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Cost Study of the Preventing Malnutrition in Children under 2 Years of Age Approach in Burundi and Guatemala

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Acronyms and Abbreviations

AED	Academy for Educational Development
ABC	activity-based costing
AB-CC	activity-based cost center
ABC-I	activity-based costing-ingredients
ANC	antenatal care
BCC	behavior change communication
BM	beneficiary mother
CHW	community health worker
CMAM	community-based management of acute malnutrition
COP	chief of party
CRS	Catholic Relief Services
CSB	corn-soy blend
CTNAN	national technical advisor for food and nutrition (*conseillère technique nationale pour l'alimentation et la nutrition*)
CTPAN	provincial technical advisor for food and nutrition (*conseillère technique provincial pour l'alimentation et la nutrition*)
DALY	disability-adjusted life year
DCOP	deputy chief of party
DHA	district health authority
DIP	detailed implementation plan
dl	deciliter(s)
EBS	basic health team (*equipo basico de salud)*
ENSMI	National Maternal and Infant Health Survey (*Encuesta Nacional de Salud Materno Infantil*)
FANTA	Food and Nutrition Technical Assistance III Project
FANTA-1	Food and Nutrition Technical Assistance I Project
FANTA-2	Food and Nutrition Technical Assistance II Project
FC	community facilitator (*facilitador comunitaria*)
FFP	Food for Peace
FFR	full family ration
FH	Food for the Hungry
FI	institutional facilitator (*facilitador institucional*)
g	gram(s)
GDP	gross domestic product
GM	growth monitoring
GMP	growth monitoring program
GTT	*Tubaramure* technical group (*groupe technique de Tubaramure*)

HAZ	height-for-age z-score
Hb	hemoglobin
HCA	host country agreement
IFPRI	International Food Policy Research Institute
IMC	International Medical Corps
IMCI	integrated management of childhood illness
ISTAR	integrated system for the transformational assessment and results
ISTEEBU	Institute of Statistics and Economic Studies of Burundi
kcal	kilocalorie(s)
kg	kilogram(s)
km	kilometer(s)
LDM	local determinants of malnutrition
LM	leader mother
LNS	lipid-based nutrient supplement
m	meter(s)
MAGA	Ministry of Agriculture, Livestock, and Food (*Ministerio de Agricultura, Ganadería y Alimentación)*
MC	Mercy Corps
MNP	micronutrient powder(s)
MOH	Ministry of Health
MQC	management quality coordinator
MUAC	mid-upper arm circumference
MSPAS	Ministry of Public Health and Social Assistance (*Ministerio de Salud Pública y Asistencia Social*)
MYAP	multi-year assistance program
NFR	no family ration
NGO	nongovernmental organization
NTA	national technical advisor
OIRSA	International Regional Organization for Plant and Animal Health (*Organismo Internacional Regional de Sanidad Agropecuaria*)
PDA	personal digital assistant
PEC	Program for the Expansion of Coverage (*Programa de Extension de Cobertura)*
PHA	provincial health authority
PMS	Minimum Services Package (*Paquet Minimum des Services de santé*)
PM2A	Preventing Malnutrition in Children under 2 Approach
PNC	postnatal care
pp	percentage point
PPS	planning and performance system
PREP	pipeline and resources estimate proposal
PROCOMIDA	Maternal and Infant Community Food Diversification Program (*Programa Communitario Materno Infantil de Diversificación Alimentaria*)
PSS	health services provider

	(*prestadora de servicios de salud)*
PSU	post-start-up
PTA	provincial technical advisor
RFR	reduced family ration
SAM	severe acute malnutrition
SAT	Superintendent of Tax Administration (*Superintendencia de Administración Tributaria*)
SBS	basic health services (*servicios básicos de salud*)
SESAN	National Secretary of Food and Nutrition Security (*Secretaría de Seguridad Alimentaria y Nutricional*)
SIAS	Integrated Health Care System (*Sistema Integral de Atención en Salud*)
SILC	savings and internal lending communities
SU	start-up
T18	*Tubaramure* 18
T24	*Tubaramure* 24
THP	*Tubaramure* health promoter (*promoteur de santé et nutrition*)
TNFP	*Tubaramure* no food during pregnancy
TPS	provincial health technician (*technicien provincial de santé*)
UNDP	United Nations Development Programme
US$	United States dollars
USAID	U.S. Agency for International Development
WAZ	weight-for-age z-score
WHZ	weight-for-height z-score
VS	community health monitor (*vigilante de salud*)
y	year(s)

Glossary of Terms

Accounting cost: Monetary cost of an expenditure for implementing the program, which is equal to the amount that is denoted on an invoice or found in bookkeeping records. For instance, the accounting cost of hired labor is the hourly wage rate, while the accounting cost of volunteer labor is zero.

Activity-based cost center: Cost centers are segments of organizational accounting in which costs are organized and used to control and regulate costs. In the activity-based costing-ingredients (ABC-I) approach, cost centers are based on the activity of the organization, and the inputs (or ingredients) included are those required to realize the activity.

Average cost: Calculated by dividing the total costs by output to get the average cost per unit.

Beneficiary: Recipient of the intervention (e.g., child, pregnant woman, and household).

Capital: Inputs such as buildings, machinery, cars, and equipment that are non-recurrent.

Cost analysis: Study of the costs of resources used in a program.

Cost-benefit: The ratio of the program's costs to its benefits when each cost or benefit is measured in monetary terms.

Cost center: Segment of an organization or activity by which costs are organized.

Cost-effectiveness: Estimate of the costs of the program versus the effects (impact) of the program. There is no attempt to measure the effects in monetary terms.

Direct cost: Cost that is directly traced to a unit of production.

Discount rate: Interest rate used to determine the present value of future cash flows.

Economic cost: Equal to the value of what could have been accomplished with the resources used to implement a program if used in their next best alternative. For instance, the economic cost of hired labor is equal to its accounting cost. However, the economic cost of volunteer labor is not equal to its accounting cost; it is equal to the value added of that labor if it was used in its next best alternative.

Expenditure data: Data detailing the out-of-pocket expenses for inputs used by the organization.

Financial cost: Out-of-pocket cost that is found in expenditure data.

Gross domestic product (GDP) deflator: Measures the ratio of nominal (or current-price) GDP to the real measure of GDP. It is an indicator of a country's inflation.

Indirect costs: Costs for resources and inputs that cannot be directly attributed to a particular program or production unit. Examples of these costs are overhead, administration, and security.

Nominal cost: Current cost of a good when inflation has not been controlled for.

Non-recurrent input (durable good): Good that does not wear out quickly and can be reused over a certain period, (e.g., medical equipment).

Post-start-up activity: Activity not classified as a start-up activity.

Present value: Value of a future monetary amount, discounted to the present date. Calculating the present value allows a program to compare cash flows and costs across different periods.

Real cost: Price of a good after inflation has been accounted for.

Recurrent input (non-durable inputs): Input that can only be used for a short time (e.g., labor, paper, and fuel).

Start-up activity: Activity only conducted once during the development of the program that would not need to be repeated to sustain the program.

Total cost: Cost of producing a fixed quantity of an output or implementing a program. Total costs can be measured as accounting costs or economic costs. In cost studies, economic costs are generally calculated.

Executive Summary

The Preventing Malnutrition in Children under 2 Approach (PM2A) is a preventive approach that has been shown to be more effective in reducing the prevalence of stunting, being underweight, and wasting than a traditional recuperative program model (Ruel et al. 2008). The Food and Nutrition Technical Assistance II Project (FANTA-2) commissioned a new study to evaluate the impact of this preventive approach by conducting impact evaluations of two PM2A programs in Guatemala and Burundi. The two programs had the same overall goal to improve the health and nutritional status of pregnant and lactating women and children under 2 years of age through three core program components: distribution of food rations, participation in behavior change communication (BCC), and utilization of quality preventive health services. In Guatemala, the program was called the Maternal and Child Food Diversification Community Program (*Programa Communitario Materno Infantil de Diversificacion Alimentaria)* (*PROCOMIDA*) and was implemented by Mercy Corps (MC) between 2009 and 2015. In Burundi, the program was called *Tubaramure* and was implemented by a consortium of nongovernmental organizations (NGOs) led by Catholic Relief Services (CRS). In each country, alternative versions of the PM2A program were evaluated in a subset of the implementation area. In Guatemala, the five alternative versions varied by the composition of the individual supplement—corn-soy blend (CSB), lipid-based nutrient supplement (LNS), or micronutrient powder (MNP)—and size of the family food rations (full, reduced, or none). In Burundi, the three alternative versions varied by the timing and duration of receiving food rations—from pregnancy until the child was 24 months of age (*Tubaramure* 24, or T24), from pregnancy until the child was 18 months of age (Tubaramure 18 or T18), and from birth until the child was 24 months of age (Tubaramure no food during pregnancy or TNFP). The effectiveness of these two programs has been evaluated and the results are included in two reports for Burundi* (Leroy et al. 2014; Leroy et al. 2016) and one for Guatemala (Heckert et al. 2016).

Cost studies were conducted in conjunction with the impact evaluations of these two PM2A programs to provide information on the total cost of the programs and estimate the cost of alternative versions of the programs. Providing cost-related information along with the benefits of alternative program versions can be useful for informing future programming activities. It is important to note that the cost analysis took into account the full scope of each program and not just the program costs related to the communities where the impact evaluations were conducted.

For the cost study, we used the activity-based costing-ingredients (ABC-I) method. The ABC-I method defines all the activities associated with program implementation and takes into account the ingredients, or inputs, used to achieve each activity. Specifically, with the ABC-I method we can transparently calculate cost estimates for specific program activities; take into account indirect costs; and disaggregate start-up, maintenance, and scale-up costs. In addition, this method allows for the use of different approaches to cost out the food commodities provided by the programs. To consider the relative cost-effectiveness of each alternative version of the program in each country, we used two approaches. The first was to calculate a cost-effectiveness ratio and the second was to consider an expanded range of program impacts. The first approach can only accommodate a single indicator and, although important, the ratio would be artificially high in an integrated program such as PM2A that aimed to achieve multiple impacts on children, mothers, and households. Thus, we also used the second approach to better account for these multiple impacts that lack a common metric.

*A summary of the results of the Burundi study, *Strengthening and Evaluating the Preventing Malnutrition in Children under 2 years of Age Approach in Burundi* (Leroy et al. 2018), is also available.

A detailed program description of the Guatemala and Burundi programs identified nine main activities for Guatemala, and eight for Burundi. The activities included the core components of program delivery, along with other activities conducted to support, monitor, and manage the core program components. All main activities had multiple subactivities.

The total cost of implementing the *PROCOMIDA* program was US$28 million. Over the course of the program, from 2009 to 2015, costs peaked in 2013 when the program was in full operation and had the most beneficiaries enrolled. The most expensive activity for the program was distribution of food rations and supplements, which accounted for almost 20 percent of program activity costs; combined with the supply and logistics to support this activity, 30 percent of program activity costs were spent on delivering the food rations. The second most expensive activity was the design and implementation of the BCC strategy, which accounted for 18 percent of program activity costs. When looking at different types of inputs, personnel costs were the most expensive, accounting for 50 percent of total program activity costs.

The *Tubaramure* program in Burundi cost about US$24 million over its 5 years of implementation (2009–2014). The shares of the program cost were similarly distributed across the last 4 years of the program (2011–2014), because of peak beneficiary enrollment in 2011 and 2012 and the continued cost of implementation as the program was winding down. The most expensive activity in Burundi was distribution of food rations, which accounted for 30 percent of total program activity costs; including the supply and logistics, food ration distribution was 44 percent of total program activity costs. The second most expensive activity was the management, planning, and administration activity, which accounted for 19 percent of total program activity costs. Personnel costs were also the most expensive input category for the *Tubaramure* program, at 67 percent of total costs.

The detailed program descriptions were then used to identify which activities would incur differential costs if one of the alternative program versions were to be the standard program throughout the implementation area. This information was then used to estimate the cost of implementing each alternative version as the standard program, and to calculate the cost per beneficiary for each of the five alternative versions of the *PROCOMIDA* program in Guatemala and each of the three alternative versions of the *Tubaramure* program in Burundi.

For the *PROCOMIDA* program in Guatemala, the three versions that provided the full family ration (FFR) did so at a similar cost between US$1,076 and US$1,086 per beneficiary. Versions that provided a reduced family ration (RFR) or no family ration (NFR) were less expensive. However, only the version of *PROCOMIDA* delivered with the FFR combined with CSB or MNP significantly reduced stunting. The FFR combined with either CSB or MNP also had the largest concentration of other positive program effects, including impacts on child feeding practices, household hunger, and whether children and their households were clean. The cost per beneficiary per percentage point reduction in stunting was US$97 when CSB was combined with the FFR and considerably more expensive, at US$161, when MNP was combined with the FFR. The FFR combined with CSB was the most cost-effective in reducing stunting; however, it also had the negative consequence of increasing maternal body weight, maternal anemia, and child anemia.

For the *Tubaramure* program in Burundi, the T24 version of the program provided food rations from pregnancy until the child was 24 months of age—the longest duration among the three program versions. This version was the most expensive, at US$766 per beneficiary. However, the returns on the T24 version were notably better than the returns on the other versions; the cost per beneficiary per percentage point reduction in stunting was US$108. The T18 version was more expensive at US$130 per beneficiary per percentage point reduction in stunting, and the TNFP version had no impact on stunting. Both the T24 and T18 versions increased child hemoglobin levels, and the T24 version reduced the prevalence of maternal anemia. Additionally, all three versions of the program had impacts on a range of program pathways, including maternal and child diet, household food security, and maternal knowledge.

1. Introduction

The International Food Policy Research Institute (IFPRI), in collaboration with World Vision-Haiti, Cornell University, and the Food and Nutrition Technical Assistance III Project (FANTA), provided the first programmatic evidence that the blanket targeting of a food-assisted maternal and child health and nutrition program to all children 6–23 months of age (preventive approach) was more effective in reducing the prevalence of stunting, wasting, and being underweight than the traditional recuperative approach based on targeting underweight children (weight-for-age z-score [WAZ] < -2) under 5 years of age (Ruel et al. 2008). The study, although highlighting the success of a preventive approach, left several questions unanswered; for instance, the absolute impact and assessment of the cost of the two approaches compared with no intervention were not included in the study. In addition, the study was not designed to assess the cost of alternative versions of the program model. In 2009, the Office of Food for Peace (FFP) at the U.S. Agency for International Development (USAID), through the Food and Nutrition Technical Assistance II Project (FANTA-2), managed by the Academy for Educational Development (AED), commissioned a new study to refine and strengthen the Preventing Malnutrition in Children under 2 Approach (PM2A). Burundi and Guatemala were selected as locations to implement the PM2A, and IFPRI and FANTA-2 were tasked with designing and carrying out a comprehensive research portfolio, including a rigorous evaluation of the cost of the PM2A programs in the two countries.

The three core PM2A program components were food, care, and health inputs: (1) a family and individual food rations, (2) a health, hygiene, and nutrition behavior change communication (BCC) strategy, and (3) a strategy to provide institutional strengthening of the local health care system and promote use of this system. The Guatemala and Burundi PM2A programs both included these three core program components, but each program had a different set of interventions designed to test specific research questions. In Guatemala, the Maternal and Child Food Diversification Community Program (*Programa Communitario Materno Infantil de Diversificacion Alimentaria) (PROCOMIDA)* was designed to answer questions related to the optimal size of the family food ration and the optimal type of individual food ration. Whereas the PM2A program in Burundi, named *Tubaramure* (Kirundi word meaning “let’s help them grow”), was designed to answer questions related to the optimal timing of the food ration and the duration of exposure to the program. The cost per beneficiary of each model in Guatemala and Burundi was assessed, and the different costs are presented in this report.

In Guatemala, *PROCOMIDA* served 357 health convergence centers. Of the 215 *PROCOMIDA*-eligible health convergence centers in the areas selected for the first wave of implementation, 120 were selected[1] to participate in an evaluation of the PM2A program. These 120 were randomly assigned to one of six arms (20 health convergence centers each). Services to the remaining 178 health convergence centers were added after the program was under way. The program was available to pregnant women and those with children younger than 24 months of age. All treatment arms were eligible for BCC and institutional strengthening from pregnancy until the child reached 24 months.

The treatment arms varied according to the size of the family food ration and the type of individual ration (**Table 1.1**). Arm A received a full family ration (FFR) of beans, rice, and oil and an individual ration of corn-soy blend (CSB). Arm B received a reduced family ration (RFR), which was a smaller quantity of rice, beans, and oil, and an individual ration of CSB. Arm C received no family ration (NFR), but did

[1] Health convergence centers serving a large number of communities (more than six) or a large population (more than 2,300 people) were not eligible for the study. Health convergence centers in the Lanquín municipality were also not eligible since there were too few of them. The 190 remaining health convergence centers were then stratified by the number of communities served (first stratum: one community; second stratum: two communities; third stratum: three to five communities). Within each stratum, sampling proportional to population size was used to randomly select health convergence centers.

receive an individual ration of CSB. Arm D received the FFR and a lipid-based nutrient supplement (LNS) for the individual ration. Arm E received the FFR and micronutrient powder (MNP) for the individual ration. Arm F was the control arm and did not receive any components of the *PROCOMIDA* program but continued to have access to regular Ministry of Public Health and Social Assistance (*Ministerio de Salud Pública y Asistencia Social*) (MSPAS) health services. The remaining 247 general enrollment health convergence centers received the same version of the program as arm A—the FFR and the CSB as the individual ration, along with BCC and the institutional strengthening of health services.

Table 1.1 The six study arms of the *PROCOMIDA* evaluation

	Study arm					
Program component	**A**	**B**	**C**	**D**	**E**	**F**
Food ration						–
Family ration (rice, beans, oil)	Yes	Reduced	–	Yes	Yes	–
Individual ration	Yes	Yes	Yes	Yes	Yes	–
CSB	Yes	Yes	Yes	–	–	–
LNS	–	–	–	Yes	–	–
MNP	–	–	–	–	Yes	–
BCC	Yes	Yes	Yes	Yes	Yes	–
Required health visits	Yes	Yes	Yes	Yes	Yes	–[a]

[a] Households in the control arm had access to the standard health services.

In Burundi, *Tubaramure* was implemented in 265 *collines* (i.e., the smallest geo-political division), and 60 *collines* were selected for the impact evaluation. For the evaluation, there were four research arms (15 *collines* each), which enabled the comparison of three different program versions to a control arm. All arms, including the control arm, had access to the government-run health system that benefited from the institutional strengthening component of the *Tubaraumre* program, and all treatment arms (but not the control arm) were eligible to participate in the BCC activities from the time a woman was pregnant until the end of the program period. However, the food component of the program varied. Arm 1 (T24) was eligible to receive food rations (individual plus family) from pregnancy until the child reached 24 months. Arm 2 (T18) was only eligible to receive food rations until the child was 18 months of age. Arm 3 (no food during pregnancy [TNFP]) was eligible to receive food rations until the child reached 24 months of age, but women could not receive them during pregnancy. Arm 4 was the control arm and did not receive the *Tubaramure* program but had access to improved health services since the institutional strengthening component was implemented at all the local health centers. In the remaining 205 general enrollment *collines*, the T24 version of the program was implemented.

1.1 Rationale for the Cost Study

This cost study provides unique information about the cost of the two PM2A programs. It is important to note that the cost study takes into account the full scope of the programs, including program activities implemented in the general enrollment areas, and not just those related to program implementation in the 60 *collines* and 120 health convergence centers involved in the impact evaluation. The impact evaluation, however, allows us to determine the program impact and evaluate the cost of the interventions, including an arm-specific analysis that compares costs according to variations in the composition of the nutritional supplements and size of the food rations distributed to beneficiary families in Guatemala, and according to the timing and duration of the provision of food rations in Burundi. Cost comparisons across the five

treatment arms in Guatemala and the three in Burundi may help refine future PM2A programming by providing important information about the relative costs of these different program models.

The activity-based costing-ingredients (ABC-I) methodology was chosen for the cost study because of its four main advantages: (1) it provides cost estimates for specific program activities; (2) it allows transparency in reporting of the levels and composition of costs; (3) it accounts for indirect costs; and (4) it allows estimation of start-up, maintenance, and scale-up costs (Fiedler 2009; Fiedler et al. 2007; Fiedler 2003).

1.2 Organization of the Report

The cost study report is organized into the following chapters: Chapter 2 discusses the cost study research methods, Chapter 3 describes the contexts in which the programs were implemented and the overall structure of the programs, Chapter 4 presents the cost centers that were identified for the programs, Chapter 5 provides a detailed description of the main activities of the PM2A programs, Chapter 6 presents a summary of actual program activity costs by year and cost center, Chapter 7 identifies how the costs of each activity differed across treatment arms, Chapter 8 describes how the program activity costs identified in Chapter 6 would have differed if a particular version of the program had been implemented in the general enrollment and study arms for each country program.

2. Methods

2.1 Approaches to Conducting Cost Studies

2.1.1 Costing Methods

The cost study used the ABC-I method, which builds on four costing methods previously described in the literature: the predictive costing method, the use of expenditure data, the ingredients method, and the activity-based costing (ABC) method. The **predictive costing method** uses budget records[2] of total program costs from previous years or from similar projects to predict the future program costs (Waters 2000). An advantage of predictive costing is that it can provide a quick estimate of a program's cost without extensive field research. However, predictive costing does not accurately reflect real program costs that are time- and location-specific. The use of **expenditure data** provides an inventory of all inputs purchased by the program and their costs. Expenditure data, however, are often aggregated at the level of cost centers (Levin and McEwan 2001), and if inputs such as capital costs are used for multiple activities or have a lifespan beyond the program, then costs will be overestimated (Creese and Parker 1994). The **ingredients method** emphasizes a "recipe approach" to estimate program costs (Drummond et al.2005; Shonkoff et al. 2003). It requires knowing (1) the inputs, (2) the quantities of the inputs used to realize the program, and (3) the cost per unit of the inputs (Fiedler 2003; Levin and McEwan 2001). The recipe is the algorithm that combines these three pieces of information to estimate the total program cost. Advantages of this approach are that inputs, quantities, and prices are transparent, and that the cost of specific inputs such as personnel costs can be singled out (Fiedler et al. 2007). One disadvantage, however, is that costs are not divided into program activities, which makes it difficult to compare costs with other programs. Finally, the **ABC method** calculates costs based on the main activities needed to implement and conduct a program.

The ABC-I approach combines the ABC and ingredients methods. These two methods are complementary: costing a program based on its activities necessarily takes into account all the inputs used for each program activity. Combining the two methods makes it possible to trace the costs for main activities to the program's products and services (Fiedler 2003; Tan-Torres Edejer et al. 2003; Waters 2000). The ABC-I approach uses activity-based cost centers (AB-CCs) to identify the costs associated with each of the various program activities. This helps differentiate the costs of all of the program activities and makes it possible to compare these costs with similar programs.

2.1.2 ABC-I Advantages

The main advantages of the ABC-I method are that it (1) provides cost estimates for specific program activities; (2) allows transparency in reporting the levels and composition of costs; (3) accounts for indirect costs; (4) divides estimated start-up, maintenance, and scale-up costs (Fiedler et al. 2008; Fiedler 2003); and (5) allows the use of alternative approaches to account for the food commodities provided to nongovernmental organizations (NGOs). Each of these advantages is explained in greater detail in the following section.

Advantage 1: Provision of cost estimates for specific program activities. In the ABC-I method, cost centers are based on activities, and the inputs are what is required to realize the activities. This is in contrast to traditional accounting methods that use costs centers to control and regulate costs. The ABC-I method uses AB-CCs to link inputs to associated activities and calculates the cost of each activity (Fiedler 2003; Tan-Torres Edejer et al. 2003; Waters et al. 2001). Each AB-CC must be mutually exclusive, and

[2] Consistent with Tan-Torres Edejer et al. (2003), we refer to recurrent and capital costs in the text.

the combined AB-CCs must be exhaustive of all program activities (Fiedler 2003; Tan-Torres Edejer et al. 2003). The sum of the costs associated with each AB-CC is used to estimate the program's total cost.[3]

Advantage 2: Transparency in reporting the levels and composition of the costs. The ABC-I method delineates all inputs used in each activity and separates the quantity and price of the good, which presents a clear path of how individual costs are estimated (Waters et al. 2001).

Advantage 3: Accounting for indirect costs. The ABC-I method accounts for indirect costs, such as the cost of support staff, utilities, and overhead. With other methods, these costs cannot be easily attributed to a particular program. The ABC-I method allocates these indirect costs to specific activities (Fiedler et al. 2008; Johns et al. 2003; Waters et al. 2001; Waters et al. 2006). For example, utility costs can be assigned according to the size of the office space used. Allocating indirect costs in this manner helps reduce error and bias in estimating program-related indirect costs (Creese and Parker 1994; Waters 2000).

Advantage 4: Estimation of start-up, post-start-up, and scale-up costs. The ABC-I method defines when activities occur and accounts for the useful life of inputs. Differentiation of inputs and activities by time makes it possible for the ABC-I approach to differentiate among (1) start-up costs, which are incurred to start an activity, (2) post-start-up costs, which are incurred to continue an activity once it is up and running (Fiedler 2003; Tan-Torres Edejer et al. 2003; Waters 2000); and (3) scale-up costs, which are associated with expanding a program to other areas or increasing the number of beneficiaries. Estimating these costs separately is useful for many reasons. For example, an NGO might receive funding for start-up activities but may have to bear the post-start-up costs of a program (Fiedler 2003). Or an NGO, donor, or policy maker may want to estimate the cost of scaling up a program. These costs may be less than the total program cost per additional beneficiary, since some start-up activities and program supplies (e.g., warehouses and office equipment) may be sufficient to scale up the program.

Advantage 5: Alternative approaches to account for the food commodities provided to the NGO. In all food aid programs, a large proportion of program resources are spent on food commodities, which are used in two ways. First, food commodities are used as an in-kind transfer of the donor organization to the implementing agency (food commodities are later monetized by the program implementer). Second, food commodities are distributed to beneficiaries as a program benefit. The ABC-I method can explicitly differentiate between these uses, as specific cost centers would be designated for the monetization and the distribution of food commodities.

2.2 Costing of the PM2A Programs

A two-step approach was used to calculate program costs. The first step, using the ABC-I approach, focused on the program's activities (sections 2.3, 2.4, and 2.5). This did not include the cost of the food rations (and supplements), which were managed separately. In the second step, the cost of the food rations was calculated (section 2.6). The food rations (and supplements) were not paid directly by the NGOs[4] (Fiedler 2003), but the economic costs were nonzero, since they could have been used for other programs or activities (i.e., USAID/Food for Peace [FFP] could have donated the food commodities to other programs).

[3] In the context of this cost study, costs are always measured as the economic costs. In Chapter 4, we discuss in more detail how costs are defined, collected, and estimated at the AB-CC level and how these costs are aggregated to estimate total program activity costs.

[4] The NGOs did not purchase the commodities; their costs, however, were part of the award (not in addition to it) and were managed by the NGOs

2.3 ABC-I Steps for Costing the PM2A Programs

The ABC-I method applied to the delivery of the PM2A programs in Burundi and Guatemala involved the following six steps: (1) development of a detailed program description, (2) identification of the AB-CCs, (3) identification of the inputs within each AB-CC, (4) design of the costing algorithms, (5) compilation of cost information for each input, and (6) calculation of the total cost. The following sections discuss the methods used in each step.

2.3.1 Step 1: Development of a Detailed Program Description

The first step was to establish the sequence of activities necessary to implement the program by developing a detailed description of each program activity, including the inputs needed and time line of events. For each activity, it was also important to define how the activity itself differed among the program treatment arms. The multi-year assistance program (MYAP) proposals that the implementing NGOs submitted to FFP were used to develop a preliminary list of the main organizational units and program activities. In Burundi, the MYAP proposal was also used to identify how activities and personnel were divided among the NGOs involved in program implementation (i.e., Catholic Relief Services [CRS], Caritas Burundi, Food for the Hungry [FH], and International Medical Corps [IMC]).

In both Guatemala and Burundi, key staff from the NGOs were invited to workshops in 2010 to further develop the description of program activities. During each workshop, the staff described the main activities, removed activities no longer part of the program, and added activities not described in the proposals. Since the PM2A programs were already in progress at the time of the workshops, efforts were made to capture all start-up activities. Likewise, program activities that had been defined but not yet implemented were also discussed. In Guatemala, two additional follow-up workshops were held later that same year to gather additional information on activities and to include staff that could not attend the first workshop. Throughout the duration of the program, annual interviews were held with key program staff in Guatemala and Burundi to update the description of program activities and to identify and capture changes throughout the life of the program and its closure. Final interviews were conducted by phone in 2014 with staff in Burundi, and in person in 2015 in Guatemala.

2.3.2 Step 2: Identification of AB-CCs

The detailed program description developed in Step 1 guided the identification of the AB-CCs. To maximize comparability between the Burundi and Guatemala programs, activities were analyzed to determine which AB-CCs were common to both countries. Then, the remaining activities were organized into AB-CCs that were unique to each country. Once the AB-CCs were defined, the activities needed to realize the AB-CCs were organized into sub-AB-CCs. AB-CCs and sub-AB-CCs were defined and listed until the entire PM2A program was exhaustively described (Chapters 4 and 5).

2.3.3 Step 3: Identification of Inputs within Each AB-CC

Inputs were divided broadly into two types: labor and supplies. Many of the activities in the PM2A programs were labor-intensive, and personnel costs, in some years, accounted for more than 50 percent of total program activity costs. For this reason, it was very important to understand the allocation of personnel time among AB-CCs. Labor inputs were identified by interviewing the personnel directly involved in each activity and by observing field activities.

2.3.3.1 Labor Inputs

To obtain detailed labor allocation for each activity in Guatemala, a list of all individuals needed to conduct each of the program activities was compiled. This list was then cross-referenced with an

employee list provided by the chief of party (COP), and any omitted individuals were added. For each year of program implementation, a labor diagram was produced to provide a complete picture of the program's personnel breakdown and main organizational units.

In late 2010 and early 2011, interviews were conducted with the manager of each *PROCOMIDA* organizational unit to collect detailed information on labor inputs (and materials, as described in the next section) necessary for each program activity. Each interview was conducted in person and lasted, on average, an hour. Following the interview with each unit manager, staff members in each unit were interviewed. If there was more than one person in a specific position, one was randomly selected for the interview. After the first set of interviews were conducted in 2010 and 2011, interviews were conducted annually (until 2015) to capture changes in responsibilities and program activities.

In Burundi, the first round of individual interviews with staff was conducted in 2012. Since the program was managed as a consortium, each of the implementing partners had a central office located in Bujumbura and provincial offices in Ruiyigi and Cankuzo, care was taken to understand the labor (and materials) distribution among locations. During the interviews, program staff members described their work activities, which assisted in identifying staff members who had been left out of an activity. If activities were conducted in both Ruyigi and Cankuzo, personnel from both provinces were interviewed. Follow-up interviews were conducted in 2013, 2014, and 2015. Interviews lasted between 30 minutes and 2 hours. If individuals were no longer employed by *Tubaramure* at the time of the follow-up interview, their direct manager reported their time allocation. Email was used to collect information if individuals were not available for an in-person interview. The final round of interviews was conducted in 2015 via email and phone call, because security concerns prevented in-person interviews.

As each round of interviews in Guatemala and Burundi was completed, four cross-checks were conducted. First was to review each interview for consistency, discrepancies, and thoroughness. Second was to check whether all activities described during the interview were included in the description of program activities to ensure that every individual's participation was included in the description. If an activity described could not be assigned to an existing sub-AB-CC, then either a new sub-AB-CC was added to the detailed program description, or an existing sub-AB-CC was modified. The third step was to verify that all labor hours for a given individual were accounted for. The final step was to review each interview in the context of the complete set of program activities and to ensure that all AB-CCs in the detailed program description were accounted for. If information was determined to be incomplete during any of these steps, then personnel were interviewed again in person or via email. For the first set of interviews, it was common for staff members to be interviewed twice. This was less common in later interviews, because staff duties often did not change and interviewers become more adept.

For some activities, it was more practical to observe and take notes on labor and supply allocation (e.g., food distribution and delivery of BCC lessons). In this case, field visits were made to a randomly selected list of distribution sites to monitor activities (and materials) used. Once these visits were made, notes were transcribed into labor input tables and reviewed.

2.3.3.2 Capital and Recurrent Costs

Knowing the materials necessary for each activity was essential in designing the cost algorithms. During personnel interviews and observational visits, the durable goods (contributing to capital costs) and nondurable goods (contributing to recurrent costs) needed for each activity were documented. Additionally, NGOs in both Guatemala and Burundi provided detailed finance sheets, which were used to identify expenditures for capital and recurrent supplies. In Guatemala, a list of capital items was also provided. The data from these sources were reviewed, cross-checked, and allocated to their appropriate sub-AB-CCs.

2.3.4 Step 4: Design of the Costing Algorithms

For each input, algorithms were designed that reflected how much of the input was used for each of the AB-CCs and sub-AB-CCs. To do this, non-personnel inputs were first classified as contributing to capital or to recurrent costs, and then AB-CCs were classified according to whether they incurred start-up or post-start-up costs. Both start-up and post-start-up activities could include capital and recurrent costs.

2.3.4.1 Capital Costs

Purchase prices for capital inputs were first annualized to calculate the yearly cost incurred to the program. An annualized cost represents the true cost to the program and allows the cost of capital inputs to be allocated across different years. Costs were annualized according to the time remaining in the program after the capital inputs were purchased, to incorporate their value over the life of the program (Tan-Torres Edejer et al. 2003). To annualize these costs, the purchase price was multiplied by the annualization factor (*AF*), which was determined by the discount rate (*r*) and the remaining duration of the program in years (*y*):

$$AF = (r(1+r)^y)/((1+r)^y - 1) \quad \textbf{(1)}$$

In all cases, a discount rate (*r*) of 3 percent was used (Tan-Torres Edejer et al. 2003). Both programs started in 2009; *PROCOMIDA* ended in 2015 and *Tubarmure* in 2014, and the remaining program time was calculated accordingly. The annualized costs were then allocated to capital costs for the year of purchase and for each subsequent year of program operation.[5]

Three capital cost categories were used: (1) transportation, (2) equipment, and (3) furniture.

Transportation: The capital cost of transportation (K_{at}^{T}) included the purchase of vehicles and motorcycles.

1. **Vehicles** (K_{at}^{TD})**.** Since similar vehicles had a range of purchase prices, the average costs were used instead of the individual costs of each vehicle.[6] First, the average annualized cost for each vehicle ($\overline{K_t^{TD}}$) was determined. Each project vehicle was assigned to a specific staff member and tended to be used for a variety of activities. The cost of the vehicles was thus assigned to activities proportional to the amount of time individuals spent on these activities. P_{ati} was thus calculated as the percentage of time (*P*) allocated to activity (*a*)[7] in time period (*t*) by individual (*i*). The total capital vehicle cost in time period (*t*) for activity (*a*) was:

$$K_{at}^{TD} = \overline{K_t^{TD}} * \sum_{i=1}^{I} P_{ati} \quad \textbf{(2)}$$

2. **Motorcycles and their protective gear** (K_{at}^{TM})**.** Once the total motorcycle and gear costs were annualized,[8] they were allocated to the activity in which personnel who used motorcycles worked. For instance, field technicians in Guatemala used motorcycles, whereas

[5] Assume a capital input was purchased for US$10,000 2 years before the end of the program. This cost would then be multiplied by the AF of 0.5226, resulting in an annualized cost of US$5,226. This annualized cost would then be assigned to the 2 years the capital input was used. Note that the annualization equation is not used for y=1.
[6] The majority of cars purchased were the same model and thus were purchased at the same price. However, some of the cars were a different model and thus purchased at a different price. Since a variety of models were purchased, the average price was used.
[7] Each AB-CC is typically composed of several different activities.
[8] The actual cost of motorcycles purchased was used instead of the average cost, since all motorcycles purchased in 1 year were the same model.

motorcycles were used by health promoters, provincial technical nutrition advisors, and BCC supervisors in Burundi.

