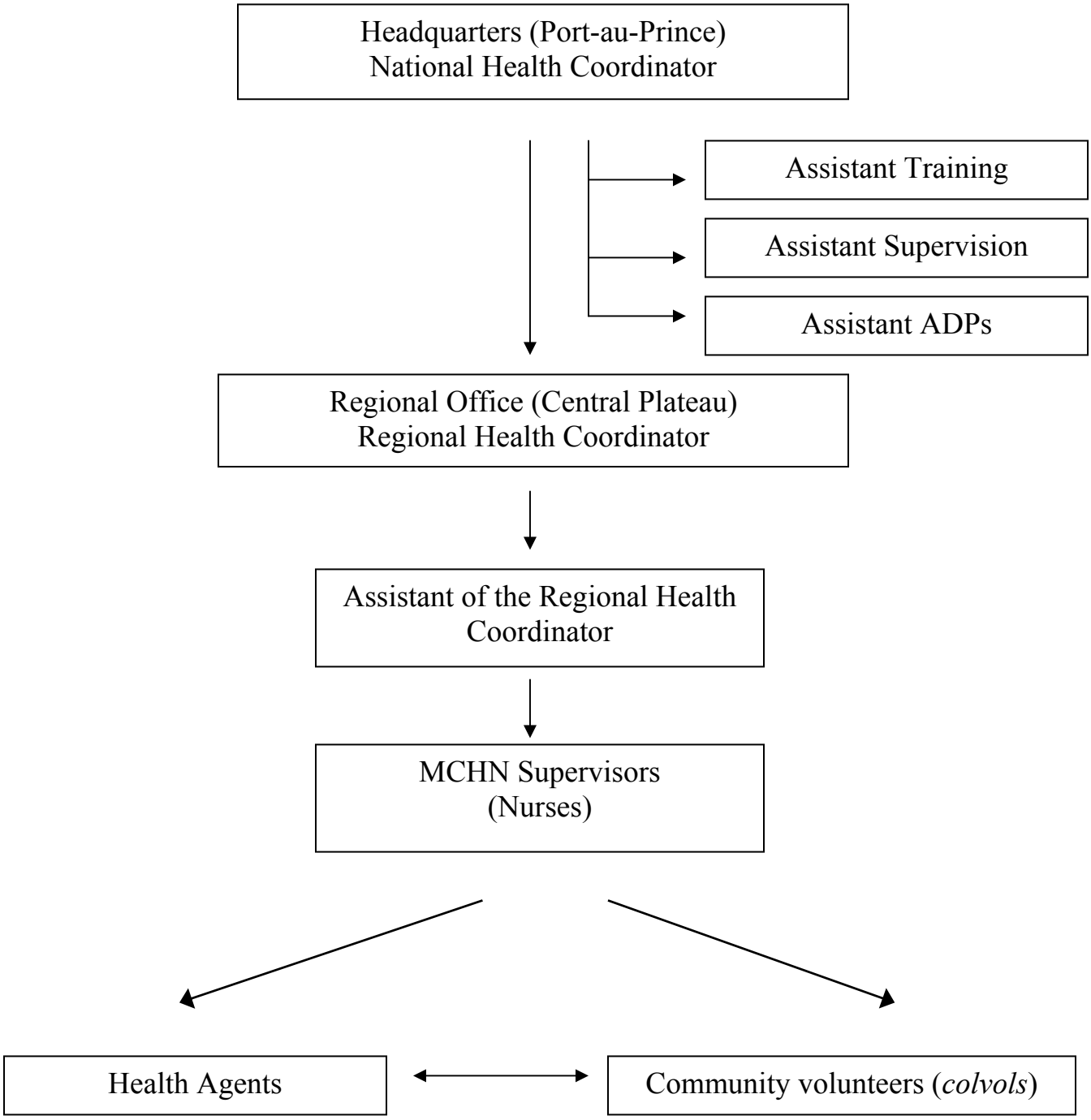
Aspects/activities	Constraint(s) identified	Potential corrective action(s)	Feasibility of implementing corrective action(s)	Potential impact of improving this aspect on effectiveness and impact of program
Organization	Problems with reorganization of MCs for different subgroups of mothers/children (especially in preventive group)	Ensure that supervisors understand the rationale for the reorganization of the clubs, and continue to reinforce importance of implementing this reorganization as planned. Slightly modify current system, which is to form two groups with 6-23-month olds (in preventive group): 6-8 and 9-23. Replace with the following two groups: 6-11 and 12-23.	Very feasible, but requires close supervision to ensure that groups are formed as recommended by the program and that mothers attend the groups they are assigned to.	The importance of the timely delivery of the education for the effectiveness of the BCC cannot be overemphasized. A much greater impact on behavior change is expected if the intervention reaches the beneficiaries at their best learning moment. Achievement of behavior change may, in turn, reduce childhood malnutrition.
Quality of the education and BCC intervention	Very good quality overall; marked improvements since development of BCC strategy and training of staff; performance varies, however, and continued improvements can still be achieved.	Strengthen supervision and on-going training of staff; strengthen the communication of concepts and technical content of the sessions, as well as the utilization of the communication material and the adult education techniques. Continue to use the supervision checklists to provide feedback to the staff and to monitor progress.	Very feasible; is already being done; important to continue to strengthen the supervision and feedback provided to the staff. Supervisors also need to monitor that enthusiasm and motivation of the staff and interest of beneficiaries are maintained over time.	The greater the quality of the BCC in MCs, the greater the potential impact of the program on improved child feeding and care and consequently on children's nutritional status, health, and development.