In Guatemala, field technicians' work varied by field office location. First, $\overline{P_{ato}}$ was calculated as the average percentage of time (*P*) allocated to each activity (*a*) in time period (*t*) across all individuals (*i*) in office (*o*).

$$\overline{P_{ato}} = \frac{\sum_{i=1}^{I} P_{atio}}{I} \quad \textbf{(3)}$$

This value was then multiplied by the annualized capital cost of the equipment and aggregated across offices to obtain motorcycle costs per activity (*a*) in time period (*t*)[9]:

$$K_{at}^{TM} = \sum_{o=1}^{O} \overline{P_{ato}} * K_{to}^{TM} \quad \textbf{(4)}$$

In Burundi, costs did not vary by office location, and motorcycle costs were calculated as:

$$K_{at}^{TM} = \overline{P_{at}} * K_{t}^{TM} \quad \textbf{(5)}$$

Total capital transportation costs per activity (*a*) in time period (*t*) were then:

$$K_{at}^{T} = K_{at}^{TM} + K_{at}^{TD} \quad \textbf{(6)}$$

Equipment: Capital costs of equipment (K_{at}^{E}) were divided into three sub-categories: (1) office equipment, (2) warehouse storage and distribution equipment, and (3) other capital equipment.

1. **Office equipment** (K_{at}^{EQ})**.** Capital office goods could be allocated either to a particular individual or to general office use. In line with the calculation of transportation costs, an individual factor P_{ati} and office factor $\overline{P_{ato}}$ were used:

$$K_{at}^{EQ} = \sum_{i=1}^{I} P_{ati} * K_{ti}^{EQi} + \sum_{o=1}^{O} \overline{P_{ato}} * K_{to}^{EQo} \quad \textbf{(7)}$$

2. **Warehouse and distribution equipment** (K_{at}^{EW})**.** Specialized equipment to both store and repackage food commodities was used in warehouses in Guatemala and Burundi. Annualized warehouse and distribution equipment costs were allocated to the appropriate activity.

3. **Other capital equipment** (K_{at}^{EO})**.** Each program had inputs for specific program needs (e.g., t-shirts to identify program staff in the field). The annualized cost of these items was allocated to the particular activity for which they were needed.

The total annualized equipment costs per activity (*a*) for time period (*t*) were calculated as follows:

$$K_{at}^{E} = K_{at}^{EQ} + K_{at}^{EW} + K_{at}^{EO} \quad \textbf{(8)}$$

Office furniture: The average percentage of time (*P*) spent in each activity (*a*) in time period (*t*) by personnel based in that office (*o*) was calculated:

$$K_{at}^{F} = \sum_{o=1}^{O} K_{to}^{F} * \overline{P_{ato}} \quad \textbf{(9)}$$

[9] This implies, as for cars, that every activity that field technician were engaged in involved the use of a motorcycle.

The total annualized capital costs (K_{at}) for activity (a) in time period (t) was then calculated as:

$$K_{at} = K_{at}^{T} + K_{at}^{E} + K_{at}^{F} \quad \textbf{(10)}$$

The different capital inputs are summarized below (**Table 2.1**).

Table 2.1 Categories of capital inputs

Category of capital inputs	Description	Algorithm to calculate cost (K) for time period (t) and activity (a)
1. Transportation		K_{at}^{T}
i. Vehicles	Vehicles for program work	$K_{at}^{TD} = \overline{K_{t}^{TD}} * \sum_{i=1}^{I} P_{ati}$
ii. Motorcycles	Motorcycles for fieldwork	$K_{at}^{TM} = \overline{P_{at}} * K_{t}^{TM}$
2. Equipment and implements		K_{at}^{E}
i. Office equipment	Computers, monitors, and other office equipment	$K_{at}^{EQ} = \sum_{i=1}^{I} P_{ati} * K_{ti}^{EQi} + \sum_{o=1}^{O} \overline{P_{ato}} * K_{to}^{EQo}$
ii. Warehouse and distribution equipment	Equipment needed for storage and distribution of food and supplements	K_{at}^{EW}
iii. Other capital equipment	Other equipment needs not captured in previous categories	K_{at}^{EO}
3. Office furniture	Desks, chairs, and other furniture for program offices	$K_{at}^{F} = \sum_{o=1}^{O} K_{to}^{F} * \overline{P_{ato}}$

2.3.4.1 Recurrent Costs

Recurrent costs were directly allocated to the year in which they were incurred (i.e., only capital costs are annualized), and were divided into 12 categories.

Personnel and manpower (C_{at}^{L}): Annual salaries for each individual were obtained from the NGOs' finance departments. For some staff positions, exact salaries were not provided; salary ranges according to title and experience were provided instead. In these cases, the midpoint of the salary range was used. P_{ati}—the percentage of time allocated to activity (a) in time period (t) by individual (i)—was multiplied by the individual (i) and time-specific (t) annual salary (w_{ti}). The total personnel costs for activity (a) in time period (t) were:

$$C_{at}^{L} = \sum_{i=1}^{I} P_{ati} * w_{ti} \quad \textbf{(11)}$$

Materials and supplies (C_{at}^{S}): These inputs included office supplies such as pens, paper, and photocopying. Costs for these inputs were divided by office location (i.e., regional and central) in Guatemala and by NGO in Burundi. A factor $\overline{P_{ato}}$—across all individuals (i), the average percentage of

time spent on each activity (*a*) in time period (*t*) in office (*o*)—was used to calculate the cost of materials and supplies specific to activity (*a*) in time period (*t*):

$$C_{at}^{S} = \sum_{o=1}^{O} \overline{P_{ato}} * C_{to}^{S} \quad \textbf{(12)}$$

Media costs (C_{at}^{D})**:** These included public service announcements and were allocated directly to the activity that incurred them.

Transportation costs (C_{at}^{T})**:** These were separated into six categories: (1) registration fees, (2) vehicle fuel, (3) vehicle repairs, (4) insurance, (5) motorcycle fuel, and (6) motorcycle repairs.

1. **Registration fees (C_{at}^{TR}).** First, the average cost per vehicle for registration in time period (t) was calculated $\left(\overline{C_{t}^{TR}}\right)$. Similar to the approach for the capital vehicle cost, a factor P_{ati} was used to allocate cost across activities. Therefore, the cost of registration fees for vehicles in time period (*t*) for activity (*a*) was:

$$C_{at}^{TR} = \overline{C_{t}^{TR}} * \sum_{i=1}^{I} P_{ati} \quad \textbf{(13)}$$

2. **Vehicle fuel costs** (C_{at}^{TF})**.** Each program provided a breakdown of annual fuel costs by office in Guatemala (C_{to}^{TF}) and by NGO in Burundi. The first step in both cases was to determine which vehicles were used at each office (*o*) and which activities (*a*) these vehicles were used for. The second step was to calculate the average percentage of time that personnel who worked in a particular activity used the vehicle for transportation ($\overline{L_{ato}}$)[10].

   The total fuel costs per activity (*a*) in time period (*t*) were then:

$$C_{at}^{TF} = \sum_{o=1}^{O} C_{to}^{TF} * \overline{L_{ato}} \quad \textbf{(14)}$$

3. **Vehicle repair costs** (C_{at}^{TV})**.** The same methodology used to allocate fuel costs was also used for vehicle repairs. The total costs of vehicle repairs per activity (*a*) in time period (*t*) were then:

$$C_{at}^{TV} = \sum_{o=1}^{O} C_{to}^{TV} * \overline{L_{ato}} \quad \textbf{(15)}$$

4. **Vehicle insurance fees (C_{at}^{TI}).** Because the information available in the two countries differed, a different approach was used in each country. For Guatemala, the same approach that was used for registration fees was used for vehicle insurance fees. The average cost per vehicle for insurance in time period (*t*) was calculated $\left(\overline{C_{t}^{TI}}\right)$ and then allocated to activities using P_{ati}. Therefore, the cost of vehicle insurance for activity (*a*) in time period (*t*) was calculated as:

$$C_{at}^{TI} = \sum_{i=1}^{I} P_{ati} * \overline{C_{t}^{TI}} \quad \textbf{(16)}$$

   In Burundi, vehicle insurance was allocated according to the algorithm used for vehicle fuel and repairs, since insurance fees were divided by NGO:

$$C_{at}^{TI} = \sum_{o=1}^{O} C_{to}^{TI} * \overline{P_{ato}} \quad \textbf{(17)}$$

[10] The approach for the cost of fuel was different from that for the capital cost of vehicles and the recurrent cost of registration. Fuel and maintenance costs are applied directly to activities that require transportation. Registration fees and vehicle costs are the costs of just having the vehicle (i.e., even if it is not being used, these costs are still incurred).

5. **Motorcycle fuel costs (C_{at}^{TY}).** These costs were calculated by using information on the breakdown of motorcycle fuel costs by office (C_{to}^{TY}). Since only fieldworkers operated motorcycles, the amount of fuel spent by each regional office was allocated to the activity in which the fieldworker worked, for all activities that needed transportation. Or, in other words, the average percentage of time that personnel who worked in a particular activity used motorcycles for transportation was calculated ($\overline{M_{ato}}$). The value of $\overline{M_{ato}}$ was multiplied by the total motorcycle fuel cost for office (*o*) in period (*t*). These costs were then aggregated across offices to obtain motorcycle fuel costs per activity (*a*) in time period (*t*):

$$C_{at}^{TY} = \sum_{o=1}^{O} C_{to}^{TY} * \overline{M_{ato}} \quad \textbf{(18)}$$

6. **Motorcycle repair costs** (C_{at}^{TM})**.** The same methodology for calculating and allocating fuel costs was used to calculate motorcycle repair costs per activity (*a*) in time period (*t*):

$$C_{at}^{TM} = \sum_{o=1}^{O} C_{to}^{TM} * \overline{M_{ato}} \quad \textbf{(19)}$$

7. **Contracts for transporting food commodities** (C_{at}^{TC}): These costs included transportation of food commodities, both from ports of entry to storage facilities and from storage facilities to distribution sites. For each time period (t), the costs were allocated directly to the related activity (C_{at}^{TC}).

The total recurrent transportation costs for activity (*a*) in time period (*t*) were:

$$C_{at}^{T} = C_{at}^{TR} + C_{at}^{TF} + C_{at}^{TV} + C_{at}^{TI} + C_{at}^{TY} + C_{at}^{TM} + C_{at}^{TC} \quad \textbf{(20)}$$

Maintenance (C_{at}^{E}): Offices needed to be maintained and equipment repaired. The average amount of time that individuals in each office allocated to each activity was calculated, and this value was multiplied by maintenance costs of the office to allocate costs to activity (*a*) in time period (*t*):

$$C_{at}^{E} = \sum_{o=1}^{O} C_{to}^{E} * \overline{P_{ato}} \quad \textbf{(21)}$$

Utilities (C_{at}^{U}): Utilities included electricity, water, Internet, and telephone, and their costs were available by office location. The average amount of time that individuals in each office allocated to each activity during a particular time period was multiplied by utility costs by office (*o*) in order to allocate costs to activity (*a*) in time period (*t*):

$$C_{at}^{U} = \sum_{o=1}^{O} C_{to}^{U} * \overline{P_{ato}} \quad \textbf{(22)}$$

Rent (C_{at}^{B}): The average amount of time that individuals in each office spent in each activity in a particular time period was multiplied by the office-specific cost of rent. The cost of rent allocated to activity (*a*) in time period (*t*) was thus:

$$C_{at}^{B} = \sum_{o=1}^{O} C_{to}^{B} * \overline{P_{ato}} \quad \textbf{(23)}$$

Travel for program staff (C_{at}^{P})**:** Costs in this category included *per diem* and travel allowances for program staff to participate in international conferences and trainings, to visit program sites, and to attend in-country training activities (e.g., program staff attendance at trainings of health service providers).

1. **Conferences and trainings** (C_{at}^{PE}). Travel costs were directly allocated to the individual that attended the event and the associated activity (e.g., BCC and food distribution and commodity management).

2. **Program field travel** (C_{at}^{PP}). Travel costs were allocated differently in Guatemala and Burundi. In Guatemala, the annual cost of domestic *per diem* allowances by office was available. The average time spent in each activity was calculated per office for individuals conducting domestic travel. Then, the average percentage of time the field staff from each office worked in an activity during a time period ($\overline{P_{ato}}$) was calculated and multiplied by cost of *per diem* and travel allowances spent by each office T_{to}. The costs of *per diem* and travel allowances per activity (a) in time period (t) were:

$$C_{at}^{PP} = \sum_{o=1}^{O} T_{to} * \overline{P_{ato}} \quad \textbf{(24)}$$

In Burundi, costs for travel to and from program sites were broken down by individual (i) and could be directly allocated to the activity that required *per diem*:

$$C_{at}^{PP} = \sum_{i=1}^{I} C_{ati}^{PP} \quad \textbf{(25)}$$

Trainings for staff and service providers (C_{at}^{W}): This category included the cost of trainings for program staff and service providers. It also included travel and *per diem* costs for non-program staff who participated in trainings. Costs were directly allocated to the activity associated with the event (e.g., BCC and food distribution and commodity management) in the time period in which it occurred.

Sub-grants (C_{at}^{G}): Sub-grants included contracts and grants with local agencies, such as grants to NGOs for the institutional strengthening of health centers and payments made for monetization. Costs for the activities were paid as they were incurred throughout the program and were allocated directly to the activity in the time period in which they were incurred.

Consultations (C_{at}^{N}): Consultancy fees were primarily used for monitoring and evaluation activities in Guatemala and to develop BCC materials in Burundi. The costs were directly allocated to the specific activity and time period.

Miscellaneous (C_{at}^{X}): Other expenses included bank and cash-handling fees, training costs, and other professional fees that were not included in other categories. When possible, these costs were directly allocated to the activity that incurred them. Otherwise the costs were allocated equally among all activities implemented in that time period by the NGO incurring the cost.

Therefore, total recurrent costs (R_{at}) for activity (a) in time period (t) were:

$$R_{at} = C_{at}^{L} + C_{at}^{S} + C_{at}^{D} + C_{at}^{T} + C_{at}^{E} + C_{at}^{U} + C_{at}^{B} + C_{at}^{P} + C_{at}^{W} + C_{at}^{G} + C_{at}^{N} + C_{at}^{X} \quad \textbf{(26)}$$

Table 2.2 Categories of recurrent costs

Category of recurrent costs	Description	Algorithm to calculate cost (*C*) for time period (*t*) and activity (*a*)
1. Personnel and manpower	Labor	$C_{at}^{L} = \sum_{i=1}^{I} P_{ati} * w_{ti}$
2. Materials and supplies	Materials and office supplies	$C_{at}^{S} = \sum_{o=1}^{O} \overline{P_{ato}} * C_{to}^{S}$
3. Media	Public service announcements	C_{at}^{D}
4. Transportation		C_{at}^{T}
i. Registration fees	Registration of vehicles with state	$C_{at}^{TR} = \overline{C_{t}^{TR}} * \sum_{i=1}^{I} P_{ati}$
ii. Vehicle fuel	Fuel used for operating vehicles	$C_{at}^{TF} = \sum_{o=1}^{O} C_{to}^{TF} * \overline{L_{ato}}$
iii. Vehicle repairs	Repairs of vehicles used by program	$C_{at}^{TV} = \sum_{o=1}^{O} C_{to}^{TV} * \overline{L_{ato}}$
iv. Vehicle insurance	Insurance for vehicles used by program in Guatemala	$C_{at}^{TI} = \sum_{i=1}^{I} P_{ati} * \overline{C_{t}^{TI}}$
	And, in Burundi	$C_{at}^{TI} = \sum_{o=1}^{O} C_{to}^{TI} * \overline{P_{ato}}$
v. Motorcycle fuel	Fuel used for operating motorcycles	$C_{at}^{TY} = \sum_{o=1}^{O} C_{to}^{TY} * \overline{M_{ato}}$
vi. Motorcycle repairs	Repairs of motorcycles used by program	$C_{at}^{TM} = \sum_{o=1}^{O} C_{to}^{TM} * \overline{M_{ato}}$
vii. Contracts for transporting food commodities	Transportation of food commodities	C_{at}^{TC}
5. Maintenance	Office maintenance and repairs	$C_{at}^{E} = \sum_{o=1}^{O} C_{to}^{E} * \overline{P_{ato}}$
6. Utilities	Light, electricity, water, and Internet for offices	$C_{at}^{U} = \sum_{o=1}^{O} C_{to}^{U} * \overline{P_{ato}}$
7. Rent	Rent for regional warehouse and offices	$C_{at}^{B} = \sum_{o=1}^{O} C_{to}^{B} * \overline{P_{ato}}$
8. Travel for program staff	Reimbursements for travel related to program work	C_{at}^{P}
i. Conferences and trainings attended by program staff	Reimbursements for travel to trainings and conferences	C_{at}^{PE}

Category of recurrent costs	Description	Algorithm to calculate cost (*C*) for time period (*t*) and activity (*a*)
ii. Program field travel	Reimbursements for travel related to program field activities in Guatemala	$C_{at}^{PP} = \sum_{o=1}^{O} T_{to} * \overline{P_{ato}}$
	And, in Burundi	$C_{at}^{PP} = \sum_{i=1}^{I} C_{ati}^{PP}$
9. Trainings for staff and service providers	Cost of trainings, including *per diem* and travel allowances for non-program staff who participated	C_{at}^{W}
10. Sub-grants	Grants for regional NGOs and PSSs to conduct program activities	C_{at}^{G}
11. Consultations	Contracts for companies to conduct monitoring and evaluation projects	C_{at}^{N}
12. Miscellaneous	Other inputs that are not captured in previous categories	C_{at}^{X}

Abbreviation: PSS = health services provider (*prestadora de servicios de salud)*.

2.3.5 Step 5: Compilation of Cost Information for Each Input

The cost data collected from each PM2A program in Step 3 were compiled into spreadsheets. One spreadsheet was developed for each AB-CC (eight AB-CCs for Burundi and nine AB-CCs for Guatemala; see Chapter 4) per year (6 years for Burundi and 7 years for Guatemala) (i.e., 48 spreadsheets for Burundi and 63 for Guatemala). The algorithms developed for each input were used to calculate costs per AB-CC for each year of the program.

Costs listed on each spreadsheet were categorized as start-up or post-start-up by sub-AB-CC. In each section, there were rows for each cost category identified in Section 2.3.4. Costs for each category of inputs across all sub-AB-CCs were then calculated.

2.3.6 Step 6: Estimation of Total Activity Costs

In the final step, the total cost of each AB-CC and the total cost of the program were calculated. The total cost of an AB-CC was the sum of the costs of all its sub-AB-CCs, and the total program cost was the sum of the costs of all AB-CCs. Since the programs spanned multiple years, costs accounted for inflation and for discounting (i.e., future costs are valued differently than current costs). The next sections details the adjustments made to the costs of start-up and post-start-up activities.

2.3.6.1 Start-Up Activity Costs

Start-up activity costs (S_{at}) were calculated in an eight-step process. First, the start-up costs were separated from the post-start-up costs for each sub-AB-CC for each year of program implementation. Second, an additional 15 percent to account for indirect costs was allocated to each start-up activity.[11] Third, the cost of the start-up activity was annualized using equation 1, since the start-up activity was necessary for all subsequent program activities. Fourth, the annualized costs were adjusted for the annual

[11] Indirect costs were estimated at 15 percent of total program activity costs, from analyzing program data.

rate of inflation by converting the nominal cost into real costs using the GDP deflator for the base year (Dhaliwal et al. 2013). Dhaliwal et al. (2013) recommend deflating all costs back to a base year so that program activity costs are inflated over the correct number of years, regardless of the year of activity's implementation. Converting costs to a base year was done by dividing the discounted nominal start-up cost for a sub-AB-CC (C_{at}) by the GDP deflator (GDP_{Dt}):

$$C_{at}{}^{*} = {}^{C_{at}}/_{\text{GDP}_{\text{Dt}}} \quad \textbf{(27)}$$

Fifth, the present value of the annualized start-up activity costs were calculated. To calculate the present value of a good, the annual discounted cost ($C_{at}{}^{*}$) was divided by $(1+r)^{y}$, with r the discount rate and y the duration in years between the time of expense and the end of the program:

$$PV = {}^{C_{at}{}^{*}}\Big/_{(1+r)^{y}} \quad \textbf{(28)}$$

A 3-percent discount rate was used, as suggested by Tan-Torres Edejer et al. (2003). Sixth, the annualized start-up activity costs were adjusted to the year of analysis using the GDP deflator for the particular year (GDP_{Dt}) (Dhaliwal et al. 2013). The value calculated in these first six steps was the annualized start-up cost for a sub-AB-CC.

In the seventh step, the annualized start-up costs were assigned to the year the activity was first implemented and to each subsequent year of program implementation. In the final step, the costs of the sub-AB-CC start-up activities were summed across each AB-CC to obtain total start-up activity costs by AB-CC and by program year.

2.3.6.2 Post-Start-Up Activity Costs

Post-start-up costs (P_{at}) were calculated in six steps. First, input costs were summed across each sub-AB-CC for each program year. Second, indirect costs of 15 percent were allocated to each post-start-up sub-AB-CC. Third, costs were adjusted for the annual rate of inflation by converting the nominal costs into real costs using the GDP deflator for the base year (equation 27). Fourth, the present value of the annual costs was calculated (equation 28). Fifth, costs were inflated to the year of analysis using the GDP deflator. The final step was to sum the annual costs of all sub-AB-CCs within an AB-CC to obtain post-start-up activity costs for each AB-CC for each year of the program (Phillips and Fiedler 2007).

2.4 Total Costs of Program Activities

The average annual cost of start-up activities (S_{at}) for each AB-CC added to the cost of post-start-up activities (P_{at}) for each AB-CC was then the total annual cost for the AB-CC (C_{at}):

$$C_{at} = S_{at} + P_{at} \quad \textbf{(29)}$$

The total cost of the program was calculated by summing the activity-specific cost for each year (*t*) across all AB-CCs and then summing these annual program activity costs across all years (*T*) of the program:

$$TC = \sum_{t=1}^{T} \sum_{a=1}^{A} C_{at} \quad \textbf{(30)}$$

2.5 Calculating Costs by Treatment Arm and per Beneficiary

2.5.1 Activity Costs by Treatment Arm

The next step was to calculate the hypothetical cost of the *PROCOMIDA* and *Tubaramure* programs if any one of the treatment arms were implemented as the standard program[12] in both the general enrollment and treatment arm areas in either Guatemala or Burundi. The detailed program description (Chapter 5) was used to identify which AB-CCs and sub-AB-CCs would have been conducted differently, and thus would have incurred different costs if a single version of the program were implemented in each country. A summary of these differences is provided in Chapter 7.

For some sub-AB-CCs, it was possible to assign the cost (or partial cost) of an input to particular treatment arms. In these cases, the specific aspects that incurred differential costs were identified. We then stated how the cost of the sub-AB-CC would differ if each alternative version of the program were implemented as the standard program in all general enrollment and treatment areas.

In the case of other sub-AB-CCs, the activity was conducted for the entire program, but would have been less costly if only one version of the program had been implemented in each country. For these sub-AB-CCs, there were no data on the breakdown of costs across treatment arm. Therefore, we estimated the likely cost of the activity if it were to be conducted for a single treatment arm instead of a program with multiple treatment arms. Then, as with the other sub-AB-CCs, we stated how the cost of implementing each treatment arm as the standard program in all general enrollment and treatment areas would affect the cost of the sub-AB-CC.

This information was then used to adjust the quantity of the inputs needed to implement each sub-AB-CC conducted for each treatment arm. Using the same algorithms used to calculate actual program cost, the hypothetical cost to beneficiaries of implementing each treatment arm in both the general enrollment and treatment areas is presented in Chapter 8.

2.5.2 Cost of Program Activities per Beneficiary

Food ration distribution data, compiled in beneficiary databases by each of the two programs, were used to calculate the number of beneficiaries that participated in monthly food ration distributions according to treatment arm. For *Tubaramure*, monthly food ration distribution data were projected for the T18 and TNFP arms to account for the fact that beneficiaries in these arms participated in the complete program for longer than they participated in food ration distributions. The enrollment numbers for each version of the program were then applied to the entire program implementation area to determine the number of beneficiary-months[13] that beneficiaries would have received program services for each version of the program.

To calculate the average monthly cost of program activities per beneficiary for each treatment arm, the total cost of each treatment arm was divided by the number of beneficiary-months. The monthly cost of program activities was then multiplied by the average number of months of program participation to calculate the total cost of program activities per beneficiary.

[12] In Guatemala, the *PROCOMIDA* standard program was the same as treatment arm A (CSB+FFR). In Burundi, the *Tubaramure* standard program was the same as treatment arm T24.

[13] Beneficiary-months were used because new beneficiaries enrolled and graduated on a monthly basis. Additionally, in its first and final years, the program did not operate for the entire year. Providing services to one mother-child dyad for 1 year was equal to 12 beneficiary-months.

2.5.3 Cost of Food Rations and Supplements per Beneficiary

Beneficiaries in the *PROCOMIDA* and *Tubarmure* programs received a monthly individual and household ration. In Guatemala, *PROCOMIDA* distributed rice, beans, oil, and CSB. In Burundi, *Tubaramure* distributed oil and CSB. These food commodities were donated and shipped through FFP. Additionally, MNP and LNS were purchased for *PROCOMIDA*. The costs of the rations and supplements were not directly incurred by the implementing NGOs. Therefore, these were not included in the cost of program activities and were calculated separately.

For *PROCOMIDA*, the cost of the individual ration differed according to whether CSB, LNS, or MNP was provided, and the cost of the MNP dose differed according to whether the primary beneficiary was the child (6–23 months) or the mother (pregnant or had a child younger than 6 months). Additionally, family rations of different sizes were provided according to treatment arm. For *Tubaramure*, the size of the individual ration differed according to whether the primary beneficiary was the child (6–23 months) or the mother (pregnant or had a child younger than 6 months). The size of the household ration did not differ across treatment arms.

Prices of the commodities purchased by FFP (i.e., rice, beans, oil, and CSB) and the cost of shipping them were obtained using the 2016 commodity price estimates (USAID 2016). Invoices from the purchase of LNS and MNP were used to obtain the cost of the products and their shipping. These values were then used to calculate the monthly cost of the household ration and individual ration (including the cost of the commodity and shipping) for each treatment arm according to whether the primary beneficiary was the child or the mother. The monthly cost of each type of ration (i.e., individual and household) was then multiplied by the average number of months that the ration was received, to determine the total cost of food rations per beneficiary for the duration of the program.

2.5.4 Total Cost per Beneficiary

The total costs of program activities per beneficiary and food ration and supplements[14] per beneficiary were summed to calculate the total program cost per beneficiary.

2.6 Comparing Impacts and Costs

One way to help policymakers use evidence from well-conducted impact evaluations in their decision making is to combine the estimated impacts with the costs incurred to attain these impacts (Dhaliwal et al. 2013). This section discusses the limitations of cost-effectiveness and cost-benefit analyses and explains the approaches used in this report.

2.6.1 Cost-Effectiveness and Cost-Benefit Analyses

First, **cost-effectiveness analysis** calculates the amount of "effect" on one specific outcome for a given cost. If a program's objective is to increase hemoglobin (Hb) levels in children, the cost-effectiveness could be expressed as the change in Hb per US$100 spent on the program. An important limitation is that a cost-effectiveness ratio can only be calculated for one outcome at a time. For a program with multiple objectives (and thus outcomes), cost-effectiveness ratios can be calculated for each outcome, but these cost-effectiveness ratios will be artificially low, because the impact on each outcome is divided by the full cost of the program. Thus, they will suggest a relatively high cost for a given effect. Said differently, a cost-effectiveness ratio does not take into account that some program activities may have contributed to

[14] For *PROCOMIDA*, both food commodities (i.e., rice, beans, oil, and CSB) and supplements (i.e., LNS and MNP) were distributed, whereas in *Tubaramure*, only food commodities (i.e., CSB and oil) were distributed.

more than one program outcome.[15] This issue is of particular importance in nutrition-sensitive integrated programs, such as PM2A, in which the integration of activities related to food, health, and behavior change communication is meant to improve a wide range of outcomes.

Cost-benefit analysis can account for impacts on multiple outcomes by combining different outcomes onto one scale. One approach is to assign a monetary value to each of the program impacts. The advantage of using a monetary scale is that the cost-benefit analysis provides information on the rate of return on the investment. One important limitation is the challenge of accurately assigning monetary values to benefits. This is more straightforward for some outcomes (e.g., one additional year of schooling) than for others (e.g., a 0.1-g/dl increase in Hb). Another scale often used in cost-benefit analyses are disability-adjusted life years (DALYs). DALYs are a measure of disease burden, presented as the number of years lost due to ill health, disability, or early death. DALYs can be used for health-related outcomes, but not for outcomes such as nutrition knowledge.

2.6.2 Comparing Impacts and Costs of the PM2A Interventions

The PM2A programs in Guatemala and Burundi integrated food, health, and BCC program activities. As explained in greater detail in subsequent chapters of this report, the *PROCOMIDA* and *Tubaramure* programs provided beneficiary families a family food ration and an individual food ration; implemented a strategy both to provide institutional strengthening of the local health care system and to promote the use of this system; and organized a health, hygiene, and nutrition BCC strategy. The primary objective of the intervention was to improve child nutritional status; the primary measure for this outcome was child linear growth. Given the program's integrated nature, program impact was also assessed on a large set of household outcomes (e.g., food security), maternal outcomes (e.g., hemoglobin, knowledge, and practices), and child outcomes (e.g., hemoglobin, motor and language development, and morbidity). A simple cost-effectiveness analysis that focuses on child linear growth will, as explained above, underestimate the program's cost-effectiveness (i.e., make the program look too expensive). A cost-benefit analysis is not feasible, given the lack of a common metric to capture impacts across the wide range of outcomes.

To reflect the full set of benefits the program's investment generated, we adopted the following approach. We first calculated the cost per beneficiary household and the cost-effectiveness with respect to child linear growth. We also listed the impacts on other outcomes. Using this approach, we demonstrated the broad range of "returns" on the PM2A investment, which was more informative than simply presenting the otherwise "naïve" cost-effectiveness ratio.

[15] A comparison of cost-effectiveness ratios for programs that increased children's time in school, conducted by J-PAL, found that the Mexican *Oportunidades* program had an effect of 0.03 years per US$100. The ratio for the most cost-effective program was 20.7 years/US$100, or 690 times higher (Dhaliwal et al. 2013). The *Oportunidades* program, however, had positive impacts on a wide range of other outcomes in health and nutrition. The cost-effectiveness ratio thus makes the *Oportunidades* program look artificially cost-ineffective for the education outcome.

3. Program Setting and Design

In both countries, the PM2A programs were developed taking into account the pre-existing health care system; the nutritional status of children under 2; and geographical, technical, and research considerations. Understanding the pre-existing conditions was necessary to compare the inputs used and thus the overall costs of the PM2A programs in Burundi and Guatemala. This chapter includes background information on where the programs were implemented and a description of the PM2A programs in each country and their respective time lines.

3.1 Guatemala and *PROCOMIDA* Background

3.1.1 Country Profile

Guatemala is the most populous country in Central America, with more than 16 million inhabitants (World Bank 2016). The population includes more than 20 different indigenous groups, primarily of Mayan descent, who account for more than half the population (Minority Rights Group International 2008). In 1996, Guatemala ended 36 years of civil war when the Peace Accords were signed with the hope that changes would improve the livelihoods of the indigenous population. However, socioeconomic indicators reveal that the country is still recovering from the impact of war. The country suffers from high unemployment rates, and disparities between non-indigenous and indigenous populations remain a substantial problem, especially in relation to income, land ownership, and health outcomes.

The GDP per capita is US$7,250; thus, Guatemala is classified as a lower-middle-income country. The Gini index of 52.4 suggests a high level of income inequality (World Bank 2016), and this inequality is largely concentrated among indigenous people, of whom 73 percent are poor compared with only 35 percent of non-indigenous people. The majority of the population has received at least some education (79.8 percent of women, 87.5 percent of men), and the literacy rate of 77.0 percent (72.1 percent among men, 82.7 percent among women) reflects this. As with other indicators, there are educational disparities between rural and urban populations and between indigenous and non-indigenous ones. Among women, 28.8 percent in rural areas and 10.0 percent in urban areas have not attended school; comparing indigenous women with non-indigenous women, 34.7 percent and 11.1 percent, respectively, have not attended school (MSPAS 2011). Among men, the disparities are similar. Specifically, 18.4 percent of men in rural areas compared with 5.4 percent in urban areas have not attended school, and 18.8 percent of the male indigenous population compared with 6.9 percent of the male non-indigenous populations have not attended school (MSPAS 2011). Current life expectancy at birth is 71.5 years (World Bank 2016) and is 13 years shorter among indigenous people (International Work Group for Indigenous Affairs [IWGIA] 2015).

The agricultural sector accounts for 11.5 percent of GDP, and 32.7 percent of the labor force is employed in this sector, including 10.9 percent of women and 44.6 percent of men (World Bank 2016). Land ownership is highly concentrated, with 80 percent of the arable land owned by 5 percent of agricultural producers; this distribution has remained unchanged for half a century. Additionally, the average plot size for a non-indigenous household is 18.9 hectares, whereas for an indigenous household it is only 2.9 hectares.

3.1.2 National Nutrition and Health Status

In addition to the economic and educational inequality, there are disparities in maternal and child nutrition and health status for indigenous and rural people. According to the 2009 National Maternal and Infant Health Survey (*Encuesta Nacional de Salud Materno Infantil*) (ENSMI), the prevalence of stunting (height-for-age z-score [HAZ] < −2) among children 3–59 months of age in Guatemala was 49.8 percent, with 21.2 percent being severely stunted (HAZ < −3) (MSPAS 2011). Indigenous children were more

commonly stunted (65.9 percent stunted and 31.3 percent severely stunted) than non-indigenous children (36.2 percent stunted and 12.7 percent severely stunted); rural children were more commonly stunted (58.6 percent stunted and 26.7 percent severely stunted) than urban children (34.3 percent stunted and 11.6 percent severely stunted). Wasting (weight-for-height z-score [WHZ] < -2) was uncommon, with a prevalence of 1.4 percent (MSPAS 2011). The prevalence of anemia was 47.7 percent in children 6–59 months of age and 21.4 percent among non-pregnant women (MSPAS 2011). Anemia was also more common among indigenous women and children than among non-indigenous women and children; 49.5 percent of indigenous children 6–59 months of age were anemic compared with 46.3 percent of non-indigenous children of the same age, and 24.9 percent of indigenous non-pregnant women were anemic compared with 19.0 percent of non-indigenous non-pregnant women (MSPAS 2011).

According to the 2009 ENSMI, only 36.4 percent of rural women gave birth in a health facility compared with 76.6 percent of urban women. A similar discrepancy was seen between indigenous and non-indigenous mothers. Only 29.2 percent of births to indigenous mothers occurred at an established health facility, compared with 70 percent of births to the non-indigenous population (MSPAS 2011).

3.1.3 Health Care System

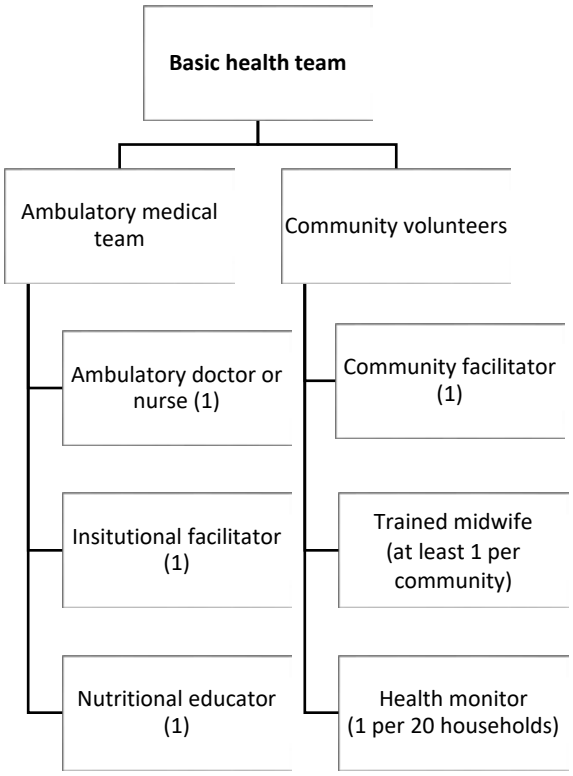
Health care in Guatemala is provided by a network of public, private nonprofit, and private for-profit organizations. MSPAS administers the country's health services and defines all health norms and regulations. Health coverage is low, and 40 percent of the population has no access to health services. Provision of preventive health services is implemented through Program for the Expansion of Coverage Program (*Programa de Extension de Cobertura*) (PEC), which is funded by the Integrated Healthcare System (*Sistema Integral de Atención en Salud)* (SIAS) and managed by MSPAS.

The PEC system was introduced as part of the 1996 Peace Accords and aims to expand health coverage to rural populations and provide basic health services (*servicios básicos de salud*) (SBS). Services are targeted to pregnant and lactating women and to children under 5 through rural health convergence centers. The PEC system is managed at the municipal level via a system of jurisdictions through contracts made with local health service providers (*prestadora de servicio de salud)* (PSSs). The PSSs are responsible for the day-to-day management of the health convergence centers, training health staff, and service delivery according to SBS guidelines (MSPAS 2004). MSPAS is in charge of supplying PSSs with resources necessary to provide health services (e.g., money, equipment, and supplies).

The SBS consist primarily of preventive health visits, such as antenatal care (ANC) and postnatal care (PNC) for women and monthly growth monitoring (GM) and annual check-ups for children. In addition to preventative consultations, women and children are provided with the recommended micronutrient supplements and vaccinations as well as basic medicines if prescribed by a doctor or nurse. The SBS are implemented according to a set of guidelines developed by MSPAS for the provision of care and referrals for people who are sick or have a medical emergency.

At each health convergence center, SBS are provided by members of the basic health team (*equipo básico de salud)* (EBS), which includes an ambulatory medical team that spends one day a month at each health convergence center and trained volunteer community members who are based in the communities served by the health convergence center (**Figure 3.1**). The ambulatory medical team consists of an ambulatory doctor or nurse and an institutional facilitator (*facilitador institucional*) (FI). In addition, some teams may have a nutrition educator. These individuals are hired and paid by the PSSs. The community volunteers consist of a community facilitator (*facilitador comunitario)* (FC), community health monitors (*vigilantes de salud*) (VSs) (1 per 20 families), and trained midwives. In principle, these trained community members are supposed to receive a stipend for their work, but often the stipends are not received.

Figure 3.1 Organizational structure of the basic health team



The ambulatory doctor or nurse provides monthly consultations for pregnant women and children under 5 at the health convergence centers. During these consultations, necessary medication may be prescribed and, if necessary, patients are referred to health services. Other duties include training and monitoring midwives, providing family planning counseling, conducting home visits for high-risk cases, and participating in quarterly meetings to analyze PSS-level health trends and achievements.

The FI is responsible for the growth monitoring program (GMP) and the monthly provision of immunizations and micronutrient supplements. Other duties include visiting the health convergence centers monthly to provide vaccinations; planning and implementing monthly training sessions for VSs and FCs; providing health consultations to children with diarrhea, respiratory infections, and malnutrition; and organizing quarterly meetings for the community EBSs at the health convergence centers.

The FC is responsible for the VSs and trained midwives in their communities and reports to the FI. Other duties of the FC include monitoring health concerns in the community, participating in PSS-level activities, summarizing health convergence centers' health trends and progress for quarterly health convergence center meetings, helping the FI with the GMP and vaccination activities, and coordinating with the local health commission to transport high-risk patients to hospitals.

VSs and trained midwives are the primary health workers available at the community level on a regular basis and are expected to make regular home visits in their communities. The VSs are tasked with reinforcing educational messages and reminding women to visit health convergence centers for ANC, perinatal care, PNC, child well visits, the GMP, and vaccinations and micronutrient supplements. Each VS performs these duties in his or her assigned sector—approximately 20 households. Other obligations include participating in quarterly health convergence center meetings; visiting families in their assigned sectors every two months; keeping an up-to-date registry of pregnant women, children under 5, and high-risk cases; and providing preventive health care to families. Midwives focus on providing care for women

during the pre-, peri-, and postnatal periods. Midwives also provide support for mothers during pregnancy and lactation. Their duties include promoting tetanus vaccinations during pregnancy, vaccinating newborns, distributing micronutrient supplements to pregnant women, referring pregnant women with complications to health centers or hospitals, and registering birth information at the health convergence centers.

3.1.4 Description of Program Implementation Area

The largest population of Mayans in Guatemala live to the north of Guatemala City, in the departments of Alta Verapaz, Baja Verapaz, Huehuetenango, San Marcos, Solola, Totnicapan, and Quiche. *PROCOMIDA*, was implemented in Alta Verapz, located to the northeast of Guatemala City. At the start of *PROCOMIDA*, the program was implemented in 4 of the 16 municipalities of the department of Alta Verapaz (Cahabon, Cobán, Lanquin, and San Pedro Carcha). Eventually, two more municipalities—Senahu in 2011 and Chisec in 2012—were included to increase the number of beneficiaries enrolled. The Q'eqchi' are the majority ethnic group in this department, and they suffered some of the worst violence during the country's three-decade civil war.

Alta Verapaz is one of the most food-insecure areas of Guatemala. Moreover, general indicators of child health suggest that department is worse off than other parts of the county. Stunting among children under 5 is 59.4 percent, compared with 49.8 percent nationally, and there are 36 infant deaths per 1,000 live births in Alta Verapz compared with 34 nationally. According to the ENSMI (MSPAS 2011), only 56.8 percent of births in Alta Verapaz were medically assisted compared with a national average of 65.5 percent. Difficulties in communicating with health professionals who often speak only Spanish have been identified as one reason for poor health service utilization in this area.

3.1.5 Program Description

3.1.5.1 Enrollment and Program Eligibility

Using the PM2A approach, *PROCOMIDA* expected to enroll 266,000 individuals in 936 communities (Mercy Corps 2013). Families were expected to enroll in the program when a mother first discovered she was pregnant and to continue the program until the child reached 24 months of age. Therefore, the planned duration of program participation was 30 months (estimating 6 months during pregnancy). An individual could register as a beneficiary at any time during this period, and more than one beneficiary per household was allowed to participate.[16] Targeting and eligibility criteria were communicated to the community via community meetings one month before the first food distribution. At the first meeting, initial beneficiaries were enrolled and given ration cards by *PROCOMIDA* fieldworkers, and at each distribution new eligible beneficiaries were registered. In order to receive family and individual rations, beneficiaries had to present their ration cards at distributions and were required to attend BCC activities and use the government-provided preventive health care services.

3.1.5.2 BCC Strategy

Participation in BCC sessions, which were delivered monthly by *PROCOMIDA* field technicians prior to the food distribution, was a requirement to receive the family and individual rations. BCC messages were tailored to three groups: pregnant women, mothers with children under 6 months, and mothers with children 6–23 months of age. The curriculum was targeted to the specific nutritional needs and preventative health service measures of each of these groups. In addition to attending BCC sessions, beneficiaries were required to attend pre- and postnatal health visits as well as monthly preventive health visits for children from birth to 24 months of age at the local health convergence centers in order to receive food rations.

[16] If a household contained multiple individual beneficiaries, only one household ration was provided.

3.1.5.3 Institutional Strengthening of Health Care Services

The institutional strengthening component aimed to strengthen the capacity of health services through multiple channels. *PROCOMIDA* trained the EBS and community health care staff on the BCC messages and trained them to measure height and weight correctly. *PROCOMIDA* provided resources to purchase medical equipment necessary for conducting the GMP and implementing SBS requirements at the health convergence center level. *PROCOMIDA* fieldworkers identified children with severe acute malnutrition (SAM) (WHZ < -3.0) during BCC lessons or during home visits; these children were then referred to the appropriate health services. *PROCOMIDA* worked with the PSSs implementing the MSPAS' SIAS and, with the community health care committees, to strengthen the capacity of these health service providers.

3.1.5.4 Food

Families that participated in *PROCOMIDA* were eligible to receive both family and individual food rations throughout their program participation. Individual rations were provided to each qualified beneficiary (i.e., pregnant woman, mother 0–5.9 months postpartum, or child 6–23.9 months of age) within a nuclear family, whereas only one family ration was provided to the nuclear family regardless of the number of beneficiaries. The provision of the family food ration was intended to prevent sharing of the individual rations with other household members. To be eligible to receive food rations, beneficiaries had to attend BCC sessions and use preventative health care services.

The size of the family ration and composition of the individual ration provided at each health convergence center was conditional on the treatment arm to which the health convergence center was randomly assigned. The *PROCOMIDA* family ration included rice, beans, and oil. The quantities of the FFRs that were distributed during the first year of the program (June 2010 to July 2011) provided on average 460 kcal per day per person (**Table 3.1**). The FFR size was provided to three of the five treatment arms (i.e., A, D, and E). Arm B received a RFR which was roughly half the size of the FFR, and provided approximately 247 kcal per day per person; arm C did not receive a family ration.

Table 3.1 PROCOMIDA family ration sizes (June 2010 to June 2011)[a]

	Full family food ration (Arms A, D, and E)		Reduced family food ration (Arm B)	
Food commodity	**Weight**	**Energy**	**Weight**	**Energy**
	(kg)	(kcal)	(kg)	(kcal)
Rice	12.000	43,200	7.000	25,200
Pinto beans	6.000	20,400	3.000	10,200
Vegetable oil	3.700	32,708	1.850	16,354
Total	**21.700**	**96,308**	**11.850**	**51,754**
Total kcal/capita/day[b]		**460[c]**		**247[c]**

[a] For the first year of distribution, these family food ration sizes were used. In year 2 they were reduced by roughly half.
[b] Total kcal/capita/day was derived using an average household size of 6.88 members and 30.42 days/month.
[c] Note that the individual ration was not meant to be shared, so we did not include it in the computation of total energy/capita/day. If it was shared, it would provide an additional 71 kcal/day/capita, and the total full family food ration would therefore provide 531 kcal/day/capita and the reduced family food ration would provide 318 kcal/day/capita.

In July 2011, the ration size was decreased (**Table 3.2**) since it was observed that it was lasting longer than 1 month and the household size was smaller than previously anticipated.[17] The program reduced the size of the FFR (i.e, arms A, D, and E) to 6 kg of rice, 4 kg of beans, and 1.850 kg of oil. The RFR size for arm B was similarly decreased to 3 kg of rice, 3 kg of beans and 0.925 kg of oil. These ration sizes were used for the duration of the program.

[17] The change in the size of the family ration similarly affected all treatment arms, and the larger, pre-July 2011 ration size was used for a relatively short period of time compared with the overall program duration. Therefore, only the post-2011 family ration sizes were used in calculating program costs.

Table 3.2 *PROCOMIDA* family ration sizes (July 2011 to May 2015)[a]

	Full family food ration (Arms A, D, and E)		Reduced family food ration (Arm B)	
Food commodity	**Weight**	**Energy**	**Weight**	**Energy**
	(kg)	(kcal)	(kg)	(kcal)
Rice	6.000	21,600	3.000	10,800
Pinto beans	4.000	13,600	3.000	10,200
Vegetable oil	1.850	16,354	0.925	8,177
Total	**11.850**	**51,554**	**6.925**	**29,177**
Total kcal/capita/day[b]		**269[c]**		**152[c]**

[a] These rations were distributed starting in July 2011; from June 2010 to June 2011, a larger family ration size was distributed.
[b] Total kcal/capita/day was calculated using an average household size of 6.3 members and 30.42 days/month.
[c] Note that the individual ration was not meant to be shared, so we did not include it in the computation of the total energy/capita/day. If the CSB was shared, it would provide an additional 78 kcal/capita/day, and the total FFR would therefore provide 347 kcal/capita/day and RFR would provide 230 kcal/capita/day.

The type of individual ration also varied by treatment arm. The three micronutrient-fortified individual rations were CSB, LNS, and MNP, and all were intended to be used strictly by the targeted beneficiary. Three of the five treatment arms in the *PROCOMIDA* program—arms A, B, and C—provided 4.0 kg of CSB as the individual ration, which provided an average of 494 kcal per day (**Table 3.3**). Arm D provided a daily dose of LNS, and arm E provided a daily dose of MNP. The formulation of the supplement and the number of sachets provided to meet the daily dose was different according to whether the beneficiary was a woman who was pregnant or less than 6 months postpartum, or was a child 6–23 months of age.

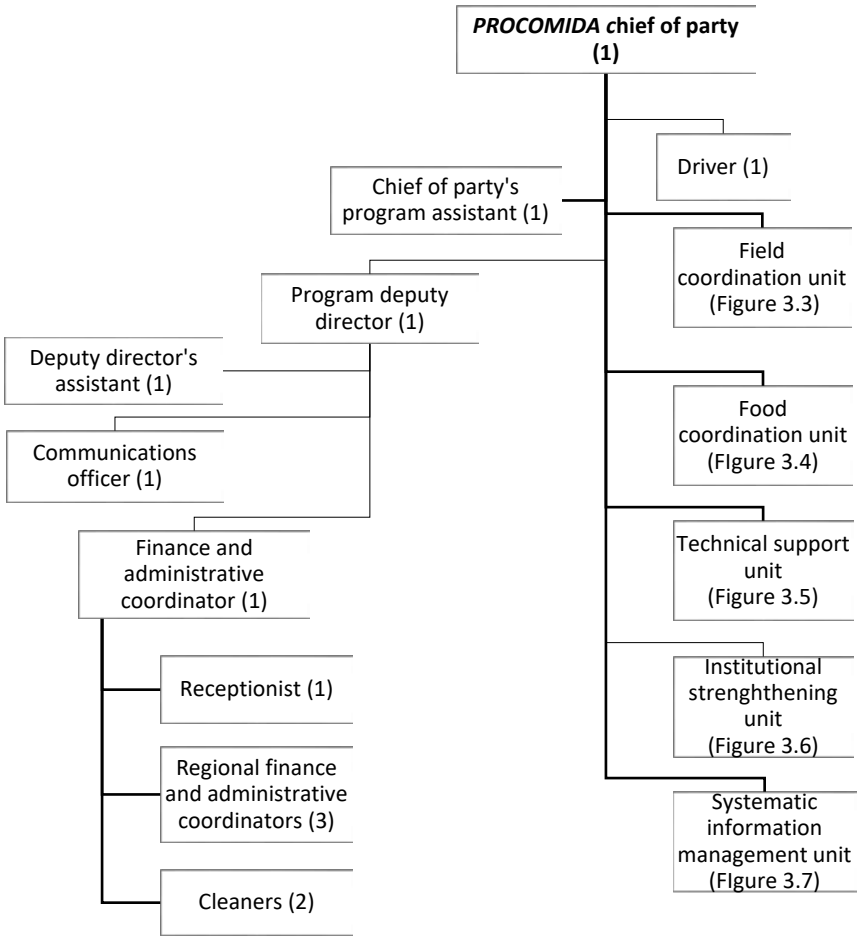
Table 3.3 Monthly individual ration size, *PROCOMIDA*

	CSB (Arms A, B, and C)		LNS (Arm D)			MNP (Arm E)		
Target group	kg per month	Average kcal/day	Sachets per month	Total g/day	Total kcal/day	Sachets per month	Total g/day	kcal/day
Pregnant or less than 6 months postpartum	4.0	494	30	20	118	60	2	-
Child 6–23 months	4.0	494	60	20	118	60	2	-

3.1.6 *PROCOMIDA* Organizational Structure

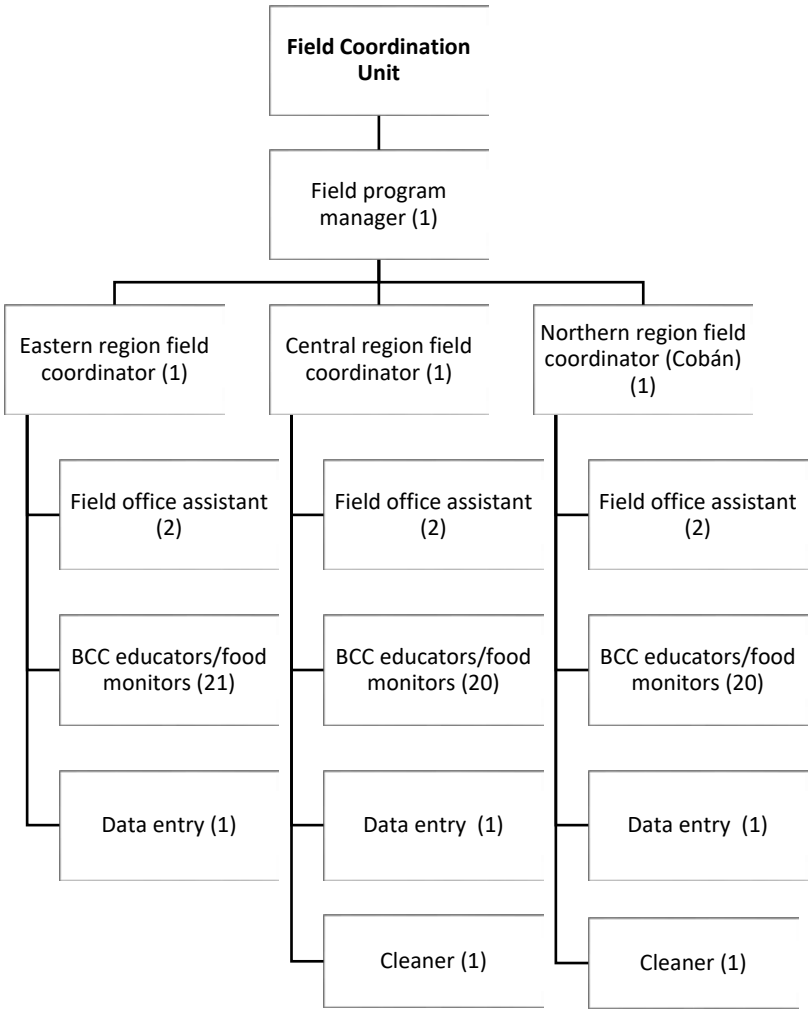
PROCOMIDA was implemented by Mercy Corps (MC) in Guatemala. At the head of the program was a COP who was directly assisted by a deputy program director and a program assistant. The MC Guatemala headquarters, agency director, COP for *PROCOMIDA*, and COP's assistant were based in Guatemala City. The deputy director of the program was based in the *PROCOMIDA* office in Cobán, Alta Verapaz (four hours northeast of Guatemala City), along with all other key program staff. The deputy director managed the Cobán offices. Under her direct management were the office assistant, communications officer, and the finance and office administrator. The office administrator in turn was in charge of three regional finance and administrative coordinators, the Cobán office receptionist, two cleaners, and a driver (**Figure 3.2**). The rest of *PROCOMIDA* program activities were organized into five main units: Field Coordination Unit, Food Coordination Unit, Technical Support Unit, Institutional Strengthening Unity, and Systematic Information Management Unit.

Figure 3.2 Organizational structure of *PROCOMIDA*



The first unit was the Field Coordination Unit (**Figure 3.3**). The unit had one manager who oversaw three regional offices run by regional managers who were in charge of the BCC educators and food monitors. Each regional office had at least one assistant, BCC educators and food monitors, data entry technicians, and a cleaner.[18] The number of BCC educators and food monitors located in each field office was conditional on the number of health convergence centers served by each regional office.

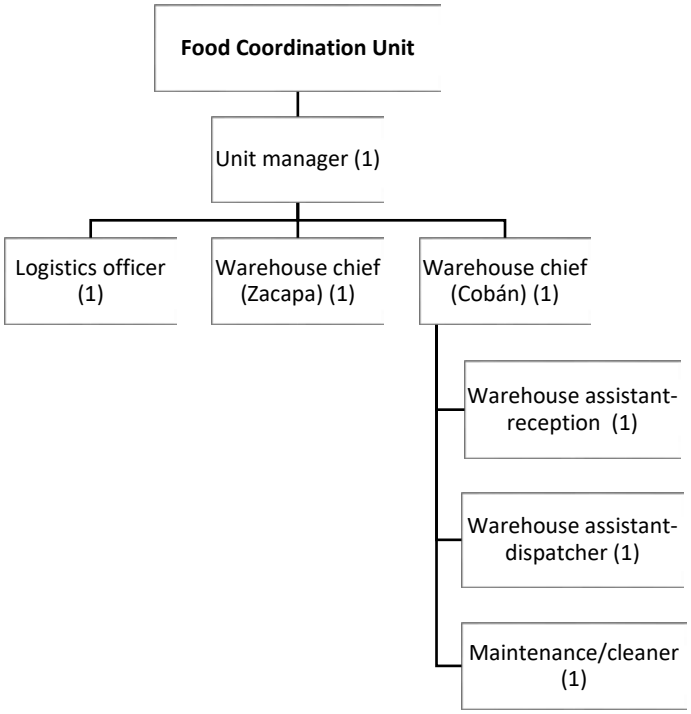
Figure 3.3 Structure of the Field Coordination Unit, *PROCOMIDA*



[18] The regional office located in Cobán, Guatemala, did not have a cleaner since it was based in the primary *PROCOMIDA*.

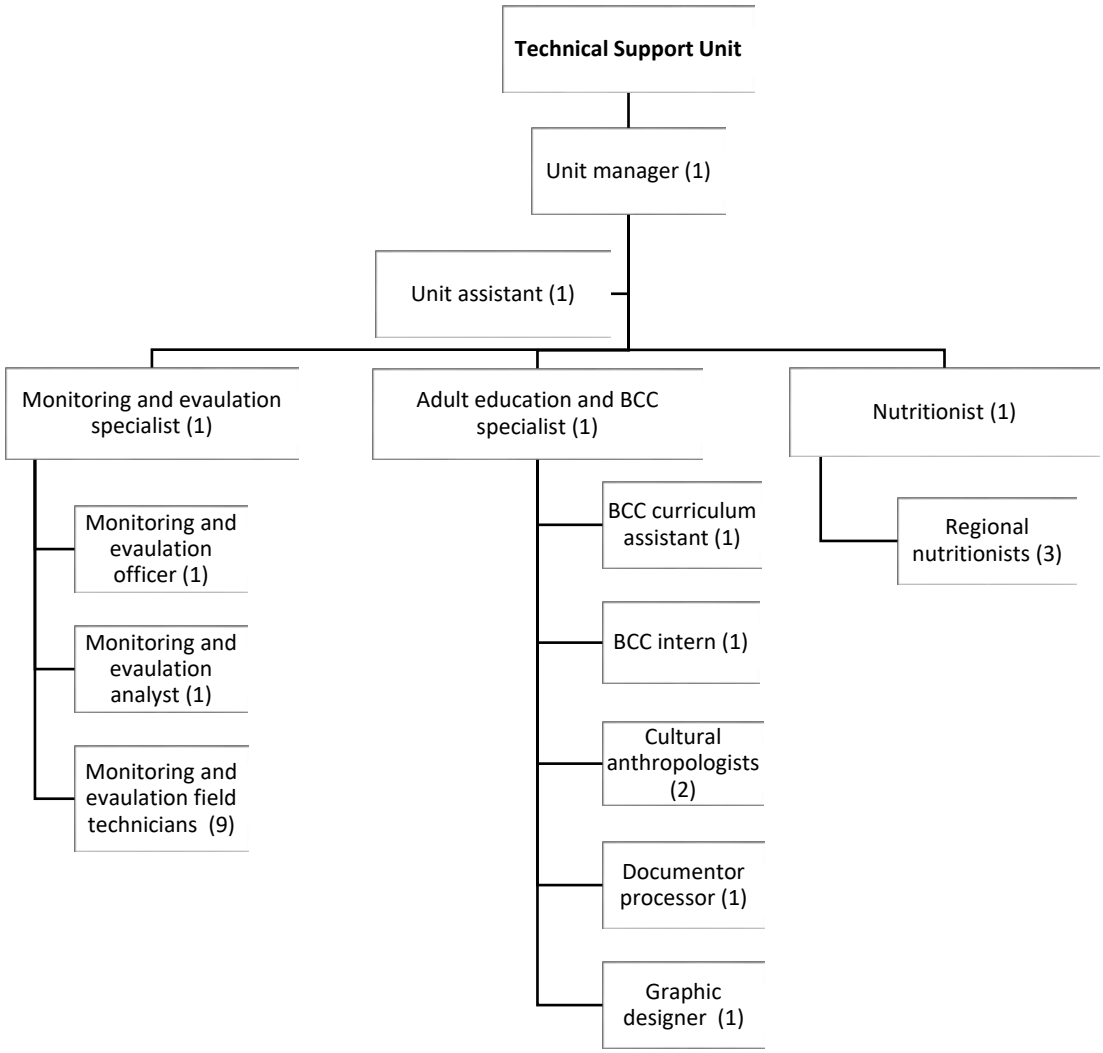
The Food Coordination Unit (**Figure 3.4**) was in charge of importing food commodities and micronutrient supplements, monetization, and warehouse and commodity management. The program operations manager was in charge of three warehouses (two in Cobán and a temporary warehouse in Zacapa, which was used until a suitable warehouse in Cobán was available) and managed the logistics officer. The two Cobán warehouses each had a chief manager and shared a cleaner. The temporary warehouse in Zacapa only had a manager.

Figure 3.4 Structure of the Food Coordination Unit, *PROCOMIDA*



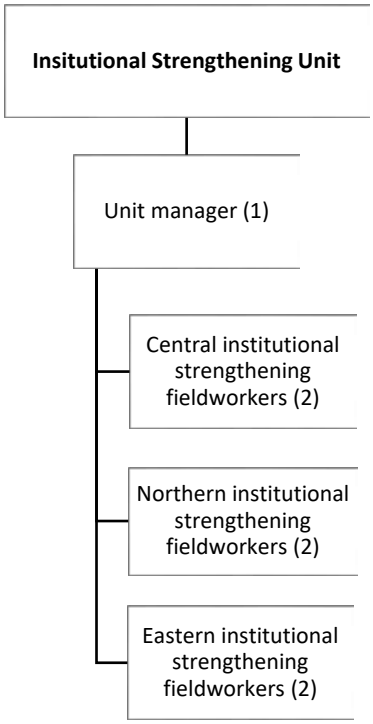
The Technical Support Unit (**Figure 3.5**) had three sub-units: monitoring and evaluation, BCC, and nutrition. The Technical Support Unit had one manager, who was supported by a unit assistant, and who oversaw the managers of each of the three sub-units. The monitoring and evaluation sub-unit was run by a specialist who supervised a monitoring and evaluation officer, an analyst, and nine field technicians. The BCC sub-unit was run by a medical doctor who had the support of a curriculum assistant, an intern (on a temporary basis), two cultural anthropologists (on a temporary basis), a graphic designer, and a document processer. The nutrition sub-unit was run by one nutritionist with the support of three regional nutritionists.

Figure 3.5 Structure of the Technical Support Unit, *PROCOMIDA*



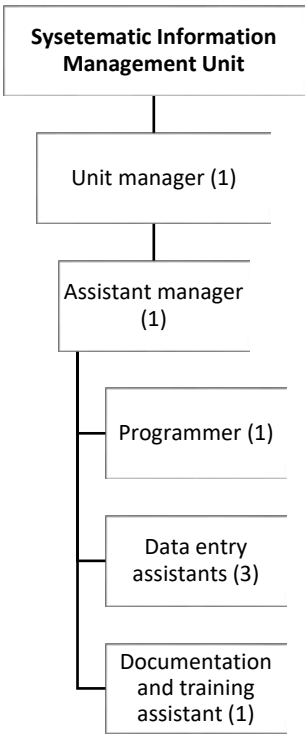
The Institutional Strengthening Unit (**Figure 3.6**) was managed by one person who oversaw three fieldworkers, each based in one of *PROCOMIDA*'s three regions (i.e., north, central, and east).

Figure 3.6 Structure of the Institutional Strengthening Unit, *PROCOMIDA*



The Systematic Information Management Unit (**Figure 3.7**) was managed by one person who had one assistant. The assistant in turn supervised a programmer, three data entry technicians, and a documentation and training assistant.

Figure 3.7 Structure of the Systematic Information Management Unit, *PROCOMIDA*



3.1.7 Program Time Line, *PROCOMIDA*

Table 3.4 presents a brief outline of the key events of the *PROCOMIDA* program related to hiring, pre-implementation activities, food commodity and supplement distribution, and beneficiary enrollment.

As part of the program preparation, several pre-implementation activities were needed. An agreement with MSPAS was signed in November 2010 and one with the National Secretary of Food and Nutritional Security (*Secretaría de Seguridad de Alimentaria y Nutricional*) (SESAN) in March 2010. MSPAS gave ethical approval for the research arms in February 2011. Furthermore, several research activities were conducted before program implementation began. First, the formative research started in fall 2009 and was used to help develop key messages for the BCC component. A second round of formative research was conducted in September and October 2010 to assess the acceptability of LNS and MNP supplements. These activities helped to prepare the BCC and institutional strengthening components of the program. In March 2010, BCC educators were hired, and the development of key BCC messages began. The development of the BCC modules and associated materials continued through 2013. In December 2009, the program held the first workshop for PSS managers, and in October 2010 the first PSS institutional assessments were completed.

For food ration distribution, commodities were continually shipped to Guatemala. The first shipment of commodities was received in country in December 2009 and stored in Zacapa for storage until the warehouse in Cobán could be rented. A second shipment was received in March 2011, and additional

shipments were received annually until 2014. The first shipment of LNS was received in October 2010 and received in the Cobán warehouse after being cleared from customs. The first group of beneficiaries was enrolled in June 2010, and food distributions and BCC sessions began in July. At first, beneficiaries from only 141 health convergence centers were enrolled, and then every few months, beneficiaries from additional health convergence centers were enrolled into the program. *PROCOMIDA* regularly assessed the need to either include more health convergence centers or work in more municipalities in order to reach its targeted number of beneficiaries. Health convergence center enrollment was staggered, because enrollment required additional personnel and was also used to train fieldworkers.

In February 2011, the final group of initially selected health convergence centers was enrolled in the program for a total of 221 health convergence centers; in July 2011, 60 additional health convergence centers were enrolled in order to reach more beneficiaries. All of these health convergence centers received their first food distributions and BCC sessions in August 2011. Because of the additional health convergence centers enrolled, and the associated heavier workload of the field technicians, the program hired more BCC educators and field monitors. In August 2011, the first LNS distribution for the D treatment arm occurred; in September 2011, the first MNP distribution for the E treatment arm took place. The last round of BCC sessions took place in March 2015, and the final food distributions in May 2015.

Table 3.4 Program activities time line, *PROCOMIDA*

	Year						
Month	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
January			PSS educators began working	Enrolled 14 new health convergence centers			
February		Formative research began to inform BCC development	Initial health convergence center enrollment completed; research study approved by MSPAS		Midline survey presentation	Began radio education campaign (part of BCC strategy)	
March		BCC educators and food monitors hired; SESAN agreement signed; development of key BCC messages began	Receipt of second shipment of food commodities				Final BCC sessions completed
April		Baseline survey started	Cobán warehouse #2 opened	Model gardens started		Second to last shipment of LNS	Began program closing activities
May		Food transported to Cobán, Alta Verapaz; Cobán warehouse #1 completed; institutional strengthening unit and field coordinator managers hired	Third round of BCC educators and food monitors hired	Midline survey started		Number of health convergence centers enrolled in program began to decline	Final distributions; endline survey preparations
June		Enrollment of first 141 health convergence centers started; baseline survey completed	LNS and MNP arrived in country	Program took over repackaging food rations		Final shipment of MNP Distribution completed in 139 health convergence centers	Warehouses closed
July	*PROCOMIDA* proposal awarded	First food distribution and BCC lesson delivered; new offices finished in Cobán;	Enrollment of 60 new health convergence centers; distribution of smaller size family rations began	Guided visits to health facilities by program staff, community leaders, and beneficiaries; midline survey ended		Closing of program activities in the Northern region	

	Year						
Month	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
		second round of BCC educators and food monitors hired					
August		Deputy director hired; began activities in North (Lanquin)	First distribution of LNS; three field nutritionists hired	Program opened in the three new municipalities	BCC reports finalized		
September	*PROCOMIDA* director hired	Formative research on the feasibility of MNP and LNS began	First distribution of MNP			Final enrollment of new beneficiaries; height and weight measurement trainings held at health convergence centers	*PROCOMIDA* ended
October	Technical support unit and monitoring and evaluation unit directors hired	40 more health convergence centers enrolled; LNS received in Guatemala; institutional assessment with PSSs conducted		Institutional assessment with PSSs conducted	Height and weight measurement training held at health convergence centers	Implementation of *Crece Bien* began	
November	BCC director and head nutritionist hired	Agreement with MSPAS signed; increased program to serve 221 health convergence centers; increased the number of personnel by 45 fieldworkers and 3 coordinators					
December	First shipment of food commodities received; workshop for PSS managers held		Guided visits to health facilities by program staff, community leaders, and beneficiaries	Final BCC modules and accompanying flip charts finalized			

3.2 Burundi and *Tubaramure* Background

3.2.1 Country Profile

The Republic of Burundi is a landlocked country in the Great Lakes region of East Africa. Since independence in 1962, Burundi has suffered chronic instability due to cyclical inter-ethnic violence and regional conflicts. During a conflict beginning in 1993 and spanning over a decade, an estimated 300,000 Burundians were killed, and more than a million were forced to flee (IFAD 2012). In 2000, an internationally brokered power-sharing agreement was developed between the government and the rebels that ultimately led to an integrated defense force, a new constitution, and a newly elected government in 2005 (IFAD 2012).

Burundi is composed of 18 provinces and approximately 10.8 million inhabitants on a land area of only 27,830 km^2, making it one of the most densely populated countries in Africa. The GDP is US$7.6 billion and the per capita GDP is US$747, classifying it as low-income country. The agriculture sector accounts for more than 40 percent of the GDP and employs more than 90 percent of the population (UNDP 2015). Burundi has an equatorial climate with two wet seasons: February to May and September to November. The major agriculture crops produced for domestic consumption are maize, beans, cassava, sorghum, sweet potatoes, bananas, and a variety of vegetables (Chauvin et al. 2012). Major exports include coffee and tea.

The 2015 Human Development Index ranked Burundi 184 out of 188 countries (UNDP 2015). Life expectancy at birth is 56.7 years, and adults over 25 have received, on average, only 2.7 years of formal education (UNDP 2015). Literacy campaigns and adult education activities have been common, and 86.9 percent of adults are literate (UNDP 2015).

3.2.2 National Nutrition and Health Status

Years of civil war, reduced soil fertility, land and environmental degradation, recurrent climatic shocks, a population growth rate of 3.3 percent, and insufficient cultivatable land to meet household food security needs has deepened acute poverty levels among rural households and led to a 24-percent decline in per capita agricultural production since 1993 (PNDS 2010; World Food Programme 2011). The 2014 Global Hunger Index identified Burundi as one of two countries with “extremely alarming” hunger levels (von Grebmer et al. 2014). Moreover, it is estimated that only 28 percent of the population is food secure (World Food Programme 2011).

The Burundi Demographic and Health Survey conducted in 2010 indicated that 58 percent of children under 5 years are stunted, 29 percent are underweight, and 6 percent are wasted (WHZ < -2). The prevalence of malnutrition is highest among rural populations living in the north and central-eastern provinces of the country (ISTEEBU 2012). Of children 6–59 months of age, 45 percent were found to be anemic, as were 19 percent of women of childbearing age. The infant and child mortality rates are also among the highest in sub-Saharan Africa, at 59 infant and 96 child deaths per 1,000 live births. These rates are highest among the rural population (ISTEEBU 2012).

3.2.3 Health Care System

Health care in Burundi is provided by the government through the Ministry of Health (MOH). It is hindered by shortages of equipment and medicine, and by insufficient infrastructure (PNDS 2010). Burundi also has a paucity of doctors, nurses, and adequately trained medical personnel; there are only 0.03 physicians and 0.06 nurses and midwives for every 10,000 people (WHO 2014). The shortages force medical responsibilities in rural health centers into the hands of nurse assistants who have not yet completed their trainings (PNDS 2010).

In 2006, the Burundian government instituted the Minimum Services Package (*Paquet Minimum des Services de santé*) (PMS) to provide free health care for pregnant women and children under 5 as part of a standardized package of health services in rural health centers. The PMS includes comprehensive care for children under 5, PNC, ANC, reproductive health services, management of medical and surgical emergencies, basic dental care, treatment of communicable diseases, environmental sanitation, safe drinking water services, availability and access to essential medicines, and participatory health education (ISTEEBU 2014). To provide these services, the guidelines call for each health center to have a manager with nurse qualifications, two other nurses, and a doctor who visits the health center twice per week. The full-time staff should consist of 12 people overall, including a lab technician and administrator. However, these guidelines were often not met in Ruyigi and Cankuzo Provinces (Leroy et al. 2014).

Preventive health care services for women (i.e., ANC and PNC consultations) and children (i.e., vaccinations and GM) are provided by nurses and nurse assistants at rural health centers. Child preventive health visits include registration and measurement of weight, height, and mid-upper arm circumference (MUAC), vaccinations, vitamin A supplementation, reference to curative consultations, and nutritional counseling (MSP/WHO 2007). These services are offered weekly or monthly depending on the health facility. Patients with medical problems beyond the capabilities of their district health center are referred to district or provincial hospitals (PNDS 2010).