C - FOOD DISTRIBUTION POINTS (FDPs)

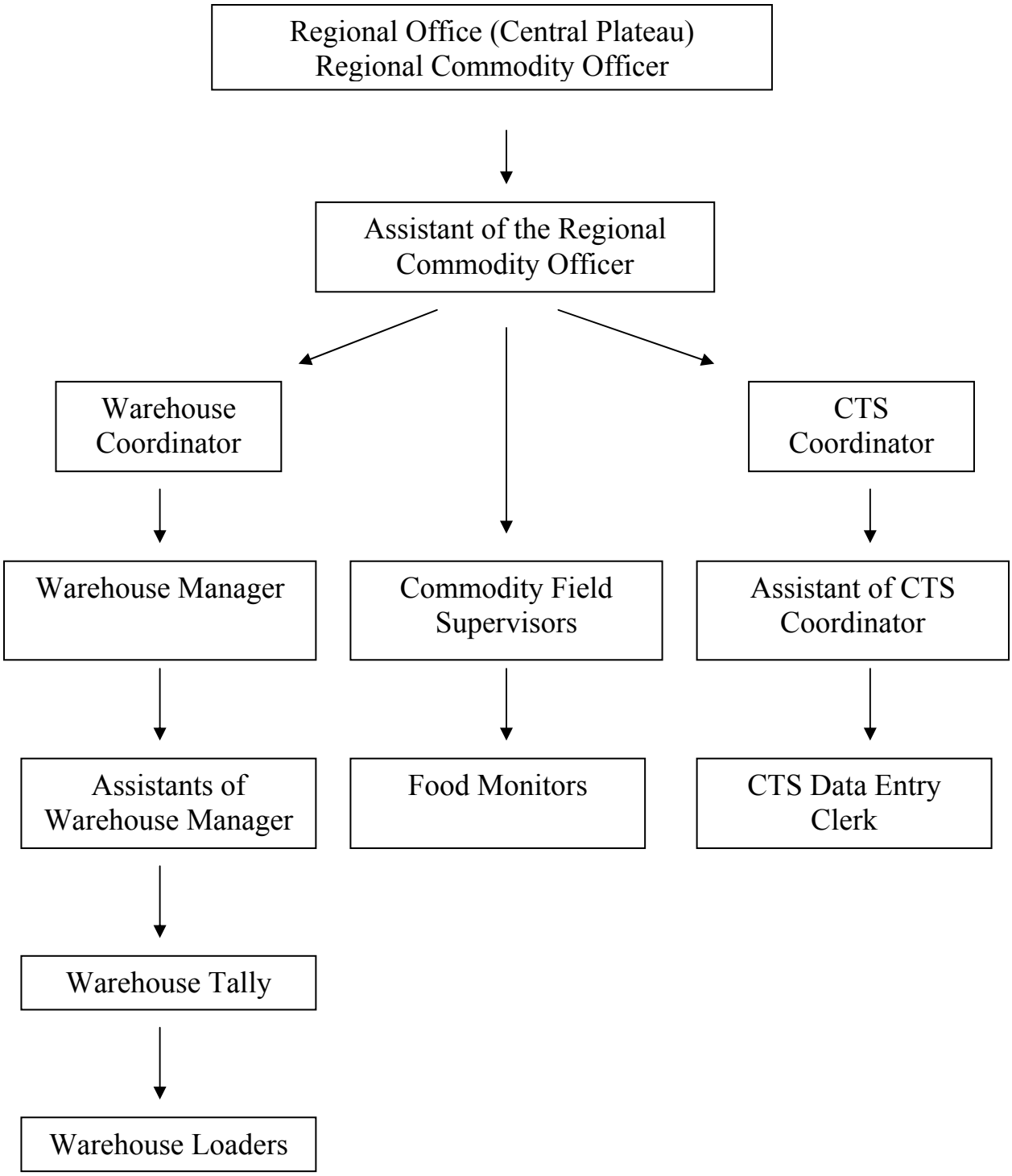
Aspects/activities	Constraint(s) identified	Potential corrective action(s)	Feasibility of implementing corrective action(s)	Potential impact of improving this aspect on effectiveness and impact of program
Organization	Very large number of beneficiaries per distribution point and high beneficiary/staff ratios	Some organizational aspects have already been addressed by the program and some are in the process of being resolved; the staff makes every effort to improve the logistics of the food distribution process, including improving local storage facilities.	Difficult to solve completely, because most logistical problems are inherent to the rough environmental conditions of the area.	Improving the logistics of food distribution could reduce the staff and beneficiary time burden and increase satisfaction.
	Important delays in arrival of food and staff at FDP			
	Very high time burden for beneficiaries (including travel time and time spent at the FDP) and staff			
Quality	Amount of food received by beneficiaries is not always the amount allocated by the program	A system is already in place to verify that the quantity of food received by the beneficiaries corresponds to the amount allocated.	Feasible; system is already in place. Need to ensure that check is done systematically on a sample of beneficiaries as they exit the FDP.	Could increase beneficiary satisfaction and reduce food losses.
	Communication difficulties have been reported between commodity and health staff and commodity staff and beneficiaries.	These problems are addressed on an ongoing basis, as they occur, by the supervisors or regional coordinators.	Very possible, already being addressed.	Could improve staff satisfaction with their work and beneficiary satisfaction with the program.