At the community level, health centers reach the population through community health workers (CHWs), who are recruited by the government and managed by provincial health technicians (TPSs). On average, each *colline* has two CHWs attending to its population. The TPSs supervise all CHWs working within their health center's catchment area. The primary roles of both the TPSs and CHWs are to educate the local population on health-related topics, identify antenatal and postnatal danger signs, and identify cases of child malnutrition within the community for the purpose of making necessary referrals.

3.2.4 Description of Program Implementation Area

Tubaramure operated in the rural eastern provinces of Cankuzo and Ruyigi. Cankuzo has a population of approximately 220,000 and has 22 active district health centers. Ruyigi has approximately 400,000 inhabitants and has 26 active health centers. Eighty percent of the population lives within 5 km of a health center.

Cankuzo and Ruyigi have high rates of food insecurity that have persisted due to poverty, climatic shocks, and an influx of returned refugees from Tanzania. In 2005, UNDP declared Cankuzo and Ruyigi to be among Burundi's five most vulnerable provinces. Within this region, the prevalence of stunting among children under 5 was reported to be higher (62 percent) than the national average (58 percent).

3.2.5 Program Description

The *Tubaramure* program was implemented by a consortium of NGOs led by CRS. The other consortium members were FH, IMC, and CARITAS-Burundi. CRS and CARITAS led the distribution of both family and individual food rations to beneficiaries and led other food-related activities such cooking demonstrations. FH led development and implementation of BCC activities. IMC was responsible for strengthening the health services that provide preventive health care for pregnant and postpartum women and children under 5 (institutional strengthening). The program also included an agricultural component and a microcredit activity to complement the standard food, BCC, and health program package provided by the general PM2A program. The program aimed to enroll approximately 51,075 mother-child pairs.

3.2.5.1 Eligibility and Enrollment

To increase the knowledge of the program among potential beneficiaries and limit intrusions from non-eligible community members, the community was sensitized to both the targeting and eligibility criteria

via awareness campaigns. During the first two *Tubaramure* registration events, all pregnant women and mothers of children under 6 months of age were enrolled in the program. However, at subsequent registration events, only mothers at least 4 months pregnant (visibly pregnant) were enrolled, to reduce the number of women enrolling in the program who falsely claimed to be pregnant. Beneficiaries who lived in the 205 general enrollment *collines* were eligible to participate in the BCC sessions from the time they enrolled in the program, and were eligible to receive the food rations from the time the mother was pregnant until her child reached 24 months, for a maximum duration of 30 months of program participation. The institutional strengthening activities were conducted at all health centers; therefore, all people served by those health centers could potentially benefit from the program's institutional strengthening activities.

Participants who lived in the 60 *collines* that were assigned to the impact evaluation were randomly assigned to a treatment arm based on the *colline* where they lived. Beneficiaries in the T24 arm received the same services that were received in the general enrollment area described above. Mother-child pairs assigned to other treatment arms received the same services except that the timing and duration for which they received food rations differed: beneficiaries in the T18 arm received food rations from pregnancy until the beneficiary child reached 18 months of age, and those in the TNFP arm did not receive food rations during pregnancy but were eligible to receive them from the time the beneficiary child was born until he or she reached 24 months of age.

3.2.5.2 BCC

The BCC strategy was developed by FH, and it used care groups—a volunteer-based cascade method that trained selected program beneficiaries called leader mothers (LMs), who in turn trained other beneficiaries. The care group BCC strategy included messages related to the Essential Nutrition Actions; the Essential Hygiene Actions; use of the food rations; prevention and management of maternal and childhood illnesses; and the use of preventive health services such as ANC, PNC, and vaccination and GM services. The care group curriculum was developed based on a barrier analysis and a study on local determinants of malnutrition (LDM).

3.2.5.3 Institutional Strengthening of Health Care Services

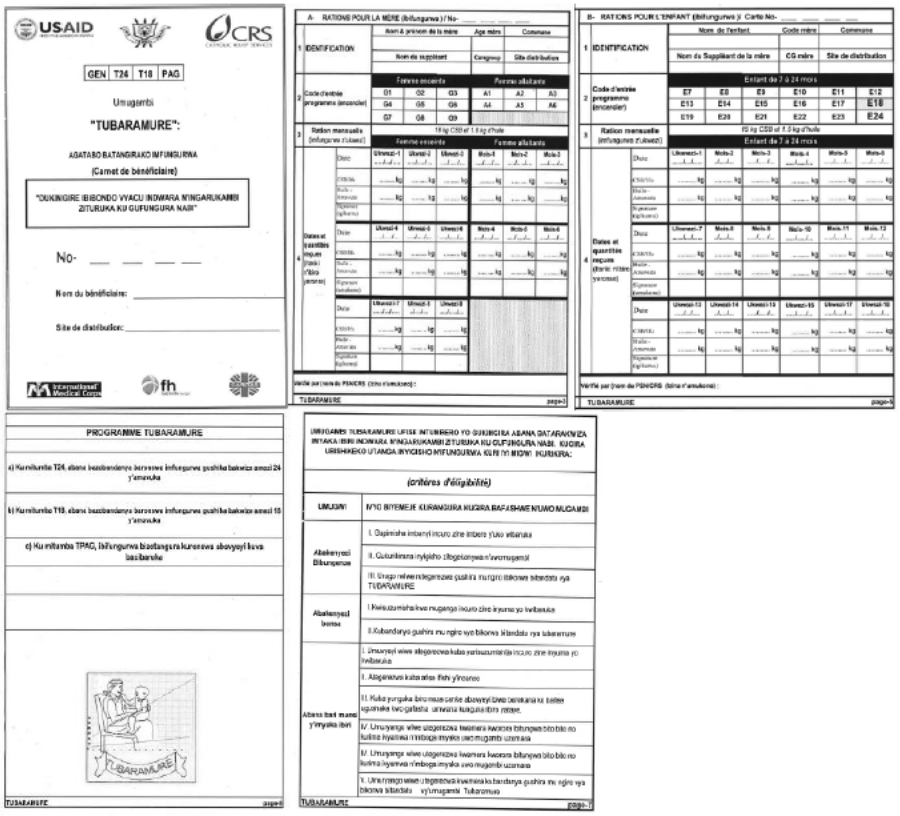
IMC implemented *Tubaramure's* institutional strengthening component, which aimed to strengthen the capacity of local health care personnel and improve the quality of services in Cankuzo and Ruyigi through multiple channels. *Tubaramure* worked with health centers, which are managed by committees of community members and are therefore well-connected to the communities and their needs (MSP/WHO 2007; PNDS 2010). IMC supported community health committees by holding regular meetings to identify respected leaders wishing to support community health and nutrition activities; these committees helped to monitor community progress, communicate needs, identify problems, and inform the community of their progress toward reducing malnutrition. IMC also worked together with the MOH to develop and finalize the national protocols on ANC, PNC, community-based management of acute malnutrition (CMAM), and the integrated management of childhood illness (IMCI). IMC was responsible for training the district health offices, doctors, nurses, nurse assistants, TPSs, CHWs, and *Tubaramure* health promoters (THPs) on ANC, PNC, GM, CMAM, and IMCI; providing refresher courses for health center personnel; conducting monthly visits to supervise health services; providing the medical equipment necessary for antenatal, postnatal, GM, and IMCI activities; and building community capacity with respect to the prevention, screening, referral, and tracking of SAM cases.

3.2.5.4 Food Ration Distribution

The distribution of food rations occurred monthly at designated distribution sites. At a beneficiary's first food distribution event, she received a specially designed *Tubaramure* ration bucket and a jerry can (container) to carry home her monthly rations. In order to receive food commodity rations, a beneficiary

had to present her ration card (provided to her upon enrollment) (**Figure 3.8**), a *Tubaramure* ration bucket, and a jerry can, and her name had to be included on the list of beneficiaries scheduled to receive food commodities that month.

Figure 3.8 *Tubaramure* ration card pages



Note: Pages that were blank or for notes are not shown.

Each mother-child pair in the program received an individual ration for the primary beneficiary. Pregnant women and mothers with a child under 6 months of age received 6 kg of CSB and 600 g of oil per month until the child became the primary beneficiary, when he or she reached 6 months of age. The child's individual ration was 3 kg of CSB and 300 g of oil per month (**Table 3.5**). The individual ration was intended to be consumed strictly by the targeted individual; it provided an average of 915 kcal per day to pregnant women and mothers less than 6 months postpartum, and of 458 kcal per day to children 6–24 months of age (Leroy et al. 2010). In addition to the individual ration, the program provided a household ration for the other members of the mother-child pair's household, to improve household food security. The ration included CSB (12 kg) and oil (1,200 g). Only one family ration was given per household (irrespective of the number of individual beneficiaries).

Table 3.5 Monthly ration size, *Tubaramure*

Target group	CSB	Vegetable oil	Energy/ month	Energy/ day[a]	Energy/day/ capita[b]
	(kg)	(g)	(kcal)	(kcal)	(kcal)
Pregnant woman or mother of child < 6 months	6	600	27,846	915	158[c]
Child 6–24 months	3	300	13,923	458	79[c]
Family ration	12	1,200	55,692	1,831	316
Total ration when pregnant/6 months postpartum woman	**18**	**1,800**	**83,538**	**2,746**	**474**
Total ration when child is 6-24 months	**15**	**1,500**	**69,615**	**2,288**	**395**

[a] Energy per day, using 30.42 days/month.

[b] Energy per capita was calculated based on the assumption of an average household size of 5.79 members.

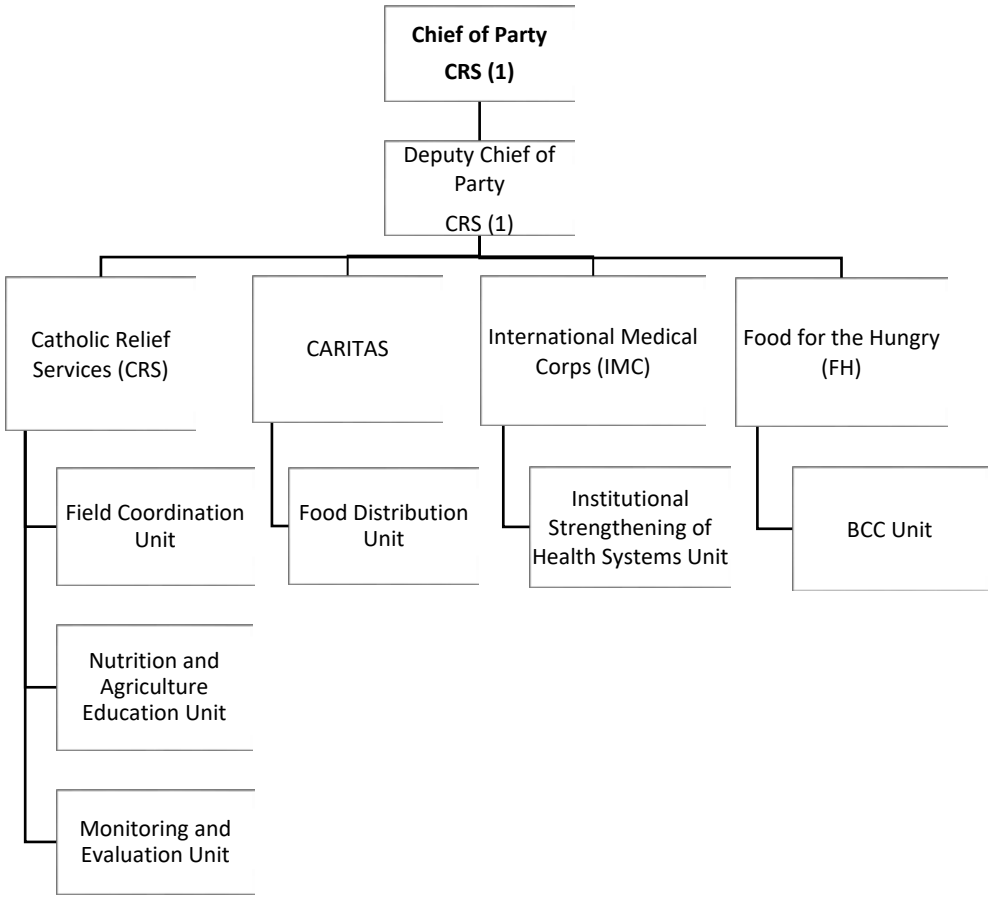
[c] Note that the individual ration was not meant to be shared, but this may have been difficult to achieve, as the individual and family rations included the same foods.

CRS also incorporated agriculture and microcredit activities into the program to complement the food, BCC, and health components of the program. The agriculture component consisted of distributing fruit and vegetable seeds and chickens to LMs and having agriculture education sessions taught by the THPs. Beneficiaries were also encouraged to have home gardens to increase their access to nutrient-rich foods. CRS also incorporated a microcredit activity called savings and internal lending communities (SILC). SILC activities were available to beneficiaries and non-beneficiaries living in intervention *collines*.

3.2.6 *Tubaramure* Organizational Structure

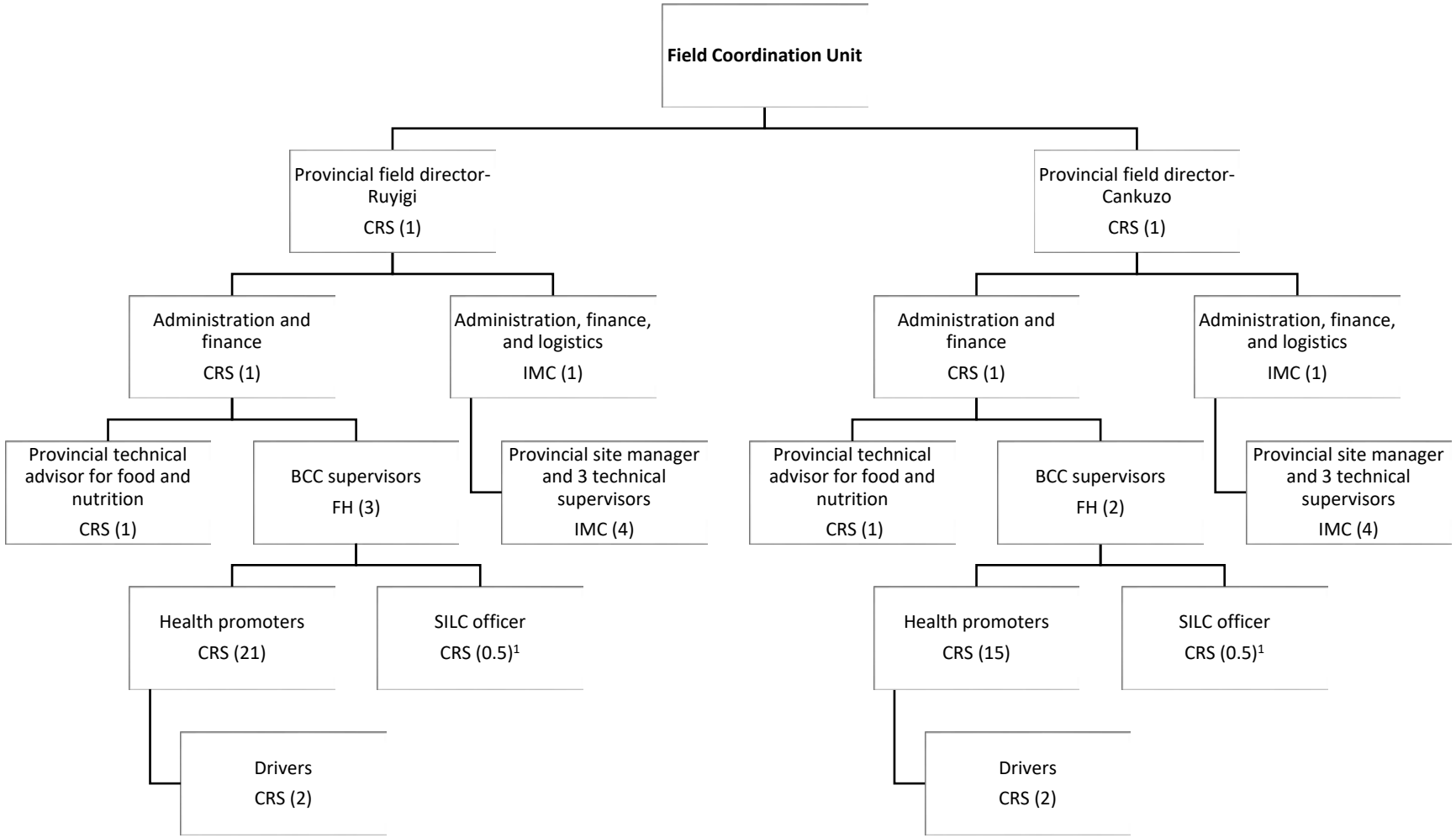
The implementation of the *Tubaramure* program was divided among the four consortium members: CRS, IMC, FH, and CARITAS and spearheaded by a COP and a deputy chief of party (DCOP) based within CRS (**Figure 3.9)**. To coordinate program activities at both the field level and the office level, *Tubaramure* was comprised of six units: Field Coordination Unit, Food Distribution Unit, Institutional Strengthening Unit, BCC Unit, Nutrition and Agricultural Education Unit, and Monitoring and Evaluation Unit **(Figure 3.9)**.

Figure 3.9 Organizational structure of *Tubaramure*



The coordination of all field activities (**Figure 3.10**) was managed by CRS, which appointed a provincial director for each province to oversee operations. Each provincial director was then supported by an administration and finance officer responsible for bookkeeping; a provincial technical advisor for food and nutrition (*conseillère technique provincial pour l'alimentation et la nutrition*) (CTPAN) (CRS staff); and two or three BCC supervisors (FH staff) to train and supervise THPs. THPs (CRS staff) were responsible for training all LMs and monitoring all beneficiary-related activities. Each provincial office also had a team from IMC that consisted of a site manager; three technical supervisors to support the site manager; and an administration, finance, and logistics officer to manage different institutional strengthening activities. One SILC officer, hired by CRS, split his time between the Cankuzo and Ruyigi field offices to oversee all microcredit activities and to implement the program via the THPs. Each provincial office had two drivers to transport provincial staff and supplies.

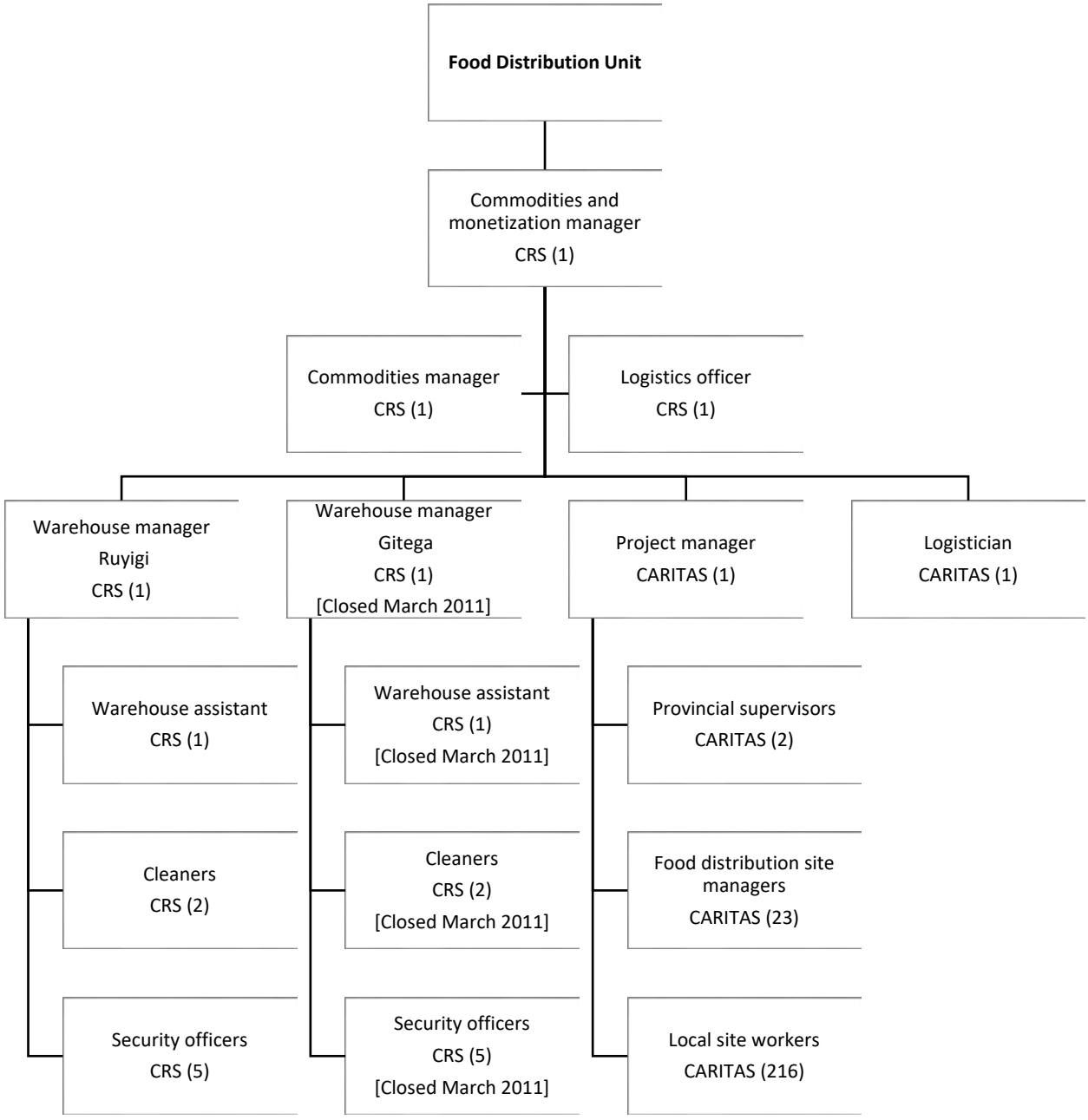
Figure 3.10 Structure of the Field Coordination Unit, *Tubaramure*



[1]The SILC officer split his time between the Ruyigi and Cankuzo field offices.

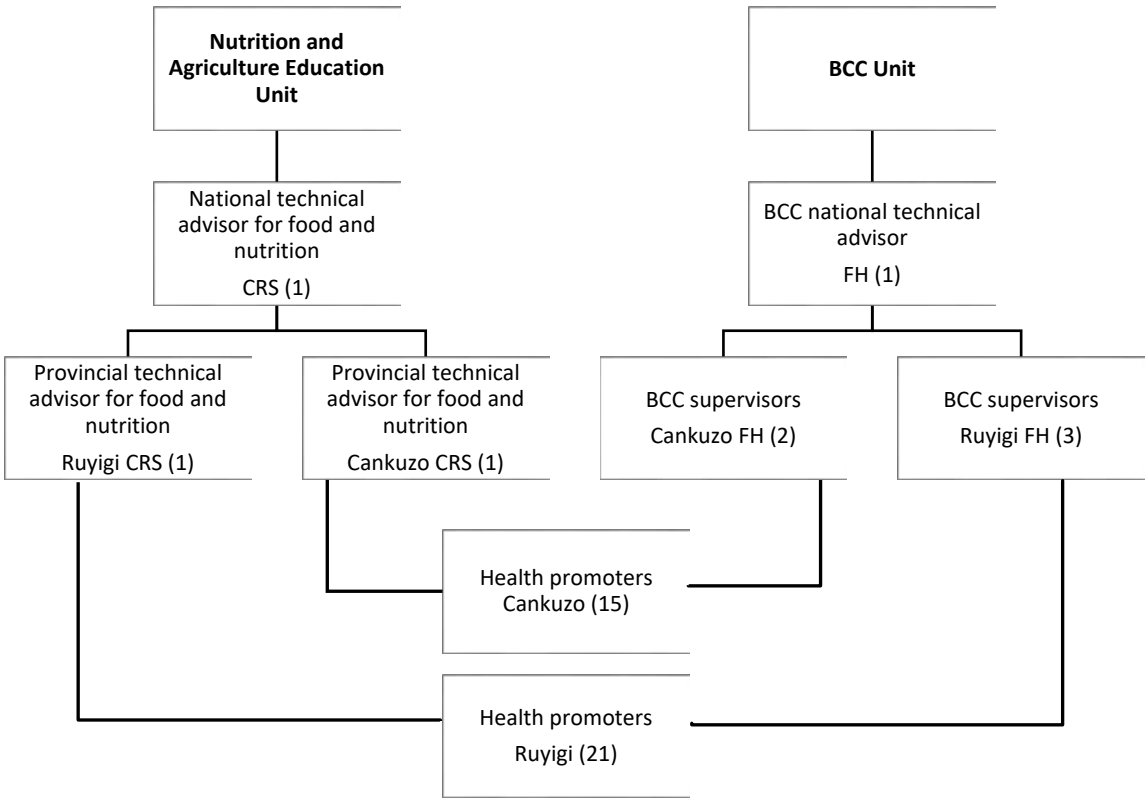
The Food Distribution Unit (**Figure 3.11**) was coordinated by the commodities and monetization manager (CRS staff) and the commodities manager (CRS staff) in Bujumbura. These two managers were responsible for estimating the number of beneficiaries, the amount of food rations needed, and the importation and distribution of the food commodities. The logistics officer (CRS staff) was responsible for commodity transportation and food commodity monetization. At the beginning of the program, *Tubaramure* had two warehouses to store food, but in 2011 this was reduced to one warehouse. Warehouse managers (CRS staff) directed food commodity storage and dispatch activities; warehouse assistants (CRS staff) helped with the management and inventory activities. Cleaners were hired to keep the warehouses in optimal condition, and a security team was hired by CRS to protect and prevent theft at each warehouse. The CARITAS project manager oversaw food distribution activities across both provinces along with the support of a logistician. Each province had one CARITAS provincial supervisor to monitor the distribution sites and managers, while the food distribution site managers coordinated the distribution of food to the beneficiary population via the food distribution site workers.

Figure 3.11 Structure of the Food Distribution Unit, *Tubaramure*



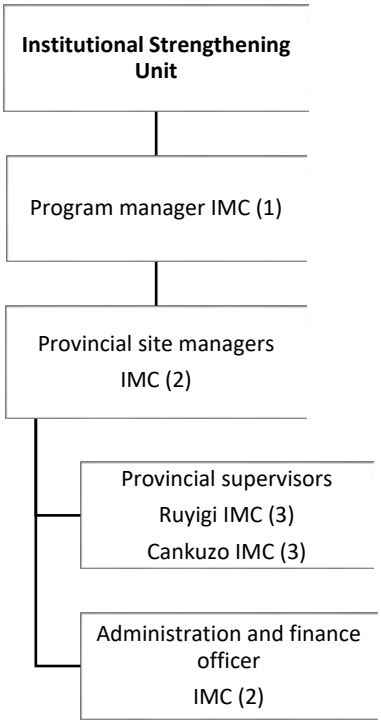
Tubaramure's educational activities were managed by two separate, but related, operational units: the Nutrition and Agricultural Education Unit and the BCC Unit (**Figure 3.12**). The activities of the two units were managed independently by CRS and FH, respectively, but were jointly implemented by THPs who were employed by CRS and were trained and supervised by FH. CRS appointed the national technical advisor for food and nutrition (*conseillère technique nationale pour l'alimentation et la nutrition*) (CTNAN) in Bujumbura and two CTPANs to train the THPs on nutrition and agriculture topics and techniques. FH appointed the FH national technical advisor and five FH BCC supervisors to train the THPs on the BCC curriculum.

Figure 3.12 Structure of the Nutrition and Agriculture Education Unit and BCC Unit, *Tubaramure*



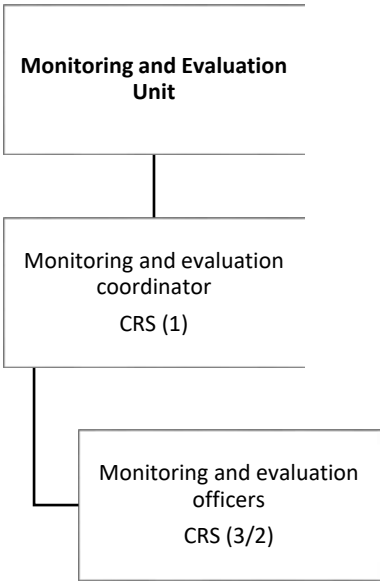
The Institutional Strengthening Unit (**Figure 3.13**) was managed by IMC's program manager and directed by two IMC site managers (one in each province). The site managers supervised and worked with six IMC supervisors (three in each province) to train the local MOH personnel, CHWs, and THPs. Two administration and finance officers provided administrative and logistic support to the institutional strengthening team.

Figure 3.13 Structure of the Institutional Strengthening Unit, *Tubaramure*



The Monitoring and Evaluation Unit (**Figure 3.14**) was managed by CRS by the national monitoring and evaluation coordinator and two monitoring and evaluation coordinator officers. One extra monitoring and evaluation coordinator officer was hired between July 2012 and early 2014.

Figure 3.14 Structure of the Monitoring and Evaluation Unit, *Tubaramure*



3.2.7 Program Time Line, *Tubaramure*

The *Tubaramure* program proposal was accepted and signed by USAID in July 2009, and the COP was hired the same month. The first receipt of Title II commodities in Burundi occurred in December 2009. *Tubaramure* began enrolling pregnant women and mothers of children under 6 months of age, and distributing food rations to them, in April 2010. Enrollment events were held every 2 months until November 2011 for the 205 general enrollment *collines*. Within the 45 research *collines*, implementation was delayed, and enrollment of eligible women began in March 2011. From April 2011 until June 2012, enrollment events were held every 2 months in the research *collines*.

Development of the BCC strategy was initiated in August 2009, when the formative research to develop the content of the BCC messages began with a LDM study. In December 2009, the program began to conduct barrier analysis studies to understand the causes of behaviors identified in the LDM study. In November 2009, FH conducted a consortium-wide training on the care group method and a health promoter start-up training to inform THPs and other consortium staff how BCC activities would be implemented. In May 2010, care group meetings began. In December 2010, the program first broadcasted its radio program through national radio stations to transmit health messages. Both care groups and the radio messages continued until the end of the program.

In January 2011, the monitoring and evaluation coordinator submitted the first quarterly report to FFP. In March 2011, the first trigger report was submitted to CRS by the monitoring and evaluation coordinator. The trigger report was submitted every 2 months and was used to determine if the program needed to alter program activities due to circumstances affecting the areas of program implementation.

The *Tubaramure* program continually evolved to meet new demands and unexpected needs throughout its duration. The program initially intended to enroll 51,075 mother-child pairs. However, due to logistical reasons, the number of mother-child units was reduced to approximately 49,650, and it was decided that enrollment would end in October 2011. Additionally, due to the research demands imposed on the program, discussions among stakeholders led to an 8-month enrollment extension within the 45 research *collines*.

Regarding *Tubaramure's* agriculture intervention, the program initially planned to distribute seeds, fruit trees, and chickens to the most vulnerable beneficiaries. However, the program instead used THPs to distribute the agriculture inputs to their respective LMs and train them to develop household gardens. Leaders mothers could then use their own personal gardens (or develop a community garden) as an educational tool to train beneficiaries and distribute the seeds, saplings, and chickens to beneficiaries.

Requirements for receiving food rations were also adjusted over the life of the program. The original criteria were (1) proof of use of preventive health care services (i.e., ANC and PNC visits completed and child's immunizations current), (2) consistent care group attendance, and (3) a family pledge to increase the number of good health behaviors practiced (CRS/FH/IMC 2009). Since the program did not wish to discourage participation, women were strongly encouraged at each care group session and home visit to follow the pre-set criteria. However, eligibility to receive the food rations was not conditional on adherence to these requirements. The program ended for the general population (non-research *collines*) in April 2014 and for the 45 research *collines* in October 2014. **Table 3.6** shows the time line for all program activities.

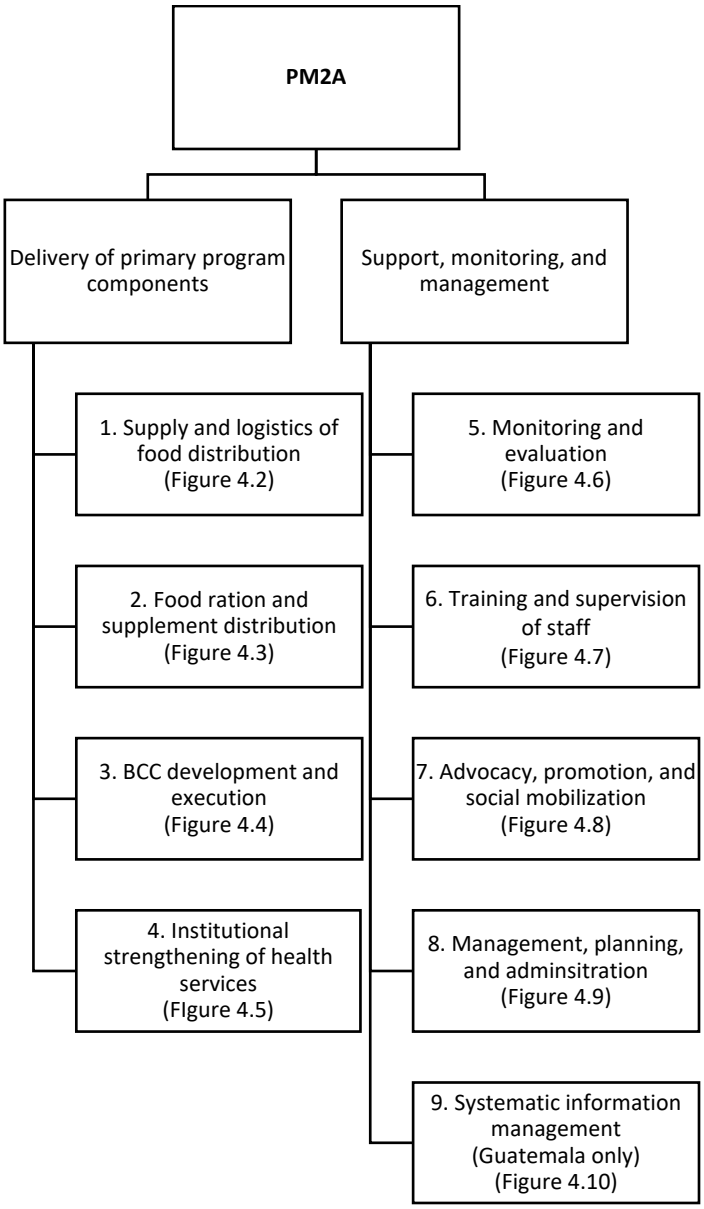
Table 3.6 Program activities time line, *Tubaramure*, Burundi

Month	Year					
	2009	2010	2011	2012	2013	2014
January			1st monitoring and evaluation quarterly report submitted			
February						
March			6th enrollment (1st enrollment in study *collines*); SILC groups began			
April		1st enrollment and distribution of food rations	7th enrollment			Program implementation ended in non-study collines
May		BCC care group meetings began				
June		2nd enrollment	8th enrollment	Enrollment in research *collines* ended		
July	*Tubaramure* program proposal awarded by USAID *Tubaramure* COP hired					
August	Formative research conducted for BCC component	3rd enrollment	9th enrollment			
September						Program implementation ended in study *collines*
October		4th enrollment; consultant from Ministry of Agriculture hired to write agricultural training manual	10th enrollment			
November	Consortium-wide BCC training on the care group method and THP responsibilities		Enrollment in general enrollment (non-research) *collines* ended; research *colline* enrollment continued			
December	1st delivery of Title II commodities to Burundi; barrier analysis studies began	5th enrollment Radio broadcast of BCC messages began				

4. Identification of AB-CCs and sub-AB-CCs

Nine AB-CCs were identified in the PM2A programs (**Figure 4.1**). The first group of four AB-CCs included the delivery of the primary program components. The first two AB-CCs dealt with food ration distributions: (1) supply and logistics of food distribution and (2) food commodities and supplement distribution. The second two AB-CCs were (3) BCC development and execution and (4) institutional strengthening of health services. The remaining AB-CCs included the activities to support, monitor, and manage the first four AB-CCs: (5) monitoring and evaluation; (6) training and supervision of program staff; (7) advocacy, promotion, and social mobilization; (8) management, planning, and administration; and (9) systematic information management (Guatemala only).

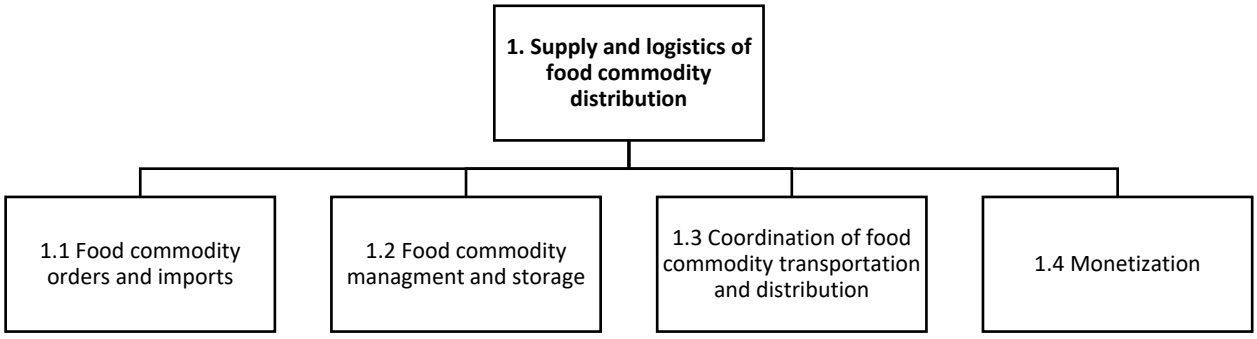
Figure 4.1 AB-CCs of the *PROCOMIDA* and *Tubaramure* PM2A programs



4.1 Supply and Logistics of Food Commodity Distribution

The first AB-CC included all the activities necessary to procure the commodities and supplements for the program and to store them before distribution to the beneficiary population; it had four sub-AB-CCs (**Figure 4.2**). The first sub-AB-CC was the procurement of food commodities through USAID (based on the projected number of beneficiaries) and importing the food commodities into the country. The second sub-AB-CC was the transportation and storage of commodities from the port of entry to warehouses. The third sub-AB-CC included all activities conducted to coordinate the delivery of rations to the beneficiary population. The final sub-AB-CC described the activity of monetizing food commodities to generate cash resources for the PM2A program.

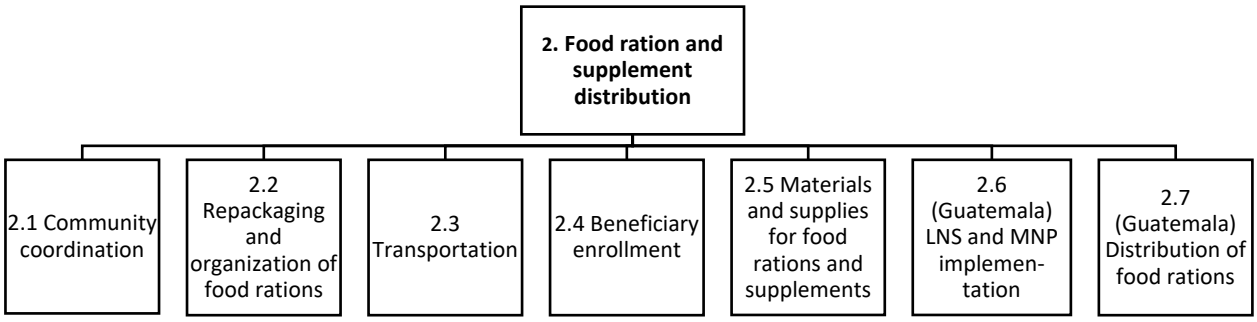
Figure 4.2 Sub-AB-CCs of supply and logistics of food commodity distribution (AB-CC 1)



4.2 Food Ration and Supplement Distribution

The second AB-CC accounted for the distribution of supplements and food rations and had seven sub-AB-CCs in Guatemala and five in Burundi (**Figure 4.3**). First was the coordination of food distribution within the communities where PM2A was implemented. In Guatemala, activities included initiation of community programs by the NGO. In Burundi, activities included community outreach to inform the population of the intended beneficiaries and program goals, and the identification of potential locations for warehouses to store the rations. The second sub-AB-CC accounted for the repackaging and organization of the food rations or supplements, and in the case of Burundi included their distribution. The third sub-AB-CC was comprised of the transportation of food commodities to the distribution sites. The fourth sub-AB-CC represented the process of managing and monitoring the list of beneficiaries who received the food rations and supplements. The fifth sub-AB-CC was the design, procurement, and transportation of packing materials; in each country, the programs distributed food rations or micronutrient supplements in special containers or bags that required design and development (in Guatemala), procurement, and transportation to the field. The sixth sub-AB-CC was the implementation of the procedures to test for and monitor allergic reactions to LNS and MNP in Guatemala. The seventh sub-AB-CC (in Guatemala only) was the distribution of food rations following the BCC sessions.

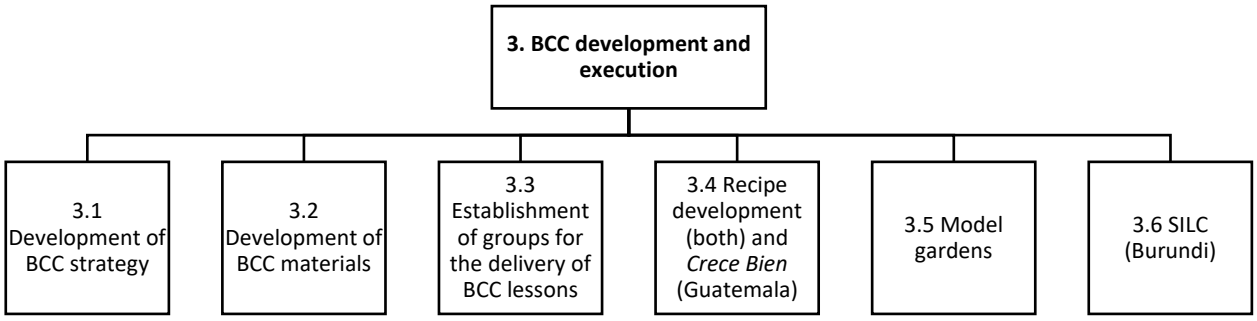
Figure 4.3 Sub-AB-CCs of food ration and supplement distribution (AB-CC 2)



4.3 BCC Development and Execution

The third AB-CC included activities for the development and execution of the BCC strategy and was composed of five sub-AB-CCs for Guatemala and six for Burundi (**Figure 4.4**). The first sub-AB-CC consisted of the formative research activities that provided the necessary data and information to develop the BCC key messages. The second sub-AB-CC was the development of BCC lesson plans, training materials, and production of other materials such as radio dramas and posters. The third sub-AB-CC consisted of the activities to organize and deliver the BCC lessons to the beneficiaries (e.g., care groups in Burundi and staff-led trainings in Guatemala). The fourth sub-AB-CC was the development of locally relevant recipes and implementation of cooking demonstrations in both countries and the implementation of the *Crece Bien* curriculum in Guatemala. The fifth sub-AB-CC included the agriculture education component, in which vegetable seeds, fruit trees, and chickens were procured and distributed, and beneficiaries were trained to use them. In Burundi, the sixth sub-AB-CC accounted for the implementation of the SILC microcredit component, which included members who were both beneficiaries and non-beneficiaries of *Tubaramure*.

Figure 4.4 Sub-AB-CCs of the BCC component (AB-CC 3)

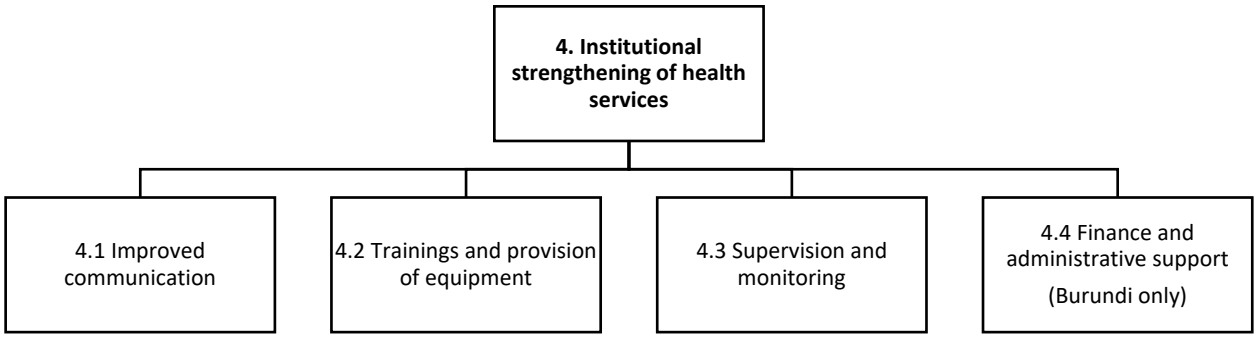


4.4 Institutional Strengthening of Health Services

The fourth AB-CC described the activities related to the institutional strengthening of the health care system that served the beneficiary population; it had three sub-AB-CCs in Guatemala and four in Burundi (**Figure 4.5**). The first sub-AB-CC described the activities to improve the communication between the beneficiary population and the health service entities that served them, at the community, municipality, or regional level. The NGOs carried out a variety of activities, including visits to communities to meet with

health workers, visits to hospitals by community committee members, and workshops with health workers on how to reduce communication barriers with the beneficiary population. The second sub-AB-CC consisted of trainings provided to community health volunteers (e.g., midwives) and to health and program staff. In Burundi, trainings were provided to provincial and local health staff and program staff to increase their knowledge in maternal and child health services. In Guatemala, community and NGO health staff were trained in the BCC lessons provided to beneficiaries in AB-CC 2. Program staff also trained health staff on how to use the anthropometric equipment provided by the NGO. The third sub-AB-CC was the supervision and monitoring of the health facilities (i.e., health convergence centers in Guatemala and health centers in Burundi) that served the beneficiary population in order to track improvements in the provision and quality of health services. The fourth sub-AB-CC (Burundi only) was the additional finance and administrative support provided to IMC, which conducted all activities for AB-CC 3 in Burundi.

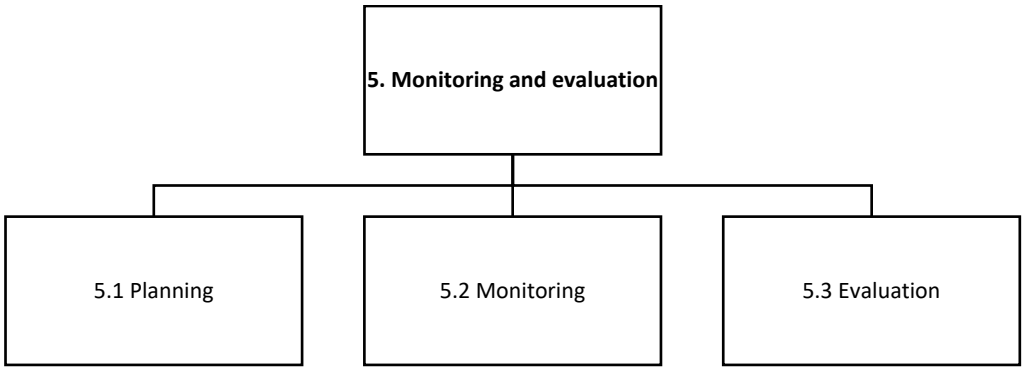
Figure 4.5 Sub-AB-CCs of institutional strengthening of health services (AB-CC 4)



4.5 Monitoring and Evaluation

The fifth AB-CC included the monitoring and evaluation activities **(Figure 4.6**). The first sub-AB-CC described the monitoring and evaluation planning stage, which included the development of program indicators, the detailed implementation plan (DIP), and the annual evaluation of the indicators and the DIP. The second sub-AB-CC was the monitoring of program activities, such as the delivery of BCC lessons, food distribution to beneficiaries, and the monitoring of the program's food commodities in local markets. The third sub-AB-CC contained the activities to realize the baseline, midline, and endline surveys required by USAID.

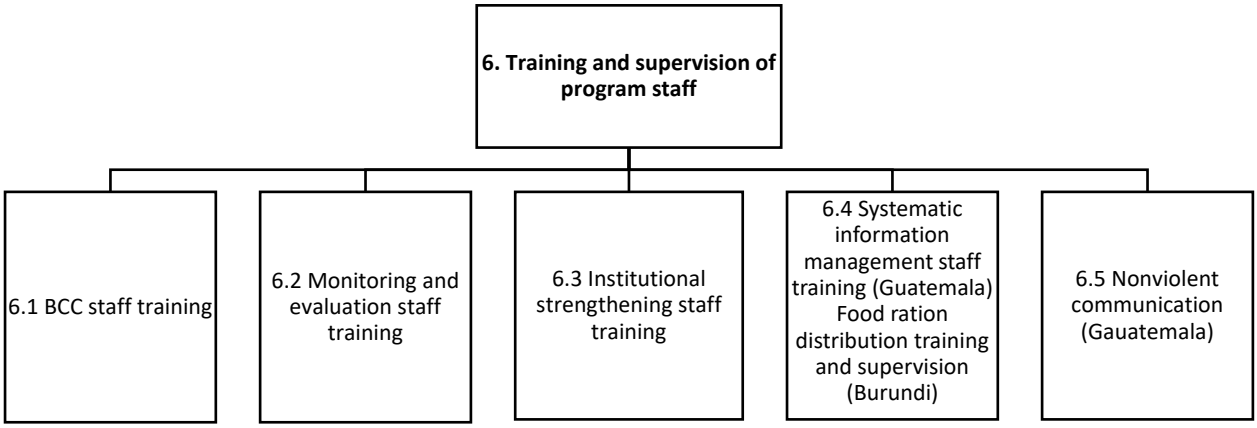
Figure 4.6 Sub-AB-CCs of monitoring and evaluation (AB-CC 5)



4.6 Training and Supervision of Program Staff

The sixth AB-CC (the training and supervision of program staff) included four sub-AB-CCs for Burundi and five for Guatemala (**Figure 4.8**). It included the training and supervision of staff to lead BCC sessions (first sub-AB-CC), monitoring and evaluation activities (second sub-AB-CC), and the institutional strengthening trainings of MOH staff (third sub-AB-CC). Additional sub-AB-CCs differed between Burundi and Guatemala. For Burundi, the fourth sub-AB-CC was the training and supervision of the staff handling the food commodities. The two remaining sub-AB-CCs unique to Guatemala were training the systematic information management technicians and training all *PROCOMIDA* staff in nonviolent communication. The latter was intended to improve communication between *PROCOMIDA* staff and the beneficiary population.

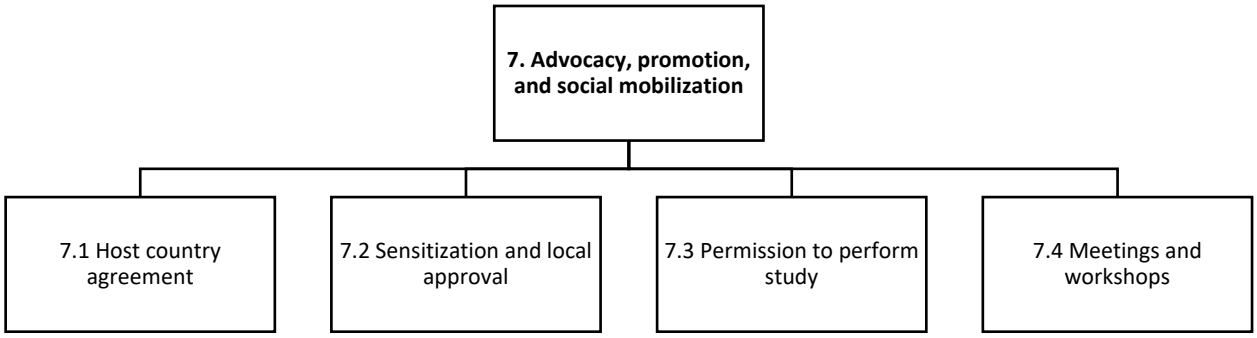
Figure 4.7 Sub-AB-CCs of training and supervision of staff (AB-CC 6)



4.7 Advocacy, Promotion, and Social Mobilization

The seventh AB-CC included the advocacy, promotion, and social mobilization activities; it had four sub-AB-CCs (**Figure 4.8)**. The first sub-AB-CC described the process of obtaining the host country agreement (HCA) (i.e., national approval). The second described the sensitization and approval process at both the provincial and community levels. The third detailed the activities necessary to obtain permission to conduct the research component of the program. The fourth sub-AB-CC entailed the continued engagement, coordination, and communication with partner NGOs, government officials, and USAID.

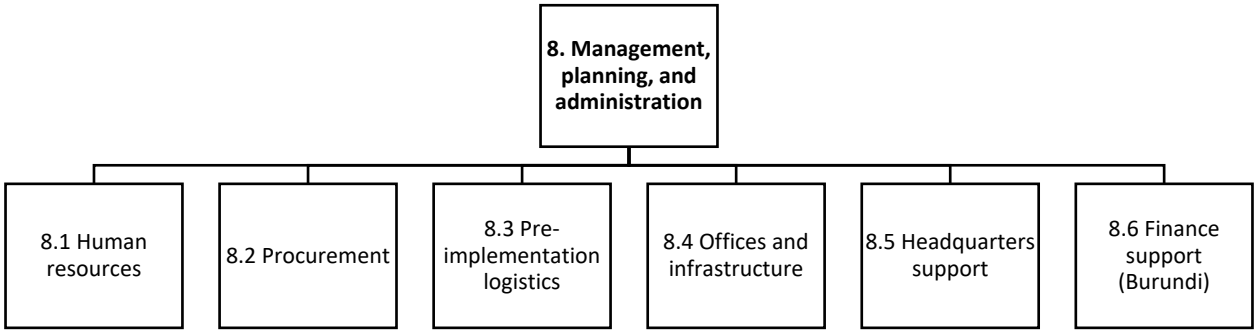
Figure 4.8 Sub-AB-CCs of advocacy, promotion, and social mobilization (AB-CC 7)



4.8 Management, Planning, and Administration

The eighth AB-CC (program management, planning, and administration) provided the financial and administrative support for all other AB-CCs and had five sub-AB-CCs (**Figure 4.9**). The first sub-AB-CC described human resources activities, such as hiring employees, providing initial training, and processing work visas for international employees. The second sub-AB-CC detailed the procurement of supplies and equipment, such as computers, desks, and office supplies. The third sub-AB-CC described the start-up activities, such as proposal writing and coordinating with local offices. The fourth sub-AB-CC included the activities to coordinate the central and field offices. The fifth sub-AB-CC (headquarters support) described the communication among the NGO's local, national, and international offices. The Burundi program had a sixth sub-AB-CC (the finance and administration support provided by supporting staff).

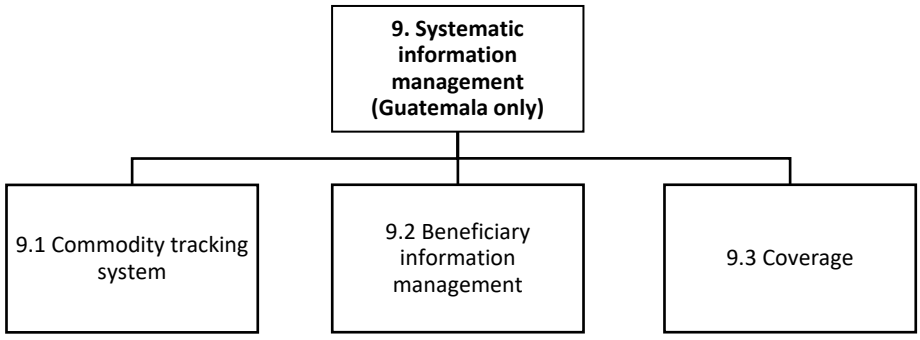
Figure 4.9 Sub-AB-CCs of management, planning, and administration (AB-CC 8)



4.9 Systematic Information Management

The activities in the ninth AB-CC (**Figure 4.10**) constituted systematic information management, which was only conducted in Guatemala. It had three sub-AB-CCs. The first sub-AB-CC was the tracking of commodities via the commodity tracking system. The second sub-AB-CC was the management of beneficiary information and the generation of monthly reports. The final sub-AB-CC was the monitoring of the program's coverage in order to ensure that the targeted number of beneficiaries was reached.

Figure 4.10 Sub-AB-CCs of systematic information management (AB-CC 9)



5. Detailed Program Descriptions

5.1 Detailed Program Description: *PROCOMIDA*, Guatemala

The following section presents a detailed description of the activities and time lines of the *PROCOMIDA* program in Guatemala, organized by the AB-CCs and sub-AB-CCs identified in Chapter 4.

5.1.1 AB-CC 1: Supply and Logistics of Food Commodity and Supplement Distribution

The first AB-CC included the activities necessary to order and store food commodities and supplements, and was comprised of four sub-AB-CCs. The program activities had to accommodate long distances between the port and the *PROCOMIDA* warehouse in Cobán and climate conditions that could negatively affect the storage and quality of commodities. **Table 5.1** summarizes the years when each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.1 AB-CC 1: Supply and logistics of food commodity and supplement distribution activities by year, *PROCOMIDA*

Sub-AB-CC	2009	2010	2011	2012	2013	2014	2015
1.1 Food commodity orders and imports							
1.1a Food commodity orders	SU	PSU	PSU	PSU	PSU	PSU	
1.1b Food commodity imports	SU	PSU	PSU	PSU	PSU	PSU	
1.2 Food commodity management and storage							
1.2a Transportation of food commodities from port to in-transit warehouse	SU	PSU	PSU	PSU			
1.2b Food commodity storage in Zacapa warehouse	SU	PSU	PSU	PSU			
1.3 Coordination of food commodity transportation and distribution							
1.3a Transportation to Cobán warehouse		PSU	PSU	PSU	PSU	PSU	
1.3b Food commodity storage in Cobán warehouse		PSU	PSU	PSU	PSU	PSU	PSU
1.4 Monetization	SU	PSU	PSU	PSU	PSU	PSU	

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 1.1: Food Commodity Orders and Imports

The goal of the first sub-AB-CC was to ensure an adequate supply of food commodities for the duration of the program.

Sub-AB-CC 1.1a: Food Commodity Orders (Start-Up and Post-Start-Up)

Using beneficiary numbers confirmed by the field program manager, the operations manager calculated the quantity of food rations and commodities needed for the subsequent fiscal year and sent the estimations to the program director for approval. The operations manager then developed and sent the annual estimate of requirements and the corresponding section of the pipeline and resources estimate proposal (PREP) to the program office for review and approval. The program office sent the documents to MC headquarters in Guatemala, which forwarded them to USAID. Following approval from USAID, the operations manager prepared the commodity request order—signed by the program director—and sent it to USAID Guatemala for authorization. USAID Guatemala then forwarded the document to FFP Guatemala. MC headquarters entered the food commodity request into the United States Department of Agriculture requests system. Operations management monitored the progress of the export process in

communication with the shipping agent until it arrived at Puerto Barrios, Guatemala. There were 13 commodity request orders throughout the program: two in 2010, two in 2011, three in 2012, four in 2013, and two in 2014.

Sub-AB-CC 1.1b: Food Commodity Imports (Start-Up and Post-Start-Up)

Once the food commodity shipment arrived at the Caribbean port (Puerto Barrios, Guatemala), the logistics officer contacted the shipping company to confirm the terms of the ocean freight shipping service. The operations manager received and reviewed the shipping documents and sent them to the logistics officer. The logistics officer then prepared the draft letters for Guatemalan authorities and sent them, along with a copy of the shipping documents for payment of duties to the Superintendent of Tax Administration (*Superintendencia de Administración Tributaria*) (SAT), to the operations manager for review before sending them to USAID Guatemala for its approval and signature. The logistics officer further prepared and sent draft letters requesting port fee exemptions to the operations manager. The operations manager sent these letters to the program director for signature before forwarding them to the National Port Authority in Santo Tomas de Castilla for approval. A copy of the decision was sent to the port to prepare the final written orders. The logistics officer gave the original shipping documents to the customs agency to initiate the import permit process with the Ministry of Agriculture, Livestock, and Food (*Ministerio de Agricultura, Ganadería y Alimentación*) (MAGA) and MSPAS. The customs agency prepared the shipping documents and obtained a signature from USAID to receive the import permit. USAID collected the import duties from SAT and provided them to the customs agency, which then prepared the customs entry forms, requested the electronic signature from SAT for authorization, and sent an agent to the port to coordinate the fumigation of any grain and flour containers.

The fumigation of the grain and flour containers was coordinated by the customs agent with the International Regional Organization for Plant and Animal Health *(Organismo Internacional Regional de Sanidad Agropecuaria*) (OIRSA) of MAGA (MAGA-OIRSA) and monitored by the logistics officer. The logistics officer prepared letters to the shipping agency requesting the release of containers for each bill of loading and sent them to the operations manager for review. The operations manager then sent the letters to the program director for signature and coordinated their delivery, along with the original bills of lading, to the shipping agency. The shipping agency then authorized the release of the containers. MAGA-OIRSA released the containers and authorized their customs clearance. The customs agent coordinated the food commodities' release and customs clearance, and the transportation of the container cargo. The shipping inspection company and a *PROCOMIDA* representative supervised the barge's docking and the unloading of the containers at port. At this time, the inventory was checked to ensure that nothing was missing before releasing the shipment. The shipping inspection company sent a detailed report of any observed damages to the containers to the logistics officer and, if necessary, sent a letter of complaint to the shipping company regarding missing inventory.

Sub-AB-CC 1.2: Food Commodity Management and Storage

The goal of the second sub-AB-CC was to transport goods from port to an in-transit warehouse, which was used when waiting for the Cobán warehouse to be ready and when extra storage was required. An important objective of this activity was to maintain the quality of the food commodities until they were distributed to beneficiaries.

Sub-AB-CC 1.2a: Transportation of Food Commodities from Port to In-Transit Warehouse (Zacapa) (Post-Start-Up)

Containers were transported to the in-transit warehouse in Zacapa after they were released from customs. This activity took place until February 2012, when the program began transporting containers directly to the Cobán warehouse. The transportation plan (i.e., amount of food to be transported, which food should leave first, and the date the containers would be returned to the port) was prepared by the logistics officer

and the operations manager and sent to customs to coordinate container departure. Before transporting the containers, an inspector verified that the container seal had not been broken and supervised its transfer. A waybill detailing the name of the driver, content of container, and other pertinent information was presented before leaving customs.

A transportation company was in charge of transporting and unloading the food from the containers. When the driver arrived at the Zacapa warehouse, he presented the importation documents to the inspector, who verified the information. The inspector broke the container seal and inspected the contents of the container for any damage. Once the inspection was finished, the container was unloaded and food commodities were placed in the warehouse according to the transportation plan. The quantity of food commodities received was confirmed and any discrepancies were reported to the operations manager. When processing was completed, the warehouse sent a final report to the *PROCOMIDA* office, and containers were returned to port.

Sub-AB-CC 1.2b: Food Storage in Zacapa Warehouse (Post-Start-Up)

Upon arrival of the food commodities at the Zacapa warehouse, the containers were immediately fumigated. The warehouse manager cleaned the facility daily, inspected the food commodities, ensured the warehouse was in good condition, reported any damages, and followed the basic warehouse standards and physical inventory protocol. Pest control was carried out every 15 days for both treatment and prevention.

Sub-AB-CC 1.3: Coordination of Food Commodity Transportation and Distribution

The goal of the third sub-AB-CC was to transport goods from port or the in-transit warehouse to the Cobán warehouse. One objective of this activity was to maintain the quality of food commodities and ensure an adequate supply for repackaging and distribution to beneficiaries.

Sub-AB-CC 1.3a: Transportation to Cobán Warehouse (Post-Start-Up)

The operations manager and logistics officer prepared the plan to transport the containers from Zacapa to Cobán. The plan assigned the transportation order of food commodities and quantities to be shipped. Each driver of the transportation company in charge of transporting and unloading the containers received a waybill written by the Zacapa manager and a copy of the customs declaration. Upon arrival at the Cobán warehouse, the driver presented the documents to verify the contents of the truck. Once the inspection was completed, the truck was unloaded according to the transportation plan, and any discrepancies in the quantities of food commodities received were documented. The warehouse assistant-dispatcher prepared the warehouse for the receipt of these commodities. When the process was completed, the warehouse sent a final report to the *PROCOMIDA* office documenting the final quantity of food commodities received.

After the Zacapa warehouse closed in February 2012, food commodities were transported directly from the port to the Cobán warehouse.

Sub-AB-CC 1.3b: Food Commodity Storage in Cobán Warehouse (Post-Start-Up)

Food commodities were immediately fumigated upon their arrival at the Cobán warehouse. Every day the warehouse manager cleaned the facility, inspected the food commodities, ensured the warehouse was in good condition, reported any damages, and followed the basic warehouse standards and physical inventory protocol. Pest control was carried out every 15 days for both treatment and prevention.

Sub-AB-CC 1.4: Monetization (Start-Up and Post-Start-Up)

Crude degummed soybean oil was monetized throughout the *PROCOMIDA* program by CRS on behalf of MC. The original proposal assigned a 3-percent management fee for CRS; however, the revised PREP lowered this fee to 1 percent. FFP first approved the PREP before the memorandum of understanding was

negotiated and signed. The first monetization request for two shipments was received in 2010. CRS signed the contract with the buyer, who provided a letter of credit within 30 days. Once the shipment arrived in port, the bank made payment to the CRS account. CRS then transferred funds to MC. Five additional monetization requests were approved: two in 2011, two in 2012, and one in 2013.

5.1.2 AB-CC 2: Food Ration and Supplement Distribution

The seven sub-AB-CCs of AB-CC 2 detailed the coordination of food ration and supplement distribution to beneficiaries. Many of the sub-AB-CCs were start-up activities or were conducted only at specific times during the program cycle. In order to distribute food rations to 357 different health convergence centers and manage the distribution of different family ration sizes and individual supplements, the activities in AB-CC 2 focused on coordinating with local communities, strategically repackaging the food rations at the warehouse, constructing an efficient transportation network, enrolling beneficiaries, and distributing the rations to beneficiaries. **Table 5.2** summarizes the years when each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.2 AB-CC 2: Food ration and supplement distribution activities by year, *PROCOMIDA*

Sub-AB-CC	2009	2010	2011	2012	2013	2014	2015
2.1 Community coordination	SU	SU	SU	PSU	PSU	PSU	
2.2 Repackaging and organization of food rations		PSU	PSU	PSU	PSU	PSU	PSU
2.3 Transportation							
2.3a Designing transportation routes	SU	SU	SU	PSU	PSU		
2.3b Transportation contracts		SU	PSU	PSU	PSU	PSU	PSU
2.3c Transportation to distribution sites		PSU	PSU	PSU	PSU	PSU	PSU
2.4 Beneficiary enrollment							
2.4a Beneficiary cards		SU	SU/PSU	PSU	PSU	PSU	
2.4b Beneficiary enrollment lists		SU	SU	PSU	PSU	PSU	
2.5 Materials and supplies for food rations							
2.5a Cloth bag design, development, and production	SU	SU	PSU	PSU			
2.5b Food ration bag design, development, and production	SU	SU	PSU	PSU	PSU	PSU	
2.5c LNS and MNP supplement bag design		SU	SU				
2.6 LNS and MNP implementation			SU	PSU	PSU	PSU	PSU
2.7 Distributing food rations to beneficiaries		PSU	PSU	PSU	PSU	PSU	PSU

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 2.1: Community Coordination (Start-Up and Post-Start-Up)

Setting up communication channels early in the program and establishing trust was necessary to the *PROCOMIDA* program's success in Alta Verapaz. In doing so, the *PROCOMIDA* program was able to address questions concerning the goals of the program and differences in food ration sizes between communities. The first step for community coordination was to choose the health convergence centers to be included in *PROCOMIDA*. The health convergence centers were selected by surveying all health convergence centers in the four chosen municipalities of Alta Verapaz. A field technician visited each health convergence center between January and March 2010 to document the location, road access and conditions, infrastructure, and existing warehouse conditions. The potential number of *PROCOMIDA* beneficiaries was calculated using registries provided by the FC. During these visits, program information

was disseminated to the local health convergence center staff and health commission. The field technicians' findings were communicated to the systematic information management unit, which entered the data into a database and consolidated it into a report for *PROCOMIDA* managers.

After the report was finalized, all of the health convergence centers that met the program criteria were revisited in May 2010. These visits were coordinated by the institutional strengthening manager and attended by one or two *PROCOMIDA* field technicians. All community members were invited to attend a meeting at the health convergence center during which the program was explained and members were given the opportunity to ask questions. Community members then voted to determine if the community would participate in *PROCOMIDA.* If approved, the health commission was asked to sign a form confirming its intended participation and acknowledging the *PROCOMIDA* regulations.

Next, *PROCOMIDA* technicians and the health commissions evaluated the community infrastructure in May and June of 2010 to determine whether an existing community warehouse could be used to provide a safe and clean storage area for food rations or one needed to be built. The required size of the community warehouse was determined by the number of estimated beneficiaries at each health convergence center. Since the majority of communities did not have a warehouse suitable for storing food rations, *PROCOMIDA* provided recommendations for improving the existing warehouse. At a subsequent meeting, beneficiaries agreed on an investment plan for the voluntary contributions (see sub-AB-CC 4.3f) and the initial distribution dates were determined.

In May 2011, *PROCOMIDA* deliberated whether to add additional health convergence centers in the Senahu and Chisec municipalities in order to meet the target number of beneficiaries. After completing the selection process and ensuring that the health convergence centers met program criteria, it was decided in January 2012 to include the additional health convergence centers.

Although the community coordination activity's main goal was to select the health convergence centers and obtain agreement from the community for program distribution, *PROCOMIDA* found that regular communication and community meetings were needed to provide program continuity, particularly during health convergence center staff turnover. These meetings were conducted by the field manager and field technicians.

Sub-AB-CC 2.2 Repackaging and Organization of Food Rations (Post-Start-Up)

To ensure that each health convergence center received the correct food ration size and to minimize ration spoilage and waste, steps were taken to coordinate the distribution and repackaging of rations at the main warehouse.

Distribution start dates were determined when beneficiaries enrolled at each distribution site (see sub-AB-CC 2.4b). After the initial enrollment process, field technicians calculated the quantity of food rations required each month using ration distribution sheets (see sub-AB-CC 3.3b). These quantities were then submitted by regional coordinators to the field program manager. The field program manager then consolidated the quantity of food rations needed per health convergence center from the three *PROCOMIDA* regions and sent a general order to the operations management at the *PROCOMIDA* warehouse in Cobán, where all food commodities were stored before being transported to the distribution sites.

At the *PROCOMIDA* warehouse, the order was given to the logistics officer, who prepared the production order. Following approval by the warehouse manager, the production order was given to the packing company representative. The packing company representative, who was based in the main warehouse in Cobán, then created a production plan with the number of rations of each type that needed to be repackaged each day. This production plan was sent to the operations manager, the Cobán warehouse manager, and the logistics officer. The warehouse manager used the production plan to release the

required food rations, supplements, and packaging material (see sub-AB-CC 2.3) to the packing company representative.

The packing company crew was responsible for packaging the requested food rations into bags according to the production plan. Once this was completed, the packing company prepared pallets of the pre-packaged food rations and released them to the Cobán warehouse manager who was in charge of preparing a re-entry document for the pre-packaged rations. Both the warehouse manager and the packing company representative signed the re-entry document to verify the total amount of received food rations. The warehouse manager then organized the pallets of pre-packaged rations by distribution date, treatment arm, and type of food ration (see sub-AB-CC 1.2c).

In 2012, MC decided that the program, rather than an outside firm, should be in charge of repackaging food rations. MC purchased the necessary capital equipment and began managing the repackaging of rations with its own staff. In addition, the purchase of capital equipment allowed MC to begin repackaging oil so that it was distributed monthly instead of every 2 months.

Sub-AB-CC 2.3: Transportation

To ensure that monthly distributions of food rations occurred with minimal errors, staff designed transportation routes and contracts to minimize risks.

Sub-AB-CC 2.3a: Designing Transportation Routes (Start-Up)

In May 2010, a *PROCOMIDA* staff member created a digital map of all access routes. This made it possible to calculate the distance from the central warehouse in Cobán to each health convergence center. Once the distance was determined, each health convergence center was classified according to the size of the family ration, type of supplement, and size of the beneficiary population. Routes were initially designed according to research arm to decrease the chance of sending the incorrect size and type of rations to health convergence centers. However, in late 2011 the routes were changed to include all health convergence centers in one area, as transportation costs and distances made distributing routes by treatment arm costly and time-consuming. The new transportation routes allowed *PROCOMIDA* to establish monthly delivery dates. Food rations were delivered to the health convergence centers 1 day before their distribution to beneficiaries by a contracted transport company (see sub-AB-CC 2.3b). Routes were then verified with the contract company to confirm time and distances. In June 2011, additional routes were designed to incorporate the new health convergence centers from the Senahu and Chisec municipalities.