	Certain problems of hygiene in the manipulation of the food during the distribution process have been identified.	Suggestions made to provide gloves to food handlers and small compensation to motivate them to adopt more hygienic practices. Use of plastic sheets and cleaning of measurement tools have already been adopted. Possibility of acquiring large containers with a tap for the distribution of oil was also recommended.	Feasible, but requires financial means to acquire the materials proposed.	Would reduce the risk of contamination of the food.

ANNEXES

Annex 1: Organizational Structure of the Health Component of the Program



Annex 2: Organizational Structure of the Food Component of the Program



Annex 3: Schedules of Learning Sessions and Topics at Mothers' Clubs

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

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 (preventive program group)

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

c) Schedule of learning sessions at Mothers' Clubs for mothers of malnourished children 6 to 59 months of age (recuperative program group)

Month in the program	Mothers of malnourished children
1	Session 13 Causes of malnutrition Different types of malnutrition Recuperation of moderately malnourished children Introduction to the child development and feeding chart Preparation for the next session: preparing nutritious foods
2	Session 8 Preparing nutritious foods/cooking session Tasting and discussion Repetition of learning how to eat
3	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
4	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
5	Session 12 Child development and feeding chart (for children 12 months to 5 years 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 1 Importance of breastfeeding (initiation of breastfeeding, exclusive breastfeeding, continue breastfeeding until 2 years of age or beyond) Discouraging bottle use Comparison of recommendations with local beliefs and practices Other topics: Immunization
7	Session 11 Hygiene in food preparation, handling and storage – Diarrhea prevention Feeding during and after illness Other topics: Diarrhea
8	Other topics: HIV/AIDS
9	Other topics: Family Planning

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