Sub-AB-CC 2.3b: Transportation Contracts (Start-Up and Post-Start-Up)

In January 2010, the operations manager, the field manager, the Technical Support Unit manager, and the COP began designing the terms of reference for the transportation contracts. To decrease transportation problems, the terms of reference specified the types of vehicles and the number of drivers and assistants needed, and established fines for failing to make timely distributions. Discussions were held from January to May 2010 to determine the content of the terms of reference, as the health convergence centers, routes, and distribution dates had yet to be finalized. Once the terms of reference were complete, a competitive bidding process was implemented, and the contract for the winning bid was signed in July 2010. The winning company was chosen based on its references, demonstrated reliability, and budget. *PROCOMIDA* renewed the contract for each subsequent year.

Sub-AB-CC 2.3c: Transportation to Distribution Sites (Post-Start-Up)

The *PROCOMIDA* logistics officer was responsible for coordinating transportation for the food ration distributions with the contracted company. This included determining the daily number of food rations that needed to be transported and the vehicles needed, as the size of the beneficiary population and

distribution routes changed over the course of the program. Along with the warehouse manager, the logistics officer also coordinated the release of the repackaged food rations in Cobán using the production plan (see sub-AB-CC 2.2). The distribution crew verified the quantity of food rations and loaded the rations into the trucks. The warehouse manager then prepared a release document for each truck, which was signed by the warehouse manager and the truck driver. Trucks traveled directly to the health convergence center and the crew unloaded the food rations in the health convergence center's warehouse the day before distribution. At each health convergence center, a member of the health commission met the trucks and verified the number of rations delivered. Any remaining food rations were returned to the Cobán warehouse.

Sub-AB-CC 2.4: Beneficiary Enrollment

Managing beneficiary enrollment created a challenge for *PROCOMIDA*, as the program planned to enroll 31,500 households throughout its duration. The beneficiary enrollment process described below was intended to curtail potential enrollment issues.

Sub-AB-CC 2.4a: Beneficiary Cards (Start-Up and Post-Start-Up)

The first step in beneficiary enrollment was to design the beneficiary card. The Technical Support Unit manager, Systematic Information Management Unit manager, and field program manager designed the initial beneficiary card with the following information: (1) *PROCOMIDA* name and logos, (2) the name of the beneficiary or child's mother; (3) the family program number, (4) beneficiary state (e.g., pregnant, mother with child under 6 months of age, or child 6–23 months), (5) name and code of the health convergence center, and (6) the month enrolled. Each card contained a space to punch a hole, which would indicate whether the beneficiary attended the monthly BCC session. The research arm or type of food ration to be received was not printed on beneficiary cards. Beneficiary cards were printed in-house by *PROCOMIDA*.

The beneficiary card was redesigned in July 2011 to simplify fieldwork. The new card included an area to note the beneficiary's transition from being pregnant to being a mother with a child under 6 months of age, to having a child 6–23 months.

Sub-AB-CC 2.4b: Beneficiary Enrollment Lists (Start-Up)

The month prior to the first distribution at a health convergence center, field technicians and community members met to disseminate information on the program guidelines. Field technicians explained who could participate and what the commitments and responsibilities of the beneficiaries and the community would be in regards to program participation. At the community meeting, a date and time was set for the initial beneficiary enrollment. Initial beneficiary enrollment was open to pregnant women, women with children under 6 months of age, and children 6–18 months of age. For each health convergence center, the field technician arrived at the predetermined date and time to fill out the beneficiary enrollment sheets. The beneficiaries were asked to provide supporting documents and their fingerprints. The enrollment sheets were first sent to the regional coordinator and then to the Systematic Information Management Unit, where each beneficiary was assigned a beneficiary and family number. After the first round of enrollment concluded, new beneficiaries were enrolled during monthly food ration distributions by field technicians (see sub-AB-CC 2.7).

Sub-AB-CC 2.5: Materials and Supplies for Food Rations

PROCOMIDA used three types of bags to distribute food commodities and supplements to beneficiaries: (1) a cloth bag that was provided to each beneficiary to help carry the family and individual food rations home, (2) plastic bags for pre-packaging the food rations (i.e., rice, CSB, and pinto beans) at the *PROCOMIDA* Cobán warehouse, and (3) bags to store monthly supplies of the LNS and MNP supplements.

Sub-AB-CC 2.5a: Cloth Bag Design, Development, and Production (Start-Up and Post-Start-Up)

In 2009 and early 2010, the *PROCOMIDA* program director decided that each beneficiary should receive a cloth bag to help carry her food rations and supplements home. These bags were called master bags. Three sizes of master bags were needed—one for each size of family rations. The master bag had to display the necessary logos, be waterproof, and have a Velcro flap closure. The *PROCOMIDA* COP produced a sketch of the master bag, which was provided to a vendor who produced a prototype. The prototype was then sent, along with terms of reference, to potential production companies. Once a vendor was chosen from among the bids, a prototype was produced and tested in the field. The field testing included conducting focus groups with women in Alta Verapaz to receive feedback on the bag's color and size, the flap design, and other aspects of the bag. Orders were placed after the conclusion of the testing phase. The master bags were purchased and delivered to the Cobán warehouse in two installments for the first year of beneficiaries in 2010, and in one installment for new beneficiaries in each successive year of the program.

Sub-AB-CC 2.5b: Food Ration Bag Design, Development, and Production (Start-Up and Post-Start-Up)

In 2009 and 2010, the COP's assistant scouted for food bag production companies that could produce bags that were plastic, breathable, and durable. *PROCOMIDA* requested examples from potential companies to determine the preferred bag design. Once the design was chosen, quotes were requested and a contract was awarded to the production company with the winning bid. Five different bags had to be developed: two for rice (full and reduced ration size), two for beans (*idem*), and one for CSB.

Simultaneously, a bidding process was under way to choose an artist for the graphic design of the food bags. The design had to include the *PROCOMIDA* logo and depict a key BCC message. Designs were submitted to and reviewed by the Guatemala City office. Three artists were chosen, and field technicians held multiple focus groups in April 2010 to select the winner. The artist who was awarded the contract designed the food bags and developed all other *PROCOMIDA* graphics for the program.

The artist and bag production company worked together to coordinate the bag designs. The design for each bag included a drawing of the key BCC message, a picture of the commodity, and the appropriate logos. In 2010, the COP's assistant worked with the bag production company and the artist to develop 12 bag designs with different key messages that could be used throughout the program. Each design was submitted to *PROCOMIDA* for approval. Once approved, the artist and bag production company began the production of food bags for the first 6 months of distribution. The first food bag order was filled on June 2010—1 month before the first food ration distribution. New supplies of food bags were produced and delivered to the Cobán warehouse every 2 months.

Sub-AB-CC 2.5c: LNS and MNP Supplement Bag Design (Start-Up)

A 1-month supply of individual dose sachets of LNS and MNP were packaged inside a larger bag. Although the production costs of the sachets and bags were included in the price of the supplements, the sachet and bag had to be designed and field-tested.

As part of the formative research conducted in February 2010 (see sub-AB-CC 3.1a), field technicians piloted a preliminary design of the LNS sachet and bag that was developed by Nutriset—the France-based company that produced the LNS. The preliminary design was then presented to a focus group to help determine whether beneficiaries would understand and approve of the bag's design. Comments and suggested modifications based on the focus group were sent to Nutriset, and the final designs of the bag and sachet were approved by the COP in March 2010.

In November 2010, *PROCOMIDA* designed the MNP sachet and bag based on the LNS design to maintain consistency. In December 2010, *PROCOMIDA* field technicians conducted a pilot test of the

design. Feedback from the pilot test was used to finalize a design, which was then sent to Hexagon—the India-based company that produced the MNP.

Sub-AB-CC 2.6: LNS and MNP Implementation (Start-Up and Post-Start-Up)

In 2011, MSPAS approved implementation of the LNS and MNP research arms on the condition that recipients first be tested for allergic responses and that a registry of supplement recipients be maintained. To plan for the rollout of the LNS and MNP arms, IFPRI and *PROCOMIDA* managers met monthly from January 2011 until August 2011 to discuss the strategy for the allergic reaction protocol, supplement registry, and training of local health leaders. *PROCOMIDA* health technicians and local nursing students—who would provide support for the first month of implementation—were trained in the survey and allergic reaction protocol in July 2011. The first survey and protocol were implemented in the LNS and MNP arms in August and September, respectively. IFPRI was responsible for data entry and analysis of the surveys and provided *PROCOMIDA* with monthly lists of beneficiaries who could not receive the LNS and MNP supplement due to allergic reactions. *PROCOMIDA* personnel were responsible for verifying which beneficiaries could not receive the supplement.

Sub-AB-CC 2.7: Distributing Food Rations to Beneficiaries (Post-Start-Up)

While one field technician gave the BCC lesson, the other worked with a representative from the community health commission, who was trained by the field technician on the management of food rations during distributions, to prepare the distribution site. Following the BCC lesson, beneficiaries presented their beneficiary cards at the distribution site, verified their participation in the BCC session, gave a voluntary contribution (i.e., a pre-determined amount of money that each beneficiary should provide each month) to the health commission treasurer, and signed both the original and a copy of the distribution roster. Once this was completed, the members of the health commission began distributing the appropriate food rations and supplements to the beneficiaries. After all rations and supplements were distributed, the field technician left a copy of the distribution roster at the health convergence center. Notes on all activities, such as the amount of voluntary contributions collected, the number of distributed rations, BCC discussion topics, and the date for the next distribution, were recorded by the field technician. A feedback session between the health commission members and the field technicians was held at the end of the day.

To track each beneficiaries' participation, the field technicians filled out a roster at each BCC session and each food ration and supplement distribution site. These rosters were available in print, as well as in an electronic format using each field technician's personal digital assistant (PDA). The PDA software was part of the planning and performance system (PPS) designed by the Systematic Information Management Unit (see AB-CC 9) to track beneficiary participation, status, and receipt of food rations. If a new beneficiary was in attendance, the field technician filled out a registration form. If a beneficiary missed two BCC sessions, the field technician was required to make a home visit after the BCC lesson. If BCC lessons were missed due to illness of the mother or child, the field technician would provide counsel. If a beneficiary missed 3 months of BCC lessons, her enrollment was terminated.[19]

During enrollment, the field technician verified the birth date of each child. No procedure was conducted to verify whether a mother was pregnant. Field technicians then conducted a brief survey for beneficiaries in the D (LNS+FFR) and E (MNP+FFR) arms to determine if beneficiaries should not receive LNS or MNP because of allergic reactions, asthma, or a child who was receiving treatment for malnutrition. After completing the survey and noting the information in the field technician's roster and PDA, the beneficiary was allowed to join the food distribution line. The enrollment form was sent to the regional coordinator and then to the Systematic Information Management Unit to assign a beneficiary and family number.

[19] In April 2013, *PROCOMIDA* changed the rule so that women were allowed to re-enter the program at any time regardless of how many BCC sessions they had missed.

Beneficiary cards were distributed the following month, at which point beneficiaries would begin participating in BCC lessons and begin receiving monthly food rations.

5.1.3 AB-CC 3: BCC Development and Execution

The third AB-CC included activities for the development and execution of the BCC strategy and consisted of five sub-AB-CCs. The activities in AB-CC 3 focused on developing the overall BCC strategy, the materials to use in the strategy, BCC lessons that were effective, efficient, and culturally appropriate, and the delivery of these lessons to the beneficiaries. **Table 5.3** summarizes the years when each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.3 AB-CC 3: BCC development and execution activities by year, *PROCOMIDA*

Sub-AB-CC	2009	2010	2011	2012	2013	2014	2015
3.1 Development of BCC strategy							
3.1a Formative research	SU	SU					
3.1b Development of key messages		SU	SU	PSU			
3.2 Development of BCC materials							
3.2a Development of lessons		SU	SU	SU	SU	PSU	PSU
3.2b Development and production of flip charts		SU	SU	SU	SU	PSU	PSU
3.2c Radio spots			SU	SU	SU	PSU	PSU
3.2d Poster production			SU			PSU	PSU
3.2e Publicity sign development and production		SU	SU	SU	SU	PSU	PSU
3.2f BCC reports		SU	SU	SU	SU	PSU	PSU
3.3 Establishment of groups for delivery of BCC lessons							
3.3a Selection, training, and role of leader mothers		PSU	PSU	PSU	PSU	PSU	PSU
3.3b Designing the typical work day		SU	PSU	PSU			
3.3c Delivering BCC lessons		PSU	PSU	PSU	PSU	PSU	PSU
3.3d Demonstration of monthly recipe to leader mothers		PSU	PSU	PSU	PSU	PSU	PSU
3.3e Making home visits to beneficiaries		PSU	PSU	PSU	PSU	PSU	PSU
3.4 Recipe development and *Crece Bien*			PSU	PSU	PSU	PSU	PSU
3.5 Model gardens				PSU	PSU	PSU	PSU

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 3.1: Development of BCC Strategy

BCC lessons were developed using formative research to understand the cultural context of health and child care barriers and create well-designed messages that were simple to teach and understand.

Sub-AB-CC 3.1a: Formative Research (Start-Up)

Formative research was conducted in conjunction with IFPRI, which developed the research design, survey, and training materials. There were three main objectives of the formative research: (1) inform the institutional strengthening activities that would be implemented by *PROCOMIDA*, (2) inform the development of the BCC strategy, and (3) test the acceptability of the LNS and MNP products.

For the first and second objectives, formative research was conducted in 2009 in five of the 16 municipalities in Alta Verapaz—Cobán, Carchá, Senahú, Panzós, and Cahabón. One community from each municipality and its associated health convergence center were included in the study. The research

included a health facility assessment of the health convergence centers; key informant interviews with members of the EBS; semi-structured interviews and focus group discussions with pregnant women, women with children under 2 years of age, fathers, and grandmothers; and quantitative data collected through a household survey. IFPRI designed the formative research, and *PROCOMIDA* hired a consulting firm to conduct the focus groups and interviews. The consulting firm was responsible for hiring all field workers, monitoring their work, and facilitating their training with guidance and input from IFPRI and *PROCOMIDA*. Once the data were collected, IFPRI conducted the analyses and shared the findings with *PROCOMIDA* at a workshop held in Guatemala. At this workshop, *PROCOMIDA* and IFPRI discussed the results of the formative research and began identifying topics and key messages for the BCC sessions.

Finally, the acceptability of MNP and LNS supplements was assessed for 6 weeks beginning in October 2010. The research was conducted in five of the 16 municipalities in Alta Verapaz—Cobán, Carchá, Senahú, Panzós and Cahabón. The participants were a convenience sample of pregnant women, lactating women with children 0–5 months of age, and children 6–23 months of age and their mothers. The acceptability tests were conducted separately for pregnant and lactating women, and for children 6–23 months. They included a test feeding, focus group discussion, ratings of the product's organoleptic properties, and an assessment of allergic symptoms. The results of the acceptability trials were used to inform the LNS and MNP feeding strategies taught in the BCC lessons.

Sub-AB-CC 3.1b: Development of Key Messages (Start-Up)

The development of key messages from the formative research began during the March 2010 workshop with IFPRI and *PROCOMIDA*. In addition to results from the formative research conducted by IFPRI and *PROCOMIDA*, results from qualitative interviews with local women on barriers to health care and childcare were presented; the interviews had been conducted by two cultural anthropologists who were hired as consultants. A final report of the research findings was submitted to *PROCOMIDA*.

The BCC director identified topics and key messages to include in the BCC strategy based on the formative research, before consolidating it with all available materials from the MSPAS and NGOs. The BCC director developed 85 key messages, which were then validated in the field by a team of 10–12 field technicians. The 85 messages were organized into four modules: exclusive breastfeeding, adequate nutrition for pregnant and lactating women, healthy eating, and care and adequate nutrition for children 6–24 months of age. Each message had a corresponding lesson (see sub-AB-CC 3.2a). The 85 messages were finalized in 2010.

Sub-AB-CC 3.2: Development of BCC Materials

Once the BCC messages were identified, field technicians had to teach the messages in a manner that was easy for beneficiaries to understand. Flip charts, radio programs, and publicity signs that depicted key messages were therefore developed for the monthly meetings as well as to reach beneficiaries at times outside of the BCC lessons.

Sub-AB-CC 3.2a: Development of Lessons (Start-Up and Post-Start-Up)

PROCOMIDA's educational specialist developed the BCC lessons for each key message. The lesson plan for each key message took 1 to 2 weeks to develop and required final approval by the BCC coordinator and the *PROCOMIDA* nutritionist. Each lesson took into account the educational philosophy of the field technicians and incorporated strategies for teaching indigenous populations, breaking down cultural barriers, and encouraging nonviolent communication. This work was ongoing from May 2010 to 2013.

Sub-AB-CC 3.2b: Development and Production of Flip Charts (Start-Up and Post-Start-Up)

Each BCC lesson came with a corresponding flip chart with graphics that could be used as a guide for *PROCOMIDA* field technicians. Flip charts were developed by the education specialist. First, the

nutritional and health components of the lesson were divided into the lesson objective, the key message, and prompts to promote dialogue and questions from the beneficiaries. On the front of each flip chart was a figure, image, or pictogram that explained the key message. The figure, image, or pictogram was validated with field technicians in the communities for three criteria: (1) accuracy of nutrition and health information, (2) ease of teaching, and (3) cultural acceptability. Flip charts for each module were approved by the BCC coordinator and image artist before being sent to press. Flip charts for the first two modules were printed in 2011, the third one in 2012, and the final one in 2013.

Sub-AB-CC 3.2c: Radio Spots (Start-Up and Post-Start-Up)

To advertise the *PROCOMIDA* program, several radio spots were developed beginning in 2011. Between January and June 2014, the radio spots included selected, key BCC messages. All radio messages were developed by *PROCOMIDA*.

Sub-AB-CC 3.2d: Poster Production (Start-Up and Post-Start-Up)

Posters emphasizing key BCC messages were developed to hang in health centers, offices, and other *PROCOMIDA* areas in 2014 and 2015. Each poster was developed by the graphic designer on staff.

Sub-AB-CC 3.2e: Publicity Sign Development and Production (Start-Up and Post-Start-Up)

In addition to developing posters, the *PROCOMIDA* graphic designer began developing publicity signs in 2010 and continued to produce them throughout the duration of the program. Publicity signs were displayed in *PROCOMIDA* offices and in other *PROCOMIDA* areas.

Sub-AB-CC 3.2f: BCC Reports (Post-Start-Up)

The education specialist and BCC manager were responsible for producing several reports that highlighted the BCC methodology and modules. In 2010, the education specialist began working on a document that was finalized and approved by the Guatemala MSPAS and SESAN in 2013, and published in both English and Spanish.

Sub-AB-CC 3.3: Establishment of Groups for Delivery of BCC Lessons

Once beneficiaries were enrolled in the program, field technicians were the primary program contacts for the beneficiaries. Field technicians trained beneficiaries, distributed food rations, taught recipes to LMs, and conducted home visits. BCC lessons were delivered to groups of beneficiaries from July 2010 until May 2015.

Sub-AB-CC 3.3a: Selection, Training, and Role of Leader Mothers (Post-Start-Up)

Beneficiaries in each BCC group selected a LM. On average, there was one LM per 25 beneficiaries and approximately 700 LMs in the entire program. LMs were expected to visit each beneficiary mother (BM) at least once during their enrollment in the program to reinforce BCC lessons. Beneficiaries with sick or malnourished children were visited monthly. Each LM made approximately two visits a month. LMs continued their role until they graduated from the program, at which point new LMs were selected.

LMs were also responsible for conducting monthly recipe demonstrations. Each month, the field technician and the health convergence center's nutrition educator provided LMs with a recipe that used the food rations. After receiving cooking instructions, LMs demonstrated the food preparation techniques to BMs. The health commissions purchased food for the recipe demonstrations using money collected from the voluntary contributions.

Sub-AB-CC 3.3b: Designing the Typical Workday (Start-Up)

PROCOMIDA field technicians were responsible for conducting a number of activities all in a single monthly visit. To manage the logistics of conducting all these activities, *PROCOMIDA* managers outlined

a typical day for *PROCOMIDA* field technicians that included four main activities: (1) delivering BCC lessons, (2) distributing food rations (see sub-AB-CC 2.7), (3) demonstrating the monthly recipe for LMs, and (4) making home visits.

The number of field technicians assigned to each health convergence center depended on the number of beneficiaries. Health convergence centers with fewer than 70 beneficiaries had a team of two field technicians—one to deliver the BCC lessons and one to coordinate food ration distribution with the community health commission. Health convergence centers with more than 70 beneficiaries had four field technicians—three to deliver the BCC lessons and one to coordinate food ration distribution with the community health commission.

By outlining field technicians' typical workday, daily activities were able to be systematically executed on food ration distribution days, which field technicians led approximately 15 days per month. Each year, the activities included in a typical workday were re-evaluated during post-start-up monitoring visits and meetings. Revisions of the typical workday were not included as an activity, since the time required was minimal and the process did not change markedly over the course of the program.

Sub-AB-CC 3.3c: Delivering BCC Lessons (Post-Start-Up)

On days when BCC lessons were delivered, and food rations were distributed, field technicians first met with members of the health commission to discuss any pressing issues or problems. Once this meeting concluded, the BMs were divided into three groups for BCC lessons: pregnant women, mothers with children under 6 months of age, and mothers with children 6–23 months of age.[20] Each BCC lesson lasted, on average, less than 1 hour. At the end of the BCC lesson, the field technician took attendance by using each beneficiary's thumbprint to stamp the roster sheet.

Sub-AB-CC 3.3d: Demonstration of Monthly Recipe to Leader Mothers (Post-Start-Up)

After the BCC lessons and food ration distribution, one of the field technicians was in charge of demonstrating the monthly recipe. Each demonstration was held at a LM's house and was intended to teach the LM the recipe; however, all beneficiaries were allowed to attend. Ingredients for the recipe demonstrations were purchased using the voluntary contributions.

Sub-AB-CC 3.3e: Making Home Visits to Beneficiaries (Post-Start-Up)

Following the recipe demonstrations, field technicians were required to make visits to households with children who had been diagnosed with malnutrition or households with beneficiaries who had missed 2 months of food ration distributions. Once household visits were completed, the technicians returned to their field office.

Sub-AB-CC 3.4: Recipe Development and *Crece Bien* (Start-Up and Post-Start-Up)

Developing and teaching healthy recipes to beneficiaries was a key component of *PROCOMIDA*, as a primary goal of the program was to provide guidance to mothers on appropriate child-feeding practices and sustain nutritional gains achieved during the program.

The *PROCOMIDA* nutritionist created recipes that incorporated local ingredients and the *PROCOMIDA* rations (i.e., CSB, rice, beans, and oil). These recipes were developed during a 6-month period at the beginning of the program and used information from the formative research. Once the recipes were finished, one recipe was demonstrated each month to the BCC technicians and the PSS educators during training (see sub-AB-CC 3.3a). A separate recipe book that only contained recipes using CSB (i.e., that

[20] When two field technicians were present, one conducted two BCC sessions, and the other conducted the third BCC session and then began coordinating the distribution. When there were four technicians, three of them could conduct BCC sessions while one coordinated the distribution. In rare cases, only one BCC session was held due to a small number of beneficiaries.

did not include recipes incorporating rice, beans and oil) was written for the research arm that did not receive a family ration. The recipe book was finalized in March 2015**.** Aprons were also provided to LMs, *PROCOMIDA* fieldworkers, and select beneficiaries to promote hygienic cooking practices.

Additionally, the *Crece Bien* project was implemented from October 2014 to May 2015. The goal of the strategy was to encourage healthy eating practices for pregnant women, lactating mothers, and children 6–24 months of age. A specially designed plate, which indicated how much food children 6–24 months of age should eat, was provided to mothers. The plates were explained and distributed to beneficiaries with children 6–24 months of age at food ration distributions. Beneficiaries also received posters of key nutrition messages. During LM visits, these messages were reinforced. In August 2014, the nutritionist trained the regional teams, and later the field technicians, on how to implement C*rece Bien*; the field technicians were then trained as well.

Sub-AB-CC 3.5: Model Gardens (Post-Start-Up)

The Household and Garden Improvement Plan (*Manejo de Vivienda y Lote*), a curriculum that had previously been developed by CARE and modified by MC, was implemented in 2012 to help improve the hygienic environment and use of homestead gardens in beneficiary households. *PROCOMIDA*'s goal was to implement this approach in 1,000 households. It was implemented under direction of the Institutional Strengthening Unit and Technical Support Unit managers. Graphic materials describing the household improvement plan covered three basic areas: (1) a healthy and happy family, (2) a clean house and kitchen, and (3) the presence of a home or patio garden. *PROCOMIDA* printed the materials and trained PSS educators to use them, emphasizing the presence of the home gardens. A model garden was built at each health convergence center and used to instruct LMs in garden care. Each LM was to replicate the garden care demonstration at beneficiaries' homes. *PROCOMIDA* initially provided seeds to beneficiaries; however, seeds were purchased with the community fund later in the program.

5.1.4 AB-CC 4: Institutional Strengthening of Health Services

The three sub-AB-CCs of AB-CC 4 related to the institutional strengthening of the health care system that served the beneficiary population. Some of the key implementation challenges included identifying the main constraints of proper health delivery among the PSSs and how to empower the PSSs to improve the quality of health delivery to the health convergence centers. To address these challenges, the activities in AB-CC 4 focused heavily on diagnostic tools and systems to enable the PSSs to find solutions to identified problems. **Table 5.4** summarizes the years in which each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.4 AB-CC 4: Institutional strengthening of health services activities by year, *PROCOMIDA*

Sub-AB-CC	2009	2010	2011	2012	2013	2014	2015
4.1 Improved communication							
4.1a Assess communication barriers between vulnerable populations and PSSs		SU	PSU	PSU	PSU	PSU	PSU
4.1b Conduct quarterly meetings at health convergence centers		SU	PSU	PSU	PSU	PSU	PSU
4.2 Trainings and provision of equipment							
4.2a Institutional assessment		SU		PSU			
4.2b General PSS assessment		SU		PSU	PSU	PSU	PSU
4.2c Standardization of weight and height		SU	PSU	PSU	PSU	PSU	PSU
4.2d Train EBSs in BCC lessons		PSU	PSU	PSU	PSU	PSU	PSU
4.2e Train FCs in BCC lessons		PSU	PSU	PSU	PSU	PSU	PSU

Sub-AB-CC	2009	2010	2011	2012	2013	2014	2015
4.2f Aid PSS educators and leader mothers		PSU	PSU	PSU	PSU	PSU	PSU
4.2g Investment plan management		PSU	PSU	PSU	PSU	PSU	PSU
4.2h PSS educators' monitoring of beneficiaries and LMs			PSU	PSU	PSU	PSU	PSU
4.3 Supervision and monitoring							
4.3a Monitoring achievements of health convergence centers' institutional strengthening plan		PSU	PSU	PSU	PSU	PSU	PSU
4.3b Monitoring of height and weight growth			PSU	PSU	PSU	PSU	PSU
4.3c Follow-up and support of malnourished children			PSU	PSU	PSU	PSU	PSU
4.3d Monitoring implementation of BCC lessons by beneficiaries		PSU	PSU	PSU	PSU	PSU	PSU
4.3e Adhering to cooperative agreements		PSU	PSU	PSU	PSU	PSU	PSU

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 4.1: Improved Communication

The goal of the first sub-AB-CC was to improve communication between the PSSs and the communities they served and improve the quality of care. To achieve this goal, *PROCOMIDA* developed a diagnostic tool and assisted the PSSs in conducting quarterly meetings to assess the health situation of the populations served by the health convergence centers.

Sub-AB-CC 4.1a: Assess Communication Barriers between Vulnerable Populations and PSSs (Start-Up and Post-Start-Up)

To improve communication among PSS workers and the communities they served, customer satisfaction surveys and guided visits to health facilities were conducted. The customer satisfaction surveys were conducted among recipients of PSS services, first in 2011 and then biannually in March and November for the remainder of the program. Guided visits to health centers and hospitals were coordinated by the monitoring and evaluation technicians for community leaders and pregnant women to provide an opportunity for community members to better understand and abate any concerns regarding the health services. Guided visits took place in December 2011 and June 2012.

Sub-AB-CC 4.1b: Conduct Quarterly Meetings at Health Convergence Centers (Post-Start-Up)

The MSPAS requires that the PSSs have quarterly evaluation meetings to discuss and evaluate the current health and nutritional situation of its communities. However, due to lack of resources, prior to program implementation these meetings rarely took place. *PROCOMIDA* provided the resources and promotion for the quarterly evaluation meetings from 2010 through the duration of the program. Meetings were coordinated by *PROCOMIDA* educators and the institutional strengthening field technicians and led by FI technicians and *PROCOMIDA* field technicians.

The EBS at each health convergence center coordinated the location and time of the quarterly evaluation meetings after resources were approved by *PROCOMIDA*. During each meeting, the health convergence center presented achievements from the previous quarter using a form developed by MSPAS, which detailed information such as the number of community members and the number of patients and pregnant women who received care. *PROCOMIDA* developed a poster for its technicians to present at the meetings, which summarized information on *PROCOMIDA's* impact (i.e., total number of beneficiaries and number of new enrollees). After the presentations, participants were tasked with identifying one to

three key challenges (e.g., low attendance and lack of specific medical supplies) to address during the next quarter. The monitoring and evaluation team monitored advancement toward these goals.

Sub-AB-CC 4.2: Trainings and Provision of Equipment

Key challenges for PSSs included the lack of equipment and human capacity to provide adequate health care in the program's catchment area. To address these challenges, *PROCOMIDA* diagnosed the key problems and then undertook a series of activities to train and support the PSS staff.

Sub-AB-CC 4.2a: Institutional Assessment (Start-up)

Each PSS was evaluated using the integrated system for the transformation assessment and results (ISTAR) tool, which assessed nine areas: (1) program design, (2) cooperation and external relations, (3) administrative financial management, (4) human resource management, (5) leadership and strategic direction, (6) staff participation and empowerment, (7) procurement of resources (grants), (8) organizational learning and growth, and (9) capacity strengthening. The Institutional Strengthening Unit manager took a 1-week training course in Guatemala City to earn ISTAR certification.

Each ISTAR assessment took 3 days to complete and was conducted at workshops in fall 2010 and 2012. All six PSSs were invited, and all members, with the exception of the director, were expected to attend for all 3 days. The goal of the ISTAR workshop was to develop an institutional strengthening plan that included (1) a statement of the problem, (2) an explanation of the strategy, and (3) responses to the following four questions: What should we do? How we should do it? When should we do it? Who is responsible? Attendees assessed their performance, identified needs, performed a cause and effect analysis, drafted a capacity building strategy, and developed a capacity building plan. At the conclusion of the ISTAR workshop, the priorities of each PSS were identified. *PROCOMIDA* organized the site, feeding arrangements, transportation, materials, and all other logistics and provided two staff to assist the institutional strengthening manager in conducting the workshop.

Sub-AB-CC 4.2b: General PSS Assessment (Start-Up)

In addition to the ISTAR assessment, the institutional strengthening manager performed an assessment of each PSS to evaluate three needs: (1) equipment, (2) reporting and record keeping, and (3) planning and budgeting (see sub-Ab-CC 4.2a).

To assess equipment needs, the institutional strengthening manager spoke with each PSS during monthly meetings. Based on these discussions, one height board was provided to each health convergence center at its first enrollment event. Scales (including two hanging scales for children) were provided in October 2010. Height boards were provided to each health clinic and to each health district at the request of MSPAS.

To assess reporting and record-keeping skills, PSS managers attended a workshop at the *PROCOMIDA* office to perform a diagnostic analysis in December 2010. It was determined at the beginning of the program that all PSSs needed training to improve planning and budgeting skills. In December 2010, PSS managers received training on the fiscal rules and regulations of Guatemala.

Sub-AB-CC 4.2c: Standardization of Weight and Height (Start-Up and Post-Start-Up)

PROCOMIDA trained each EBS in proper anthropometric measurement techniques using the scales and height boards. The nutritionist, BCC education specialist, and institutional strengthening manager developed the materials for the training sessions. The location of the session was coordinated by the nutritionist with the Alta Verapaz Department of Health and PSSs. The FIs, FCs, and nutritionists from the regional and district health centers were trained by *PROCOMIDA* field technicians at each health convergence center in 2011. The trainings were repeated in October 2013 and September 2014.

Sub-AB-CC 4.2d: Train EBSs in BCC Lessons (Post-Start-Up)

PSSs and EBSs were given BCC lessons by the BCC team during quarterly trainings organized by the institutional strengthening manager. At each day-long training, BCC lessons that had been implemented in the field during the previous quarter were presented. Trainings were held each quarter from November 2013 to April 2015, after which trainings were conducted on a monthly basis. Additional trainings were conducted during closing activities to reinforce BCC messages.

Sub-AB-CC 4.2e: Train FCs in BCC Lessons (Post-Start-Up)

After receiving training from the BCC team, two *PROCOMIDA* institutional strengthening technicians provided BCC training to PSS FCs in their communities. The trainings began in January 2010 and were conducted every 6 months through April 2015. Additional trainings were conducted during closing activities to reinforce messages.

Sub-AB-CC 4.2f: Aid PSS Educators and Leader Mothers (Post-Start-Up)

Field technicians provided monthly BCC training to PSS educators (see sub-AB-CC 7.1). From 2010 through the duration of the program, PSS educators and *PROCOMIDA* institutional strengthening technicians provided training to LMs. At the close of the program, additional trainings were provided to reinforce messages, and LMs were presented with diplomas in recognition of their work.

Sub-AB-CC 4.2g: Investment Plan Management (Post-Start-Up)

Monitoring and evaluation technicians were responsible for monitoring the use of voluntary contribution funds. An emergency fund, income-generating projects, and other projects of interest for the health convergence center and communities were also created by *PROCOMIDA* and health convergence centers in 2012. As part of the closing activities, the institutional strengthening team provided management and fundraising training to the health commission to help ensure the sustainability of the community fund.

Sub-AB-CC 4.2h: PSS Educators' Monitoring of Beneficiaries and LMs (Post-Start-Up)

After signing the memorandum of understanding with *PROCOMIDA*, each PSS received funds that were used in part to hire two nutrition educators (see sub-AB-CC 4.3e). The PSS educators were required to visit 10 communities each month and monitor whether beneficiaries were implementing the lessons learned during the BCC sessions. PSS educators also conducted follow-up visits with children who were diagnosed with malnutrition and high-risk pregnant women, helped with recipe demonstrations, and provided support to LMs. PSS educators began working in January 2011 and were monitored by the institutional strengthening technicians. The PSS educators reported back to the health convergence center but did not report directly to *PROCOMIDA*.

Sub-AB-CC 4.3: Supervision and Monitoring

The objective of the final sub-AB-CC was to monitor the quality of care provided by the health convergence centers and the progress of the PSSs in improving the provision of equipment, supplies, and support to staff and beneficiaries.

Sub-AB-CC 4.3a: Monitoring Achievements of Health Convergence Center's Institutional Strengthening Plan (Post-Start-Up)

The health convergence centers' institutional strengthening plans were developed and executed with support from the Monitoring and Evaluation Unit. From 2010 through the duration of the program, monitoring and evaluation technicians monitored the use of the voluntary contributions as part of their monthly supervisions. The institutional strengthening field technicians also monitored the plan monthly.

Sub-AB-CC 4.3b: Monitoring Height and Weight Growth (Post-Start-Up)

At four points during the program (i.e., November 2013, April 2014, November 2014, and April 2015), *PROCOMIDA* evaluated the height and weight of beneficiary children 0–23 months of age. (This was separate from the GM activities conducted by EBS staff.)

Sub-AB-CC 4.3c: Follow-Up and Support of Malnourished Children (Post-Start-Up)

The *PROCOMIDA* field nutritionist monitored the progress of malnourished children during home visits each month or, in some cases, every 15 days. Once a child was diagnosed with malnutrition, he or she was referred to the health convergence center. The field technicians would then conduct a follow-up on the next distribution day, and the nutritionist would visit the home and provide nutrition advice.

Sub-AB-CC 4.3d: Monitoring Implementation of BCC Lessons by Beneficiaries (Post-Start-Up)

Monitoring and evaluation technicians monitored the implementation of BCC lessons for beneficiaries every month, as part of their review of field technicians' typical daily activities, from June 2012 to April 2015.

Sub-AB-CC 4.3e: Adhering to Cooperative Agreements (Post-Start-Up)

The institutional strengthening manager, the MC financial officer, and the institutional strengthening assistant met with the managers of the PSS for approximately 3 hours each month, to evaluate progress on goals set by the PSS and to monitor spending on equipment. During each meeting, they discussed the technical activities of the PSSs and work of the PSS educators, and provided feedback on progress. Each month, the PSSs completed a request for funds and reported on the technical activities they conducted. After the institutional manager approved the technical activities, the MC financial manager discussed monthly expenses with the PSSs, and the PSS expense reports were evaluated by the MC financial manager.[21]

5.1.5 AB-CC 5: Monitoring and Evaluation

The fifth AB-CC included monitoring and evaluation of program activities by the program. Key challenges to implementing the monitoring and evaluation activities in Guatemala included determining which program activities should be evaluated and setting up a monitoring activity that would provide useful feedback for the program. To address these challenges, the activities reported in AB-CC 5 focus on planning for program activities and indicators, and monitoring the program at various intervals. **Table 5.5** summarizes the years in which each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.5 AB-CC 5: Monitoring and evaluation activities by year, *PROCOMIDA*

Sub-AB-CC	2009	2010	2011	2012	2013	2014	2015
5.1 Planning	SU	PSU	PSU	PSU	PSU	PSU	PSU
5.2 Monitoring							
5.2a Discussing results		PSU	PSU	PSU	PSU	PSU	PSU
5.2b Monitoring the typical work day of the *PROCOMIDA* technicians		PSU	PSU	PSU	PSU	PSU	PSU
5.2c Home visits by monitoring and evaluation technicians		PSU	PSU	PSU	PSU	PSU	PSU
5.2d Monitoring of LM visits to BMs' homes			PSU	PSU	PSU	PSU	PSU
5.2e Additional interviews with key informants on program activities			PSU	PSU	PSU	PSU	PSU

[21] Larger costs, such as this, were handled by the MC finance manager.

Sub-AB-CC	2009	2010	2011	2012	2013	2014	2015
5.2f Monitoring and follow-up of trainings			PSU	PSU	PSU	PSU	PSU
5.2g Evaluation of PSS data		PSU	PSU	PSU	PSU	PSU	PSU
5.2h Monitoring activities at unspecified times		PSU	PSU	PSU	PSU	PSU	PSU
5.2i Annual monitoring		PSU	PSU	PSU	PSU	PSU	PSU
5.3 Evaluation							
5.3a Baseline survey	SU	SU	SU				
5.3b Midline survey				SU	SU		
5.3c Endline survey						PSU	PSU

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 5.1: Planning (Start-Up and Post-Start-Up)

The monitoring and evaluation planning stage included the development of a DIP and selection of indicators. These activities took place during a 4-day workshop in 2010 with the Field Coordination Unit (**Figure 3.3**) and Systematic Information Management Unit (**Figure 3.7**). At the workshop, participants prioritized indicators and determined how activities would align with the DIP and how the PSS would collect information. Goals were also developed at the program, regional, and health convergence center levels. A 1-day midyear review was held each year to evaluate progress, goals, program activity costs, activities, and strategies, and to define new indicators. The results of indicators were entered into the *PROCOMIDA* database before July 30 of each year to track program progress.

Sub-AB-CC 5.2: Monitoring

PROCOMIDA needed to monitor a wide variety of program activities. To do so, the monitoring activity was divided into a pre-determined set of program activities.

Sub-AB-CC 5.2a: Discussing Results (Post-Start-Up)

Program results were presented monthly to staff of each of the three field offices,[22] quarterly to the program's field coordination management positions, and biannually to all program staff. The goal of these meetings was to monitor the use and consumption of food rations and supplements among beneficiaries and to present the progress of key indicators in the field.

Sub-AB-CC 5.2b: Monitoring the Typical Day of the *PROCOMIDA* Technicians (Post-Start-Up)

Monitoring the field technicians' typical workday allowed the program to identify and mitigate problems in the field as early as possible. This activity began in 2010 and was conducted each month by monitoring and evaluation technicians. Monitoring and evaluation technicians designed the data collection instrument (a questionnaire), validated it, and finalized it for field use. The Systematic Information Management Unit programmed the questionnaire into a PDA. Each month, the monitoring and evaluation technicians visited a sample of health convergence centers in the region and implemented the questionnaire. The collected information was then analyzed by the monitoring and evaluation technicians. Results of the questionnaire were discussed among program staff via sub-AB-CC 5.2a.

Sub-AB-CC 5.2c: Home Visits by Monitoring and Evaluation Technicians (Post-Start-Up)

Monitoring and evaluation technicians visited beneficiaries at their homes on non-distribution days while *PROCOMIDA* fieldworkers and LMs were absent. The main objective of the home visits was to evaluate beneficiaries' BCC knowledge, their implementation of key lessons, and how food rations and supplements were used.

[22] The program had three regional offices: eastern, central, and northern.

Monitoring and evaluation technicians defined the procedures and necessary equipment for home visits. Before conducting the home visits, monitoring and evaluation technicians coordinated the dates and planned the logistics with the regional office. Once a community was randomly selected, monitoring and evaluation technicians coordinated the home visits with the beneficiaries. On average, monitoring and evaluation technicians visited two to three homes per visit. Once a visit concluded, the Systematic Information Management Unit entered and analyzed the data. Beneficiary home visits occurred monthly from 2011 to 2015.

Sub-AB-CC 5.2d: Monitoring of LM Visits to Beneficiaries' Homes (Post-Start-Up)

Monitoring and evaluation technicians accompanied LMs during their visits to BMs to evaluate their interactions with BMs and their performance. Before conducting the home visits, monitoring and evaluation technicians coordinated the dates with the LMs. Each monitoring and evaluation technician then visited a randomly selected community each month and conducted, on average, two to three home visits with LMs. Once a visit concluded, the Systematic Information Management Unit entered and analyzed the data. This activity was conducted monthly by monitoring and evaluation technicians as part of their monthly monitoring of distribution sites, from 2011 to 2015.

Sub-AB-CC 5.2e: Additional Interviews with Key Informants on Program Activities (Post-Start-Up)

PROCOMIDA monitoring and evaluation technicians interviewed health care workers at the health convergence centers, members of the health commission, and MSPAS to obtain feedback on the perception of the program and identify how the program could improve its services.

Sub-AB-CC 5.2f: Monitoring and Follow-up of Training (Post-Start-Up)

To monitor knowledge on key BCC messages, the monitoring and evaluation technicians surveyed PSSs, EBSs, *PROCOMIDA* technicians, LMs, and BMs. This activity was conducted during monitoring and evaluation technician visits to communities for quarterly evaluation meetings (see AB-CC 3.1b), from February 2011 to June 2015.

Sub-AB-CC 5.2g: Evaluation of PSS Data (Post-Start-Up)

PROCOMIDA made an agreement with PSSs to obtain health records from beneficiaries' visits to health convergence centers. Monitoring and evaluation technicians analyzed the data and reported rates of supplement use and attendance at the health convergence centers to the PSSs.

Sub-AB-CC 5.2h: Monitoring Activities at Unspecified Times (Post-Start-Up)

Additional monitoring activities occurred throughout the *PROCOMIDA* program. During monitoring and evaluation quarterly evaluation meetings, monitoring and evaluation technicians and health centers discussed relevant results and insights. A semiannual evaluation of beneficiaries' program satisfaction was used to detect any issues that could be quickly resolved. A best practices study was also conducted to identify practices that were observed by the monitoring and evaluation technicians as working well in the field. Results from this study were shared with all *PROCOMIDA* staff.

Sub-AB-CC 5.2i: Annual Monitoring (Post-Start-Up)

Annual monitoring activities included a review of the DIP, measurement of key indicators, a review of the EBS at each health convergence center, an evaluation of MC projects that could be used by *PROCOMIDA*, monitoring of health convergence center personnel and health volunteers, and an annual beneficiary survey. This activity was conducted by monitoring and evaluation technicians as part of their monthly visits to distribution sites.

Sub-AB-CC 5.3: Evaluation (Start-Up)

Evaluation activities included a baseline survey (5.3a, conducted in 2010), a midline survey (5.3b, conducted in 2012) and an endline survey (5.3c, conducted in 2015). The baseline study was conducted in conjunction with IFPRI, and the midline and endline surveys were implemented by *PROCOMIDA*. For each of the evaluation activities, *PROCOMIDA* wrote the terms of reference and followed the standard bidding process to contract a survey company. Once proposals were submitted and evaluated, three candidates were selected for interviews, and contracts were awarded and signed by the winning bids. The selected survey company programmed the questionnaire into the PDA, made recommendations to improve survey design, and hired personnel who were experienced in survey interviewing and anthropometric assessment. Once enumerator training was completed, fieldwork was conducted for approximately 4 to 6 weeks for each survey.

For the 2010 baseline survey, *PROCOMIDA* and IFPRI jointly designed the sampling frame and developed a fieldwork plan. IFPRI then wrote the report. For the 2012 midline survey, *PROCOMIDA* hired a consulting firm to design the methodology and write the report. For the 2015 endline survey, *PROCOMIDA* hired a consulting firm to design the survey to be comparable to the baseline survey, to conduct the analysis, and to write the report.

5.1.6 AB-CC 6: Training and Supervision of Program Staff

The sixth AB-CC included five sub-AB-CCs on the training and supervision of program staff. A key challenge for the training and supervision of program staff was the timing of training, which was especially critical for the field technicians who delivered BCC lessons and food rations. To address these challenges, the activities reported in the sixth AB-CC were divided by the type of training, and the first training for each activity was conducted monthly so that all field technicians could correctly perform *PROCOMIDA* distribution day activities. **Table 5.6** summarizes the years in which each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.6 AB-CC 6: Training and supervision of program staff activities by year, *PROCOMIDA*

Sub-AB-CC	2009	2010	2011	2012	2013	2014	2015
6.1 BCC staff training		PSU	PSU	PSU	PSU	PSU	PSU
6.2 Monitoring and evaluation staff training		PSU	PSU	PSU	PSU	PSU	
6.3 Institutional strengthening staff training		PSU	PSU	PSU	PSU	PSU	PSU
6.4 Systematic information management staff training		PSU	PSU	PSU	PSU	PSU	PSU
6.5 Nonviolent communication training			PSU		PSU		

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 6.1: BCC Staff Training (Post-Start-Up)

Once a month, the Technical Support Unit staff conducted a 1-day regional (central, north, east) training for field technicians, institutional strengthening team members, and monitoring and evaluation technicians. At the first training, field technicians were trained on program rules and regulations. Subsequent training sessions covered PDA use, BCC lessons, nutrition, and new recipes, and provided opportunities to share best practices and lessons learned. Systematic information management staff also participated to provide feedback on fieldwork. Two to five days were required for BCC staff to prepare for each training, and a post-training review among the coordinator and the field technicians was held at the end of each workday.

Sub-AB-CC 6.2: Monitoring and Evaluation Staff Training (Post-Start-Up)

The *PROCOMIDA* nutritionist trained the monitoring and evaluation technicians in proper anthropometric measurement techniques. Trainings were conducted in October 2013 and September 2014.

Monitoring and evaluation technicians were also trained on the use of tablets and other field instruments. This training occurred once; however, additional trainings were scheduled when the monitoring and evaluation manager needed to provide feedback to the technicians.

Sub-AB-CC 6.3: Institutional Strengthening Staff Training (Post-Start-Up)

Institutional strengthening technicians participated in BCC trainings led by the Technical Support Unit staff (see sub-AB-CC 6.1) and were taught proper anthropometric measurement techniques by the *PROCOMIDA* nutritionist so that they could then train the PSS FCs. Additional trainings were conducted for the institutional strengthening technicians as needed, such as when the agricultural component was introduced.

Sub-AB-CC 6.4: Systematic Information Management Staff Training (Post-Start-Up)

The systematic information management technicians were trained in PDA use, data entry, and database design. An initial training was conducted at the time of hire, followed by additional trainings conducted every 3 months.

Sub-AB-CC 6.5: Nonviolent Communication Training (Post-Start-Up)

Additional trainings to improve communication between field technicians and beneficiaries were conducted by external consultants in Cobán. The goal of the trainings was to teach nonviolent communication techniques and how to break down cultural barriers. The week-long trainings were conducted in August 2011 and in February and August 2013.

5.1.7 AB-CC 7: Advocacy, Promotion, and Social Mobilization

The seventh AB-CC included the advocacy, promotion, and social mobilization activities of the program. It included four sub-AB-CCs, the first three of which were start-up activities. These activities helped the program communicate with and respond to questions about the program from local, regional, and national entities. **Table 5.7** summarizes the years in which each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.7 AB-CC 7: Advocacy, promotion, and social mobilization activities by year, *PROCOMIDA*

Sub-AB-CC	2009	2010	2011	2012	2013	2014	2015
7.1 Host country agreement	SU	SU	PSU	PSU	PSU	PSU	
7.2 Sensitization and local approval	SU	SU	PSU	PSU	PSU	PSU	
7.3 Permission to perform study	SU	SU	PSU	PSU	PSU	PSU	PSU
7.4 Meetings and workshops	SU	PSU	PSU	PSU	PSU	PSU	PSU

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 7.1: Host Country Agreement (Start-Up)

The HCA consisted of two formal agreements, one with MSPAS and another with SESAN. Developing the agreement with MSPAS, which was signed in November 2010, took 1 year and required monthly meetings with representatives from both *PROCOMIDA* and MSPAS. Coordinating the agreement with SESAN lasted 3 months, required few negotiations, and was signed in spring 2010.

Sub-AB-CC 7.2: Sensitization and Local Approval (Start-Up and Post-Start-Up)

It took 2 months to negotiate agreements with each PSS. Each PSS had to first draft an application, logic framework, implementation time frame, and budget before presenting the draft to MC for review. The financial manager and the institutional strengthening technicians analyzed the drafts submitted by the PSSs and made necessary modifications. Once the PSSs were informed that their proposals were accepted, a cooperation agreement was signed with each PSS as well as a letter of understanding with the Alta Verapaz Department of Health. These agreements were renewed every year, along with new budgets that were approved by both the PSSs and *PROCOMIDA*'s finance manager.

Sub-AB-CC 7.3: Permission to Perform Study (Start-Up and Post-Start-Up)

To perform the impact assessment and process evaluation of the program, *PROCOMIDA* worked with IFPRI to obtain ethical approval. This required ongoing coordination with IFPRI, USAID, MSPAS, and FANTA; it also required meetings with regional organizations. The process lasted 1 year and required continuous coordination among the aforementioned parties. Each quarter, IFPRI renewed the research approval with the ethical committee in Guatemala City.

Sub-AB-CC 7.4: Meetings and Workshops (Post-Start-Up)

PROCOMIDA maintained continuous communication with MSPAS, SESAN, USAID, IFPRI, and FANTA during the implementation of program activities to keep them abreast of ongoing work. This regular communication was primarily the responsibility of the program director and demanded a substantial amount of his time. *PROCOMIDA* also distributed the results of the formative research, the BCC strategy and materials, and other materials with stakeholders.

5.1.8 AB-CC 8: Management, Planning, and Administration

The eighth AB-CC included program management, planning, and administration activities, which were the backbone of the program; it provided the financial and administrative support for all other AB-CCs and had five sub-AB-CCs. To provide support for the multiple offices and large number of staff hired by *PROCOMIDA*, the program had support from key support staff in the Guatemala City and headquarters offices, and hired support staff at each of the regional offices. **Table 5.8** summarizes the years in which each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.8 AB-CC 8: Management, planning, and administration activities by year, *PROCOMIDA*

Sub-AB-CC	2009	2010	2011	2012	2013	2014	2015
8.1 Human resources	SU	PSU	PSU	PSU	PSU	PSU	PSU
8.2 Procurement	SU	PSU	PSU	PSU	PSU	PSU	PSU
8.3 Pre-implementation logistics	SU						
8.4 Offices and infrastructure	SU	PSU	PSU	PSU	PSU	PSU	PSU
8.5 Headquarters support	SU	PSU	PSU	PSU	PSU	PSU	PSU

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 8.1: Human Resources (Start-Up and Post-Start-Up)

The organization's structure was first outlined in the approved proposal but was continually modified to meet the demands of the program. All positions had to be approved by headquarters in Portland, Oregon. The COP was recruited, pro-bono, in May–August 2009, and then hired full-time in September 2009. He moved to Guatemala in October 2009. A personnel request form was prepared for each locally hired position. Announcements were placed in the Guatemala paper, *Prensa Libre*, and selection interviews were conducted by a panel in Guatemala City. The personnel recruited and identified during the first year were key personnel staff, such as the monitoring and evaluation coordinator, operations manager,

systematic information management unit manager, *PROCOMIDA* assistant, and nutritionist. In addition to the key staff, *PROCOMIDA* hired key logistics staff, field coordinators, the program manager, *PROCOMIDA* field technicians, and the deputy director of the program. After each individual was hired, he or she was required to have an orientation with MC and *PROCOMIDA*. Work permits were only necessary for the two international hires—program director and Technical Support Unit manager.

Sub-AB-CC 8.2: Procurement (Start-Up and Post-Start-Up)

PROCOMIDA purchased office supplies, computer and office equipment (for *PROCOMIDA* and some MC administrative staff), warehouse equipment, and field equipment (e.g., PDA). Every year *PROCOMIDA* made bids for more equipment as the staff and their needs continued to grow.

During the first year of the project, seven 2010 Toyota Hiluxes and one 2010 Toyota RAV4 were purchased. The terms of reference were written by the COP, and an invitation to bid was announced in *Prensa Libre*. The bids were received and opened with an analysis committee. The bid was awarded to Cofhal. The RAV4 was assigned to the COP, and the seven Toyota Hiluxes were assigned to operations (1), Technical Support Unit (1), BCC (1), program operations (1), and the regional field coordinators (3).

A bidding process was also used to purchase the 43 motorcycles assigned to field personnel. Along with the motorcycles, vests, helmets, and protective gear were purchased.

During Year 2, a second bid was conducted to purchase two more Toyota Hiluxes and one more Toyota RAV4. Every year *PROCOMIDA* made bids for more vehicles and equipment, as the staff needs continued to grow. In total, 21 vehicles were purchased over the course of the program.

Sub-AB-CC 8.3: Pre-Implementation Logistics (Start-Up)

The *PROCOMIDA* proposal was written by two Guatemala-based MC staff in 2009 and one representative from MC headquarters in Portland. Several visits were made by headquarters staff to Guatemala and potential field sites in Alta Verapaz. The proposal was awarded to MC on July 15, 2009.

Sub-AB-CC 8.4: Offices and Infrastructure (Start-Up and Post-Start-Up)

PROCOMIDA staff were housed in the central MC office in Cobán for the first 8 months of the program and then moved to the main Cobán warehouse in 2011. The main Cobán warehouse was further divided into two central warehouses and an office space for staff for the northern region. The northern region staff used office space in the central office in Cobán until they were moved into the second warehouse (built in May 2011). The normal bidding process was used to rent a warehouse in the Cobán area. The terms of reference were written by the program director, and an invitation to bid was announced in *Prensa Libre*. Cost, security, and infrastructure requirements were negotiated with the best company. The same process was used to secure the second central warehouse.

Regional offices were also chosen for the central and eastern regions. These properties were first identified in 2010, and then the lease and security services were negotiated. Over the program's life cycle, the office locations were moved several times as more suitable locations were found.

The program director and his assistant were based in the Guatemala City office. They rented an office to accommodate administration, operations, and *PROCOMIDA* staff living in Guatemala City. The costs of utilities were shared with other MC programs.

The in-transit warehouse was located in Zacapa. Two warehouses were identified to be rented temporarily while the central warehouses were being built. An extension of the rental period was necessary due to the large quantity of commodities received. The in-transit warehouse was used until the second central warehouse operated at its full capacity.

Sub-AB-CC 8.5: Headquarters Support (Start-Up and Post-Start-Up)

MC had three organizational levels within *PROCOMIDA*: (1) headquarters in Portland, Oregon; (2) the national headquarters office in Guatemala City; and (3) the *PROCOMIDA* project office in Cobán. There was regular communication between the three offices through monthly meetings, phone calls, and emails.

At headquarters, the regional officer for Latin America provided technical support and linked the country program with USAID and other donors. Headquarters also provided legal and technical support regarding policies and procedures, including the review of all technical documents. Headquarters staff visited *PROCOMIDA* project activities in Guatemala at least once annually.

At the Guatemala City headquarters office, the country representative, human resources, and operations unit provided program support. Key staff in Guatemala had a monthly meeting at the *PROCOMIDA* office, and *PROCOMIDA* managers met once a month with general MC staff. The program director visited the Cobán office monthly.

5.1.9 AB-CC 9: Systematic Information Management

The ninth AB-CC included activities for systematic information management. The activities in AB-CC 9 were divided into three main tracking systems, and the Systematic Information Management Unit implemented ongoing quality checks to ensure the success of each activity. **Table 5.9** summarizes the years in which each sub-AB-CC took place and if the activity was a start-up or post-start-up activity. Each of these three tracking systems took several years to develop completely, though once developed, less effort was required to maintain the systems.

Table 5.9 AB-CC 9: Systematic information management activities by year, *PROCOMIDA*

Sub-AB-CC	2009	2010	2011	2012	2013	2014	2015
9.1 Commodity tracking system		SU	SU	SU	SU	PSU	PSU
9.2 Beneficiary information management		SU	SU	SU	SU	PSU	PSU
9.3 Coverage			SU	SU	SU	PSU	PSU

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 9.1: Commodity Tracking System (Start-Up and Post-Start-Up)

The commodity tracking system monitored the location of commodities to be able to determine whether they were in the in-transit warehouse, were in the Cobán warehouse, or had been distributed to the health convergence centers. There were six main steps to designing the system: (1) developing and programming it; (2) choosing variables and input data; (3) establishing the control system; (4) choosing the design of reports; (5) automating the system, conducting final programming steps, validating the program, writing a manual, training workers, and launching the system; and (6) performing continuous quality checks.

Sub-AB-CC 9.2: Beneficiary Information Management (Start-Up and Post-Start-Up)

Managing and evaluating beneficiary information had two distinct stages. The first stage occurred before the initial 221 health convergence centers were enrolled, and the second stage occurred after the health convergence centers were enrolled. The system used to manage and track beneficiary information was designed by systematic information management and conducted with the PPSs.

During the first stage, the *PROCOMIDA* team designed and validated the enrollment sheet. The Systematic Information Management Unit produced a list of beneficiaries and created the beneficiary card. The list of beneficiaries, brought to Cobán from the field by the field manager, was entered into the beneficiary database and used to make individual beneficiary cards with each beneficiary's name and code. The beneficiary cards were cross-checked with the master list and then delivered to each field team.

During the second stage, after the 221 health convergence centers were enrolled, new enrollment sheets were filled out for new beneficiaries during distribution days. Field technicians gave the enrollment sheets to the regional coordinator, who reviewed the sheets before giving them to the data entry technician at each regional office. The data entry technician entered the new beneficiary data into the beneficiary database. New beneficiary ID cards were made at the regional level, and a new regional master list was printed. The new beneficiary cards were scanned and sent to the Systematic Information Management Unit at the main *PROCOMIDA* office, where they were reviewed and printed.

The final step of the activity was the revision and reporting of beneficiary information. Each month the Systematic Information Management Unit analyzed information on BCC attendance, the receipt of food and supplements, the number of enrolled beneficiaries, and the number of beneficiaries who left the program. Anthropometric measurements (height and weight) of beneficiaries were received from secondary sources, including MSPAS and PSSs, and added to the report before it was sent to *PROCOMIDA* managers for review.

Sub-AB-CC 9.3: Coverage (Start-Up and Post-Start-Up)

Estimating the number of enrolled program beneficiaries and making projections of future enrollment was necessary to determine whether *PROCOMIDA* would reach the target number of beneficiaries. To evaluate program coverage, it was first necessary to define work categories and the methods for capturing and entering the data. Next, a model for reporting and managing the transfer of the data was designed by the unit manager. The manager then automated the system, conducted final programming steps, validated

the program, wrote a training manual, trained workers, and launched the system. Finally, routine quality checks were performed. The activity was conducted once in 2011 and again in 2012.

5.2 Detailed Program Description: *Tubaramure*, Burundi

The following section presents a detailed description of the activities and time lines of the *Tubaramure* program in Burundi, organized by the AB-CCs and the sub-AB-CCs identified in Chapter 4.

5.2.1 AB-CC 1: Supply and Logistics of Food Commodity Distribution

The four sub-AB-CCs of AB-CC 1 included activities to order, store, and distribute food commodities for the program. The activities included importing the food commodities to Burundi and estimating the required, monthly quantity of food rations. **Table 5.10** summarizes the years when each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.10 AB-CC 1: Supply and logistics of food and supplement distribution activities by year, *Tubaramure*

Sub-AB-CC	2009	2010	2011	2012	2013	2014
1.1 Food commodity orders and imports						
1.1a Food commodity orders	SU	PSU	PSU	PSU	PSU	PSU
1.1b Food commodity imports	SU	PSU	PSU	PSU	PSU	PSU
1.2 Food commodity management and storage	SU	PSU	PSU	PSU	PSU	PSU
1.3 Coordination of food commodity transportation and distribution	SU	PSU	PSU	PSU	PSU	PSU
1.4 Monetization	SU	PSU	PSU	PSU	PSU	PSU

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 1.1: Food Commodity Orders and Imports

After food commodities arrived in the port in Dar es Salaam, Tanzania, *Tubaramure* worked closely with several companies to transport and track food commodities from Tanzania to Burundi.

Sub-AB-CC 1.1a: Food Commodity Orders (Start-Up and Post-Start-Up)

The CRS Food Distribution Unit oversaw the ordering, movement, storage, distribution, and handling of all food commodities. Orders were based on the quantity of food rations needed for the upcoming fiscal year. Three separate orders were required for the 2011 and 2012 fiscal years to stagger the delivery of the large volume of food commodities. One order was placed each of the other years.

Using current registration numbers and projections of future beneficiary need, the *Tubaramure* COP and commodities manager calculated the quantity of food rations needed for beneficiaries for the upcoming year. The commodities manager then used the estimations to prepare a food commodity order using the annual request report. The order was first reviewed and approved by the COP, then by the management quality coordinator (MQC), and finally by the country representative. The document was then submitted to the FFP officer in Bujumbura, Burundi.

Once the estimated time of arrival was confirmed, the contracted surveyor, along with the clearing and forwarding agent, began making preparations to survey and clear the commodities from customs and to transport the commodities to their next destination. The clearing and forwarding agent was responsible and accountable for any inland losses (i.e., commodities lost during transportation from the seaport in Dar es Salaam, Tanzania, *en route* to Burundi). The CRS commodities unit used FOODLOG—a commodities tracking system developed by *Tubaramure*'s commodities manager—to closely track the movement of commodities from Dar es Salaam to the primary warehouses, and to the individual distribution sites. The

tracking software further allowed CRS to produce up-to-date reports of the quantity of food commodities remaining in CRS warehouses.

Sub-AB-CC 1.1b: Food Commodity Imports (Start-Up and Post-Start-Up)

USAID supplied and shipped U.S. food commodities from the United States to Dar es Salaam, Tanzania. USAID hired LIFELINK to track the commodities and provide updates to USAID and CRS until the ship's arrival. Two weeks prior to the arrival of the commodities in Dar es Salaam, LIFELINK sent a document providing the freight contents and value. A copy of this document was given to the surveyor responsible for cross-checking port arrivals. Surveyor Polucon took inventory of the food commodities on the vessel.

Through the normal bidding process, CRS contracted SDV Transami in Burundi as the clearing and forwarding agent. SDV Transami cleared the food commodities through Tanzanian customs using a letter of duty and tax exemption from CRS and a letter of tax-exempt status from the Minister of Finance. SDV Transami dispatched the commodities from Dar es Salaam to Burundi according to instructions provided by CRS. The surveyor recorded the total amount of food commodities loaded onto the transport trucks before they left for the border checkpoint in Ngozi, Burundi. At the checkpoint, the food commodities cleared bond, the waybill was processed, and the food commodities were cleared by Burundian customs. Once the commodities entered Burundi, they were delivered to either the Gitega or Ruyigi warehouse, where a SDV Transami surveyor conducted another survey to verify the quantity delivered. Transporting the commodities from Dar es Salaam to Burundi took 3 to 5 days.

Sub-AB-CC 1.2: Food Commodity Management and Storage (Start-Up and Post-Start-Up)

Food commodities were off-loaded at the primary warehouses in Gitega (until it closed in March 2011) and Ruyigi[23] by day laborers hired by CRS. The warehouse team received waybills, dispatched food commodities to distribution sites, kept inventory of the remaining commodities, cleaned the facilities, and ensured the ventilation system was in working order. An internal auditor from the CRS office in Bujumbura and a small team of assistants also took inventory of warehouse food commodities each month. The warehouse manager signed each inventory report.

Sub-AB-CC 1.3: Coordination of Food Commodity Transportation and Distribution (Start-Up and Post-Start-Up)

Once the updated list of program beneficiaries was received and approved by the FH BCC supervisor (see sub-AB-CC 2.4b), a food ration request form was filled out for the next month's distribution. On the ration request form, FH entered the number of beneficiaries for each size of individual ration (i.e., pregnant women or mothers of children under 6 months, and children 6–23 months). Based on these numbers, FH estimated the quantities of CSB and oil needed for each distribution site. The CARITAS provincial supervisors then worked with site managers to record the total quantity of food commodities remaining at each stationary distribution site from the previous month's distribution. Using this information and the numbers estimated by FH, they then calculated the additional amount of food rations needed for the month. After the site manager signed and sent the ration request form to the CARITAS chief of project for verification, it was submitted to the CRS commodities unit and the COP for approval.

CARITAS provincial supervisors, in agreement with consortium group members, created a timetable of distributions at each site. A job order was then prepared by the CRS commodities unit and sent to the warehouse manager to dispatch the required quantity of food commodities. The warehouse manager filled out and signed the waybill, of which five copies were made. One copy was retained in the copybook, and another copy was kept at the warehouse in the stock ledger. The transporter took the remaining three

[23] Initially, only a smaller warehouse was available in Ruyigi. After a larger one become available in Ruyigi, it was used exclusively, and the Gitega warehouse closed (see sub-AB-CC 2.1).

copies to the distribution site, where the site manager signed them and verified the receipt of the commodities. Of the three signed waybill copies, one was kept on file at the distribution site, one was attached to the transportation invoice, and one was returned to the CRS commodities unit to verify the quantity delivered. The copy of the waybill kept at the warehouse was then sent to the CRS commodities unit to compare the amount of food commodities that arrived with the amount originally dispatched. Any losses incurred while in transit were charged to the transport company.

For each distribution site, CARITAS provincial supervisors prepared a distribution report to document the opening balance, quantity received, quantity distributed to beneficiaries, number of beneficiaries served in each category, quantity lost, and final balance of food commodities. The site manager and THP verified the number of beneficiaries served before signing the completed distribution report. The report was then sent to the CARITAS chief of project for approval and then to the CRS commodities unit for their records and the COP's signature.

Sub-AB-CC 1.4: Monetization (Start-Up and Post-Start-Up)

During the first 5 years of the program, 21,000 metric tons of wheat were monetized. Each year, CRS calculated how many metric tons of wheat were needed for the year. Once the amount was approved, a tender document was prepared by the food commodities and monetization manager, and a bidding process was opened to select who would win the contract to buy the wheat. After the selection process, the winner provided CRS with a bank guarantee that CRS-Burundi forwarded to CRS headquarters. Once the guarantee was received by CRS headquarters, a call forward was placed. When the commodities arrived in Dar es Salaam, Tanzania, the food commodities and monetization manager traveled to Tanzania to supervise the receipt of the commodities before being transported to Burundi. Once the commodities reached Burundi and were received by the buyer, a surveyor report was submitted to CRS-Burundi and forwarded to CRS headquarters.

5.2.2 AB-CC 2: Food Ration Distribution

AB-CC 2 had five sub-AB-CCs, all of which included start-up activities. **Table 5.11** summarizes the years when each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.11 AB-CC 2: Food ration and supplement distribution activities by year, *Tubaramure*

Sub-AB-CC	2009	2010	2011	2012	2013	2014
2.1 Community coordination	SU	PSU	PSU			
2.2 Repackaging and organization of food rations						
2.2a Selection of distribution sites	SU					
2.2b Management of distributions	SU	PSU	PSU	PSU	PSU	PSU
2.2c Repackaging and distribution of food rations		PSU	PSU	PSU	PSU	PSU
2.3 Transportation		SU	PSU	PSU	PSU	PSU
2.4 Beneficiary enrollment						
2.4a Beneficiary cards		SU			PSU	
2.4b Beneficiary enrollment lists		PSU	PSU	PSU	PSU	PSU
2.4c Monitoring eligibility of beneficiaries		PSU	PSU	PSU	PSU	PSU
2.5 Materials and supplies for food rations		SU	PSU		PSU	

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 2.1: Community Coordination (Start-Up and Post-Start-Up)

To begin coordinating food ration distributions to communities, *Tubaramure* conducted three separate evaluations in 2009 and 2010. The CRS monitoring and evaluation coordinator, in conjunction with four

CARITAS staff members (i.e., the project manager, the logistician, and the two provincial supervisors), evaluated all available warehouses in the Ruyigi and Cankuzo Provinces in March 2009. The team found that no large, secure warehouses existed in the province of Cankuzo and that no warehouses large enough to house the entirety of *Tubaramure's* food commodities were available in Ruyigi. Until a large warehouse became available in Ruyigi, food commodities were stored at a large warehouse in Gitega Province (a neighboring province to Ruyigi) and a smaller warehouse in Ruyigi before being transported directly to distribution sites. Necessary improvements were made to each warehouse to make them all suitable for food commodity storage. Once improvements were made, CRS signed contracts with the warehouse owners and appointed a local warehouse manager for each site. The Gitega warehouse was closed in March 2011 after a large warehouse in Ruyigi became available.

In 2010, the food rations team defined and established a community communication strategy. Flyers, letters, press releases, and other materials were developed to inform the population and community stakeholders of the eligibility requirements and intended use of food rations that would be distributed. The food rations team also trained the program's health promoters and development committee in community outreach.

Sub-AB-CC 2.2: Repackaging and Organization of Food Rations

The distribution system was designed to reach all beneficiaries, who would often need to travel long distances to reach distribution sites. The system also had to adapt to the lack of existing infrastructure to store and manage food rations near distribution locations.

Sub-AB-CC 2.2a: Selection of Distribution Sites (Start-Up)

Distribution sites were chosen in 2009 by a diagnostic team comprised of five CRS and four CARITAS employees. CRS personnel included the MQC, the chief of security, the commodities and monetization managers, and an administrative manager. The CARITAS staff included the program manager, the logistician, and the two provincial supervisors. The diagnostic team travelled to the beneficiary *collines*, analyzed maps, and met with local authorities to determine where stationary distribution sites would be located. Stationary distribution sites were chosen based on their proximity to the beneficiary population, availability of space to conduct the distribution, adequacy of shelter from the rain, and permission of use by the site owner. Most stationary distribution sites were affiliated with local churches. To limit the distance beneficiaries traveled to 7 km or less, the diagnostic team identified locations for satellite distribution sites. These sites, in areas without available facilities, were chosen based on their proximity to the beneficiary population and permission from the local authorities. Satellite sites did not have storage facilities. At the program's peak enrollment, there were 23 stationary sites and four satellite sites. As beneficiaries began graduating from the program and the amount food distributed declined, stationary sites were closed.

Sub-AB-CC 2.2b: Management of Distribution (Start-Up and Post-Start-Up)

Throughout the duration of the program, the building owner (or church priest) appointed a site manager to manage the stationary distribution site and, when necessary, the satellite distribution sites. The distribution site manager, who was paid by CARITAS-Burundi, was in charge of taking inventory of food rations and managing a team of day laborers who assisted with loading and moving food rations on food delivery days. The site manager was also in charge of a team of eight distribution site workers who assisted with weighing and distributing the food rations and recording beneficiary information during distributions. During peak enrollment, distributions lasted up to 2 weeks, and the program usually served the sites with the largest number of beneficiaries first.

Sub-AB-CC 2.2c: Repackaging and Distribution of Food Rations (Post-Start-Up)

Food rations were repackaged at the time of distribution. Each distribution site (stationary and satellite) was provided with a measuring kit: a small scale to weigh the CSB and graduated cylinders to measure the oil. Eight distribution site workers were responsible for verifying that mothers were food ration recipients on the beneficiary list, measuring the appropriate quantities of CSB and oil for each beneficiary, recording the food ration transaction in the inventory book, and stamping the beneficiary card to track the beneficiary's participation. Mothers were responsible for bringing their beneficiary card, CSB bucket, and oil bottle each time they visited a food distribution site. Multiple distribution days per month were required for stationary distribution sites with very large numbers of beneficiaries. Smaller satellite sites required only one distribution day per month. As beneficiaries began graduating from the program, fewer distribution days were needed.

Sub-AB-CC 2.3: Transportation (Start-Up and Post-Start-Up)

Between April and October 2010, the CARITAS program manager and logistician organized the transportation of food rations from the primary warehouses to the distribution sites. The CRS commodities team assumed all responsibility for the transportation of food rations in November 2010. Large trucks were rented from transportation companies to move the food rations to the stationary distribution sites. Transportation companies were chosen based on the price and capacity of their trucks through a standard bidding process. Given the fluctuation in the availability of trucks, new rental contracts were drawn up by CRS, signed jointly each month by CRS and the transportation company. The quantity of food rations to be distributed to the satellite sites was small enough to be transported by CRS vehicles.

Sub-AB-CC 2.4: Beneficiary Enrollment

The *Tubaramure* program maintained a list of active beneficiaries and food ration distribution lists according to the timing of enrollment and duration specific to each research arm, and to the standard program in the general enrollment *collines.* Each distribution site served multiple *collines* and therefore could serve *collines* assigned to different research arms or the general enrollment area. Beneficiary cards were used to easily identify current beneficiaries and indicate the number of distributions for which they were eligible.

Sub-AB-CC 2.4a: Beneficiary Cards (Start-Up and Post-Start-Up)

A committee of CRS and CARITAS members was formed to develop a prototype of the beneficiary ration card. The CRS members were the COP, DCOP, and the CTNAN. The CARITAS member was the project manager. After a first draft of the beneficiary card was created in early 2010, three of the consortium group members (i.e., CRS, CARITAS, and FH) met in February 2010 to review and make improvements to the prototype. The COP made the final approval of the beneficiary card. A standard bidding process was conducted to find a local printing business to produce the beneficiary ration cards. The activity was repeated in 2013 by the CRS monitoring and evaluation team to reflect changes to distribution sites; however, the beneficiary ration card remained mostly unchanged.

The beneficiary ration card contained the following information: (1) the objective of the program, (2) the beneficiary's name, (3) the beneficiary's unique identification number, (4) the beneficiary's distribution site, and (5) the beneficiary's research arm. Inside the ration card, there were boxes for each month the beneficiary intended to be enrolled in the program. This was used to track the beneficiary's participation and ensure that the correct (i.e., research arm-specific) food ration was distributed. Once food rations were received, the corresponding box for the month of the distribution was checked off.

Sub-AB-CC 2.4b: Beneficiary Enrollment Lists (Post-Start-Up)

The THPs, with help from FH supervisors, enrolled pregnant women and women with children 0–5 months of age. At the beginning of the program, pregnant women could enroll as soon as they found out they were pregnant (with proof of pregnancy from a health center). The eligibility criteria for pregnant women were later changed to include visible signs of pregnancy,[24] usually around the fourth month of pregnancy. After initial enrollments, the THPs collected the names of all eligible women living in each *colline* from LMs and local chiefs on a monthly basis. This information was used to construct a list of potential beneficiaries each month. The THPs communicated with the potential beneficiaries and organized their enrollment at the following registration event.

Registration was conducted every 2 months. For the enrollment events in the general enrollment *collines*, CRS set a maximum number of beneficiaries that could register each month. If the total number of potential beneficiaries exceeded the limit, then enrollees were prioritized according to month of pregnancy (i.e., women who were further along in their pregnancy were given priority). Enrollment in the research *collines* was not limited.

Sub-AB-CC 2.4c: Monitoring Eligibility of Beneficiaries (Post-Start-Up)

At the end of each month, the THPs prepared a report for the FH BCC supervisor listing the current number of enrolled women and the number of potential beneficiaries in each *colline*. The THPs updated the list twice a month after meeting with LMs in BCC care groups to document any deaths, dropouts, or relocations of enrolled or potential beneficiaries. The list of enrolled beneficiaries was maintained by the THPs, the FH BCC supervisors, and CRS's monitoring and evaluation team and served as a list of registered beneficiaries for the food ration distributions. After each registration event and food ration distribution, the list of enrolled beneficiaries was updated. This list was kept by the THP in a master registration book organized by *colline*, which was stored in the provincial office. The FH BCC supervisors shared the list with *Tubaramure* headquarters to provide the total number of new beneficiaries. In 2011, the CRS monitoring and evaluation team began entering beneficiary information into an electronic database.[25] The database was used to monitor the number of beneficiaries in each group (i.e., pregnant women and mothers of children under 6 months, and children 6–23 months), enrollment numbers, and graduates throughout the duration of the program. The electronic database was also used to generate an electronic food distribution list per distribution site, and was shared with the food and commodities team, CARITAS-Burundi, and site managers.

Sub-AB-CC 2.5: Materials and Supplies for Food Rations (Start-Up and Post-Start-Up)

Food rations were repackaged at the distribution sites, and supplies were purchased to correctly measure the food rations at the time of distribution.

In 2009, CRS support staff conducted a standard bidding process for the necessary materials for food ration distribution (i.e., buckets, bottles, and measuring kits). Advertisements soliciting proposals were placed in one of Burundi's local newspapers and in public spaces. The bidding process allowed proposals to be submitted over a 2-week period. A Kenyan company won the bid to supply buckets and bottles, based on the quality and price of the products. The winning bids for measuring kits (i.e., graduated cylinders and scales) were awarded to local businesses in Bujumbura.

Tubaramure ordered 52,000 buckets and 52,000 bottles. Due to limited warehouse space, the order was split into three shipments. The first, second, and third shipments contained 25,000, 15,000, and 12,000 each of the buckets and bottles, respectively. Buckets and bottles were initially held at the main

[24] The reason was that urine sharing to produce a positive pregnancy test had become common.
[25] The structure of the database did not require start-up costs.

warehouse in Gitega Province. When the large warehouse became available in Ruyigi, all materials were moved from Gitega to Ruyigi. Buckets and bottles were transported to each distribution site as needed. All measuring kits were acquired at the start of the program and sent to each distribution site. Measuring kits for satellite distribution sites were stored at the closest stationary distribution site (see sub-AB-CC 2.2). Additional buckets, bottles, and measuring kits were ordered as needed throughout the duration of the program, to replace broken or lost materials.

5.2.3 AB-CC 3: BCC Development and Execution

The six sub-AB-CCs of AB-CC 3 included activities for the development and implementation of the BCC strategy. The program conducted formative research to determine the key determinants of undernutrition in the program area and identify the barriers families faced to achieving better health and nutrition. Then, over several years, the program developed the lessons and modules for the BCC strategy based on these findings. In addition to the BCC messages, the program included recipe and agriculture trainings. BCC messages were delivered to beneficiaries through a cascade training system that involved THPs training LMs, who later delivered lessons to BMs. **Table 5.12** indicates the years when each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.12 AB-CC 3: BCC development and execution activities by year, *Tubaramure*

Sub-AB-CC	2009	2010	2011	2012	2013	2014
3.1 Formative research	SU					
3.2 Development of BCC materials						
3.2a Development of BCC modules, lesson plans, and the specific age card	SU	SU	SU	SU	PSU	PSU
3.2b Development and production of radio dramas		SU	PSU	PSU	PSU	PSU
3.2c Development and production of poster materials				PSU	PSU	PSU
3.3 Establishment of groups for the delivery of BCC lessons						
3.3a Training of leader mothers in leader mother care groups		PSU	PSU	PSU	PSU	PSU
3.3b Registration and formation of beneficiary groups and selection of leader mothers		SU	PSU	PSU		
3.3c Training of beneficiaries in care groups				PSU	PSU	PSU
3.3d Supervision of beneficiaries by *Tubaramure* health promoters		PSU	PSU	PSU	PSU	PSU
3.3e Home visits conducted by *Tubaramure* leader mothers			PSU	PSU	PSU	PSU
3.4 Recipe development	SU	SU	SU	PSU	PSU	PSU
3.5 Agricultural development						
3.5a Development of agricultural materials		SU				
3.5b Vegetables seed, fruit tree, and chicken distribution			PSU	PSU	PSU	PSU
3.6 Savings and internal lending communities			PSU	PSU	PSU	PSU

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 3.1: Formative Research (Start-Up)

Formative research was conducted for the *Tubaramure* program in August 2009 and was composed of two parts: a LDM study and four barrier-analysis studies. The objective of the LDM study, conducted by CRS, FH, IMC, and CARITAS, was to identify the determinants of child malnutrition at the local level by comparing the health and hygiene practices of malnourished and healthy children in Cankuzo and Ruyigi.

Data collection was conducted by four teams in 2 days and was a controlled-case study in which 48 malnourished children were compared with 46 healthy children. A final report detailing the study results was written by FH headquarters in Washington, DC. The study identified four critical health behaviors in need of improvement: (1) immediate breastfeeding during the first hour after delivery, (2) exclusive breastfeeding to 6 months of age, (3) encouragement for a non-hungry child to eat, and (4) appropriate feeding frequencies for children 9–24 months. These were prioritized for inclusion in the BCC lessons.

Four barrier-analysis studies were conducted by FH to understand why critical health behaviors identified in the LDM study were not being practiced by families. A 3-week workshop was conducted in December 2009 and January 2010 to train data collection teams. Workshop participants included 36 THPs, three members from the CRS management, five FH BCC supervisors, four members from the IMC management, two members of the CARITAS management, and four Ministry of Health (MOH) staff members. Approximately 90 women from 16 *collines* and nurses within health centers participated in each barrier-analysis study. Data collection lasted 1 week for each study. FH-United States and FH-Burundi developed a framework to illustrate the main barriers to practicing the four critical health behaviors. The framework was shared with UNICEF and CRS and used to choose health activity interventions for the *Tubaramure* program (see sub-AB-CC 3.2).

Sub-AB-CC 3.2: Development of BCC Materials

A key component of AB-CC 3 was to develop and disseminate BCC messages to beneficiaries and their families through lessons and local media. These activities were included in sub-AB-CC 3.2.

Sub-AB-CC 3.2a: Development of BCC Modules, Lesson Plans, and the Specific-Age Card (Start-Up and Post-Start-Up)

In 2009, FH-United States and the FH national technical advisor (NTA) incorporated key action messages into lessons and grouped them into five BCC modules based on the formative research results. The lessons were drafted in English by FH-United States and sent to IFPRI and CRS headquarters for review. The first module was completed in 2010. Modules 2 through 4 were completed in 2011, and the final and fifth module was completed in the first half of 2012. The lessons of each BCC module were developed to address a specific health topic. Finalized lessons were translated into French and sent to the FH-Burundi NTA, who further translated them into Kirundi.

Each module was designed to have one page of illustrations per page of text to improve comprehension. A standard bidding process to find an illustrator was initiated by the *Tubaramure* technical group (*groupe technique de Tubaramure)* (GTT), which was a team in charge of the program's technical aspects and included the COP, DCOP, CTNAN, IMC's and FH's NTAs, the monitoring and evaluation coordinator, and the CARITAS chief of project. Sample illustrations were paired with text for review during a GTT workshop. Focus groups, led by members of the GTT in beneficiary communities, were used to test the acceptability of images for each lesson. Three focus groups of 10 women, including pregnant women and women with children, were conducted for each lesson. Illustrations were refined according to feedback from the focus groups, and modules were formatted by a printing technician and reviewed by the GTT and four MOH technicians before being sent to FH-United States for final edits and approval.

While the first BCC modules were being developed, a specific-age card was created by FH as a teaching tool that provided key nutrition and health messages relevant for each age group. The illustrations on the card (no text was used) coincided with the BCC lessons according to the following age groups: 1–7 months gestation, 8–9 months gestation to 5 months of age, 6–8 months of age, 9–11 months of age, and 12–24 months of age. Because beneficiaries in the program did not receive BCC messages specifically targeted to the current age of their beneficiary child, the card was used by THPs to supplement BCC lessons with age-appropriate information for the mothers.

Once the BCC illustrations were completed and the BCC modules and specific-age cards were developed, a standard bidding process was conducted to receive and compare estimates to produce copies of laminated materials that could be used in the field. After the contract for the winning bid was signed, the modules and specific-age cards were printed, laminated, and delivered to FH-Burundi. Distribution of the BCC modules and specific-age cards are discussed in section AB-CC 3.3b.

Sub-AB-CC 3.2b: Development and Production of Radio Dramas (Start-Up and Post-Start-Up)

The barrier-analysis studies found that radio dramas were an effective tool to deliver health messages to the beneficiary population. In November 2010, a small survey was conducted by FH-Burundi to investigate (1) which radio stations to use, (2) the appropriate broadcasting time for the intended audience, and (3) the preferred program format (i.e., news, drama, or music) for the intended audience. Two national radio stations were identified as popular among listeners in Cankuzo and Ruyigi. The survey also found that the population preferred a radio drama in a time slot from 18:00 to 20:00 (i.e., 6 to 8 pm).

FH contracted the two radio stations. To develop each radio drama, the FH NTA provided a radio program writer with the health messages to incorporate into the episode. Each episode was then sent back to FH-Burundi for editing and approval. Once the episodes were finalized, the FH NTA hired studio actors and produced the recordings. Each program segment lasted 15 minutes and was broadcast by the national radio stations on Thursdays and Fridays. Episodes began playing in December 2010. Each episode aired twice over a 2-week period on each station. A new radio drama was produced every 2 weeks and continued to air until the end of the *Tubaramure* program.

Sub-AB-CC 3.2c: Development and Production of Poster Materials (Post-Start-Up)

In 2012, FH developed a poster with key nutrition and hygiene messages. The content of the posters and related graphics were taken from what was developed for the BCC modules. The posters were distributed to program beneficiaries to serve as reminders of proper nutrition and hygiene practices. Like for the other BCC materials, a standard bidding process was conducted to choose a winning bid for poster production and lamination. The posters were distributed to the beneficiaries through the THPs.

Sub-AB-CC 3.3: Establishment of Groups for the Delivery of BCC Lessons

The *Tubaramure* program adapted the care group method to disseminate BCC lessons. The care group approach consisted of a cascade system whereby THPs taught and trained LMs on BCC lessons in LM care group meetings twice a month. Each LM would then teach 10 to 12 BMs the same lesson most recently taught to her by the THP. *Tubaramure*'s BCC approach also included home visits and supervision activities by the THPs.

Sub-AB-CC 3.3a: Training of Leader Mothers in Leader Mother Care Groups (Post-Start-Up)

Beginning in 2010, THPs organized local LMs into LM care groups to teach the health, nutrition, and agriculture topics. Each group had approximately 10 to 12 LMs. The THPs met with each of their LM care groups every 2 weeks to teach a health, nutrition, or agriculture lesson. The trainings were held at local establishments (e.g., churches, schools, or local fields). THPs used the BCC modules, specific-age cards, the nutrition recipe manual, and a seasonal calendar (see sub-AB-CC 3.4a) to train the LMs, who in turn used the materials to teach the BMs. BMs did not receive a copy of the BCC modules or specific-age cards.

THPs used a recipe manual and a seasonal calendar (see sub-AB-CC 3.4a) to teach nutrition lessons and conduct recipe demonstrations during LM care group meetings using CSB, vegetable oil, and local foods. Recipes were seasonal, and beneficiaries were sometimes asked to contribute specific ingredients. Recipe demonstrations and the accompanying nutrition lessons were taught during LM care groups, and it was up

to the THP to determine the frequency with which they were taught. Recipe demonstrations were often supervised by the CTPANs to ensure that they were properly conducted and that there was good comprehension among LMs.

During the third year of the program, LMs began to receive training on the use of MUAC bands to identify acute malnutrition in children of BMs (including non-beneficiary children of BMs) during BM care group meetings (see sub-AB-CC 3.3d) and household visits (see sub-AB-CC 3.3g).

Sub-AB-CC 3.3b: Registration and Formation of Beneficiary Groups and Selection of Leader Mothers (Start-Up and Post-Start-Up)

Following their enrollment in *Tubarmure* (which began in March 2010), beneficiaries were organized into BM care groups according to geographic proximity. Forming BM care groups based on the age of women's children, while more effective for providing age-specific BCC lessons, proved too difficult given the distances among households. Each BM care group began with five to six women but was expected to grow to 10 to 12 members as program enrollment increased. When necessary, new BM care groups were formed to accommodate new BMs. Each BM care group collectively elected a LM, who acted as a volunteer community health educator to represent, serve, and promote the health of BMs (and their children) in her BM care group. When the child of a LM reached 24 months of age, the LM no longer received food rations from the program, but had the choice to continue serving as the care group's LM. If the LM chose to leave the care group, a new LM was elected. By the end of the *Tubaramure* program, there were approximately 4,900 LMs.

Sub-AB-CC 3.3c: Training of Beneficiaries in Care Groups (Post-Start-Up)

The first BM care groups met in May 2010. LMs were expected to meet with their BM care group every 2 weeks or twice per month. At each meeting, LMs taught the most recent lesson from the BCC modules or conducted a recipe demonstration (along with providing nutrition information related to the recipe) using the BCC modules, recipe manual, or seasonal calendar of foods. Recipes were seasonal, and BMs were sometimes asked to contribute specific ingredients. Lessons from the BCC modules were not provided during care group meetings when recipe demonstrations and the accompanying nutrition lesson were conducted.

If BMs attended the BM care group meetings accompanied by children (either the target beneficiary child or other children), LMs also used MUAC bands provided by the *Tubaramure* program to identify children with acute malnutrition.

Sub-AB-CC 3.3d: Supervision of Beneficiaries by *Tubaramure* Health Promoters (Post-Start-Up)

Once BM and LM care groups were formed, the THPs made home visits to LMs to check on each mother and child, ensure that the LMs were implementing BCC lessons, and collect information for program monitoring purposes. THPs also attended BM care groups to provide feedback on teaching methods to the LMs. THPs also made home visits to three randomly selected BMs per *colline*, to assess hygiene practices, use of food rations, and application of key BCC messages.

Sub-AB-CC 3.3e: Home Visits Conducted by *Tubaramure* Leader Mothers (Post-Start-Up)

LMs made home visits to check on each BM and her child, ensure that the BMs were implementing BCC lessons, and collect information for program monitoring purposes. During these visits, as during their BM care group meetings, LMs also used the MUAC band to check beneficiary and non-beneficiary children in the household for acute malnutrition. If a child was acutely malnourished, the LM referred the child to the local health center using reference cards designed by FH.

Sub-AB-CC 3.4: Recipe Development (Start-Up)

The CTNAN at CRS developed a *Tubaramure* food and nutrition manual in 2009 as a teaching tool for THPs and the CTPANs. The manual was written in French using documents from the PM2A program, FFP, UNICEF, Action Against Hunger, and the World Health Organization. It contained information on the Essential Nutrition Actions for pregnant and lactating women and children under 24 months of age, local foods, and seasonal recipes. Seasonal recipes were developed by the CTNAN after consulting with the provincial agriculture and breeding directors on the availability of local foods. The food and nutrition manual was edited by *Tubaramure*'s COP and DCOP, and validated by technicians from the Food and Agricultural Organization, IMC, UNICEF, FH, World Food Programme, Concern, World Relief, and MOH in 2011. The food and nutrition manual was then summarized into a shorter Kirundi guide, complete with illustrations. Each LM was trained on how to use the Kirundi guide when she conducted BM care groups. The CTNAN also developed a seasonal calendar to highlight when local nutritious foods were available. This calendar was intended to help beneficiaries know that they could access healthy foods throughout the year. It was edited by the COP, and consortium group members provided feedback.

To replicate the food and nutrition manual, the summarized version for LMs, and the seasonal calendar, standard bidding processes were conducted to get the best estimates. After the winning bid was selected, the nutrition materials were printed and laminated, if necessary, before being distributed to CTPANs, THPs, and LMs. Overall, the process of developing the manual, validating it with other NGOs, and translating it into Kirundi took 1.5 years.

Sub-AB-CC 3.5: Agricultural Development

The *Tubaramure* program incorporated a small agriculture component into the program that was not originally part of the PM2A proposal. The agriculture activities were intended to encourage beneficiaries to develop home gardens and increase their access to nutrient-rich foods. To achieve this goal, the program first developed agricultural teaching materials, distributed seeds and poultry, and set up a system to disseminate information through the BCC care groups.

Sub-AB-CC 3.5a: Development of Agricultural Materials (Start-Up)

A consultant from the Ministry of Agriculture was hired in October 2010 to write two short agriculture training manuals for the THPs and CTPANs. One manual discussed poultry farming, and the other provided best practices for planting vegetables and fruit trees.

Sub-AB-CC 3.5b: Vegetable Seed, Fruit Tree, and Chicken Distribution (Post-Start-Up)

The CRS DCOP organized the purchase of 1,000 sachets each of red and white onion seeds, and 2,000 sachets each of amaranth and leek seeds during the 2011 fiscal year. The DCOP also purchased 1,400 passion fruit vines, 1,800 papaya saplings, and 2,000 chickens (including both hens and roosters). Due to budgetary constraints, agriculture inputs were only distributed to general enrollment *collines* (not *collines* in the treatment arms), and chickens were only distributed to LMs.

During the 2012 fiscal year, the CRS DCOP purchased 3,000 sachets each of cabbage, amaranth, and eggplant seeds; 2,000 sachets of red onion seeds; 600 saplings each of mango and papaya trees; 2,400 avocado saplings; 2,400 pineapple plants; 1,000 roosters; 1,000 hens; and 750 kg of chicken feed. All agricultural inputs were distributed evenly among the research *collines* and were given directly to LMs, *colline* chiefs, and the provincial agriculture and breeding directors.

Vegetable seeds were purchased in Bujumbura, fruit tree saplings were purchased from a nursery in Cankuzo, and chickens were purchased in Gitega. LMs were instructed to retrieve their sachets of seeds, fruit tree saplings, and chickens from their food distribution site over a 3-day period. Upon receiving the seeds, plants, and chickens, LMs received training on agriculture and poultry husbandry techniques from their respective THPs. The trainings were conducted during LM care group meetings (see sub-AB-CC

3.3b). LMs then shared the agricultural lessons with BMs in their care groups. LMs were encouraged to plant home gardens and share the seeds from their harvest with BMs in their care groups.

Sub-AB-CC 3.6: Savings and Internal Lending Communities (Post-Start-Up)

Though not included in the initial *Tubaramure* proposal, CRS used its pre-existing SILC curriculum for the program beginning in March 2011. A SILC officer was hired to manage the microcredit activities across both provinces.

The SILC officer trained the THPs on the SILC methodology and how to establish microcredit groups at the *colline* level. The THPs then began introducing the microcredit methodology to beneficiaries and their family members. Non-*Tubaramure* beneficiaries who learned of the microcredit activities by word of mouth were also invited to participate. Once a SILC group was established and rules were explained, the group was given full autonomy. THPs continued to provide assistance as needed.

SILC groups had 10 to 25 members and met once or twice a month. Group meetings usually began by reciting the rules, group objectives, criteria for membership, rights, responsibilities and appropriate conduct of members, amount of savings, penalties for breaking the rules, and procedures for leaving the group. At each meeting, members provided their contributions (a fixed amount set by the group when it formed), and the savings were kept in a metal safe box with two padlocks and two keys. To prevent theft, each key was sent home with a different group member at the end of each meeting. A designated group treasurer kept a record of the total number of meetings, the total amount of money in the safe box, and all outstanding loans.

Every fourth SILC meeting was dedicated to repaying loans and disbursing new loans. When a member wished to obtain a loan, she had to receive verbal permission from all group members and agree to pay a small, pre-set amount of interest on the borrowed sum. Loans had to be repaid in full within four meetings.

5.2.4 AB-CC 4: Institutional Strengthening of Health Services

The four sub-AB-CCs of AB-CC 4 focused heavily on improving the communication and training of health care professionals. The activities also included providing a cohesive training system for the various health care partners and medical professionals and establishing a system to monitor the quality of health services in the program catchment area. **Table 5.13** summarizes the years when each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.13 AB-CC 4: Institutional strengthening component activities by year, *Tubaramure*

Sub-AB-CC	2009	2010	2011	2012	2013	2014
4.1 Improved communication						
4.1a Strengthen communication between communities and health centers		SU	PSU	PSU	PSU	PSU
4.1b Provincial-level support for IMC activities	SU	PSU	PSU	PSU	PSU	PSU
4.2 Trainings and provision of equipment						
4.2a IMC support for provincial and district health authorities		SU			PSU	
4.2b IMC provision of materials and equipment	SU	PSU	PSU	PSU	PSU	PSU
4.2c IMC support for provincial health technicians, community health workers, and *Tubaramure* health promotors	SU	PSU	PSU		PSU	PSU
4.2d IMC support for nurses and nurse assistants	SU	PSU	PSU	PSU	PSU	PSU
4.3 Supervision and monitoring						
4.3a IMC monthly supervisions	SU	PSU	PSU	PSU	PSU	PSU
4.3b Joint supervisions with the Ministry of Health		SU	PSU	PSU	PSU	PSU
4.4 Finance and administration support		PSU	PSU	PSU	PSU	PSU

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 4.1: Improved Communication

Activities to improve communication were conducted in two parts. First, a series of quarterly meetings was held to improve communication between communities and health centers. Second, support was provided at the provincial level to improve the health care systems for the beneficiary population.

Sub-AB-CC 4.1a: Strengthen Communication between Communities and Health Centers (Start-Up and Post-Start-Up)

IMC held quarterly meetings with each health center's managing committee to improve communication between communities and health centers. The meetings also served to identify new potential committee members, disseminate information to the community, establish a work plan, coordinate supervision strategies and overcome any issues encountered during program implementation. Under the leadership of the provincial health authorities (PHAs), the meetings ensured ownership of the activities by the local stakeholders and therefore the sustainability of IMC activities.

IMC also participated in meetings with CHWs and TPSs, who served as the health contacts for the local population. Meetings were held at each of the seven communes in Ruyigi and the five communes in Cankuzo. During these meetings, the CHWs provided their monthly reports, planned the following month's activities, and discussed any issues encountered. Though these meetings occurred monthly, IMC attended only once every 3 months.

Sub-AB-CC 4.1b: Provincial-Level Support for IMC Activities (Start-Up and Post-Start-Up)

At the beginning of the *Tubaramure* program, project staff sought the written support of the PHAs to establish a partnership between local MOH representatives and the *Tubaramure* program. IMC held a daylong workshop with the PHAs and district health authorities (DHAs) in each province to solicit feedback on IMC's proposed activities and to agree on next steps. The PHAs and DHAs were the main partners for implementing the institutional strengthening activities with IMC. The workshop in Cankuzo included the provincial head of health and district heads of health for Cankuzo and Murore. The provincial head of health and district heads of health for Butezi, Kinyinya, and Ruyigi attended the workshop in Ruyigi. Health center committees, commune administrators, and TPSs were also present at the workshops. At each workshop, an agreement was drafted outlining the roles and responsibilities of the PHAs and the DHAs, who would serve as MOH representatives at the provincial level. The agreements were submitted to the PHAs for review before being approved as final. The final agreements were sent to IMC headquarters for approval. The agreements were the basis of the institutional strengthening work plan over the duration of the program (see sub-AB-CCs 4.2 and 4.3).

In addition, project staff held 1-day quality coordination meetings every 3 months to discuss *Tubaramure* program activities and progress, and to identify strategies to overcome any challenges. The provincial governers, PHAs, DHAs, commune administrators, health and nutrition NGOs, head nurses of health centers, and a representative from each of the *Tubaramure* consortium organizations attended the meeting. Meeting agendas were coordinated by IMC and local health authorities.

Sub-AB-CC 4.2: Trainings and Provision of Equipment (Post-Start-Up)

A key goal of the *Tubaramure* program was ensuring adequate training of health facility staff. To coordinate the training of local staff, IMC hired one physician provincial technical advisor (PTA) and three nurse PTAs in each province. Each physician PTA was responsible for training local MOH staff on IMCI, ANC, and PNC. One nurse PTA was responsible for trainings on GM and supplementary feeding services for the community management of acute malnutrition. Another nurse PTA was responsible for trainings on outpatient therapy services and stabilization services—also as part of the community management of acute malnutrition. The third nurse PTA was responsible for training CHWs and TPSs on IMCI and the detection and referral of pregnant women with danger signs of malnutrition.

Sub-AB-CC 4.2a: IMC Support for Provincial and District Health Authorities (Start-Up and Post-Start-Up)

IMC also provided supervisory training for the PHAs and DHAs. The training taught participants how to monitor the quality of health services and how to ensure that health services were implemented in accordance with IMC trainings. The supervisory training further taught health authorities to prepare monthly narratives and statistical reports on the health services provided. PHA and DHA supervisors were responsible for monitoring and providing constructive feedback to health personnel to continuously improve their services during and after the program.

Two provincial health supervisors and five district health supervisors from Ruyigi and Cankuzo also received trainings from the IMC-hired PTAs on CMAM, IMCI, ANC, PNC, and GM. This enabled the MOH to conduct adequate monitoring and evaluation of health care services. *Tubaramure* also provided support to public hospitals. Two medical doctors from each of the four public hospitals in Ruyigi and two hospitals in Cankuzo were selected by IMC to participate in IMCI and CMAM training together with the PHAs and DHAs.

Sub-AB-CC 4.2b: IMC Provision of Materials and Equipment (Start-Up and Post-Start-Up)

IMC provided health centers the materials and medical equipment (i.e., height boards, scales, and charts) for ANC, PNC, GM, and IMCI activities. IMC further provided educational and sensitization materials, such as registries, posters, image boxes, and leaflets.

When possible, IMC provided logistical support to transport therapeutic products and medications from Bujumbura to the provincial or district storage sites and utilization sites. However, acquisition and distribution of therapeutic products and medications remained the primary responsibility of PHAs.

Sub-AB-CC 4.2c: IMC Support for Provincial Health Technicians, Community Health Workers, and *Tubaramure* Health Promoters (Start-Up and Post-Start-Up)

In 2010, IMC organized and provided 1-week trainings for the TPSs and THPs on ANC, PNC, GM, IMCI, and CMAM. The TPSs then assisted in training the CHWs in 2011. Though they were not health providers, the THPs were included in the aforementioned health trainings; because of their role in leading LM care group sessions, it was important that they be able identify antenatal and postnatal danger signs and screen for child malnutrition in the community (see sub-AB-CC 3.3b).

Sub-AB-CC 4.2d: IMC Support for Nurses and Nurse Assistants (Start-Up and Post-Start-Up)

Nurses and nurse assistants received training on ANC, PNC, GM, IMCI, and CMAM throughout the duration of the program. IMC training sessions varied in length: GM trainings lasted approximately 2 days, IMCI trainings 5 days, CMAM trainings 3 days, and ANC/PNC trainings 5 days. Trainings were repeated to reinforce the curriculum and to train incoming nurses and nurse assistants.

For each health center in the *Tubaramure* catchment area, IMC provided trainings for two nurses and two nurse assistants. Since not all key health workers could be simultaneously trained, two training waves were conducted for each topic and each target audience (i.e., nurses and nurse assistants). Separate trainings were organized for Cankuzo and Ruyigi Provinces.

Sub-AB-CC 4.3: Supervision and Monitoring

To obtain reliable feedback on the progress of institutional strengthening activities, IMC conducted two types of supervisions in the catchment area.

Sub-AB-CC 4.3a: IMC Monthly Supervisions (Start-Up and Post-Start-Up)

Each health center was visited twice per month by IMC staff to evaluate the quality of health care provided by nurses and nurse assistants. During each evaluation, IMC (1) documented the number of nurses who had received the IMC trainings and assessed whether those skills were being practiced, and (2) reviewed all TPS and CHW referral sheets identifying malnutrition in the community. If problems were identified by IMC, a meeting was called with all provincial and district health officers and local organizations operating in the health centers to discuss how to rectify the problem in a concerted effort.

Monthly health care use data were collected at all Cankuzo and Ruyigi health centers by IMC PTAs to estimate the number of people using ANC, PNC, GM, IMCI, and CMAM services. The IMC PTAs processed the data and filed monthly reports.

Medical doctors at the stabilization center (i.e., a center for malnourished children with medical complications) received monthly supervisory visits by IMC and provincial or district health officers to ensure the implementation of quality health services.

Sub-AB-CC 4.3b: Joint Supervisions with the Ministry of Health (Start-Up and Post-Start-Up)

In November 2010, a supervision tool was developed by IMC to assess the quality and adequacy of health services and whether medical staff were following the established protocols. Health centers were chosen at random for evaluation by IMC and were typically informed 1 day in advance of the visit. Every 3 months, the district health officer accompanied IMC staff during supervisory visits of health centers or public hospitals.

Every 3 months, IMC staff also conducted joint supervision visits with the PHAs and DHAs to monitor and ensure the quality of services. Joint supervisions with the central bureau of the MOH were also conducted at least once a year.

Sub-AB-CC 4.4: Finance and Administration Support (Start-Up and Post-Start-Up)

IMC had one finance and administration support employee in each of the Ruyigi and Cankuzo offices. This staff member was in charge of all finance and administration tasks for IMC activities.

5.2.5 AB-CC 5: Monitoring and Evaluation

AB-CC 5 included monitoring and evaluation of program implementation conducted by the program. Implementing these monitoring and evaluation activities in Burundi included monitoring program activities in multiple locations and generating evidence that was useful to the program. The activities were divided into planning, monitoring, and evaluation activities. **Table 5.14** summarizes when each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.14 AB-CC 5: Monitoring and evaluation activities by year, *Tubaramure*

Sub-AB-CC	2009	2010	2011	2012	2013	2014
5.1 Planning		SU	PSU	PSU	PSU	PSU
5.2 Monitoring						
5.2a Quarterly monitoring		SU	PSU	PSU	PSU	PSU
5.2b Monitoring food ration utilization		PSU	PSU	PSU	PSU	PSU
5.2c Additional monitoring			SU	PSU	PSU	PSU
5.2d Monitoring trigger indicators		SU	PSU	PSU	PSU	PSU
5.3 Evaluation						
5.3a Baseline survey		SU				
5.3b Midline survey				SU	SU	
5.3c Endline survey						PSU

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 5.1: Planning (Start-Up and Post-Start-Up)

Monitoring and evaluation activities and tools to evaluate *Tubaramure's* effectiveness were designed during the development of the program proposal. An indicator performance-tracking table, a performance management plan, and a DIP were created. The indicator performance-tracking table was reviewed annually (each October) by the monitoring and evaluation team, COP, DCOP, and CTNAN and modified only during the first 2 years of the program. The DIP was updated quarterly by the monitoring and evaluation team, COP, DCOP, and CTNAN. The annual *Tubaramure* survey was developed in September 2010 by the monitoring and evaluation team with input from the COP, DCOP, and CTNAN. This tool was reviewed quarterly by the monitoring and evaluation team until the start of 2012, after which it was reviewed semiannually (see sub-AB-CC 5.2a).

Sub-AB-CC 5.2: Monitoring (Post-Start-Up)

Monitoring activities were conducted by the monitoring and evaluation team throughout the duration of the program.

Sub-AB-CC 5.2a: Quarterly Monitoring (Post-Start-Up)

In addition to the annual survey that was conducted based on the intermediate result indicators and output indicators included in the indicator performance-tracking table, beneficiaries were also surveyed quarterly to gain a better understanding of the results being shown by the indicator performance-tracking table. Each quarter, beneficiaries were randomly selected from six *collines* in Ruyigi and four *collines* in Cankuzo to be interviewed in their homes. Two monitoring and evaluation officers (three monitoring and evaluation officers during the 2012 fiscal year) implemented the survey over 10 days. The data were checked by the monitoring and evaluation coordinator, entered into a Microsoft Excel database, and analyzed over a 1-week period in SPSS. The monitoring and evaluation coordinator summarized the results in a quarterly report. The first draft of the quarterly report was submitted to the *Tubaramure* team for recommendations to be incorporated into the final draft. Each quarterly report was made available and presented to the *Tubaramure* team and CRS Burundi staff to evaluate the program's progress. The reports were kept on file and compiled at the end of each fiscal year into an annual report for USAID.

Sub-AB-CC 5.2b: Monitoring Food Ration Utilization (Post-Start-Up)

The CRS end-use agents monitored whether Title II food rations were being sold in local markets and evaluated the acceptability and consumption of food rations by beneficiary households. Additionally, the CTNAN evaluated BMs' food and nutrition knowledge through care group and homestead visits with THPs that occurred twice a month. Summary reports of the visits were written by the CTNAN and kept on file. When the report findings detected potential implementation challenges, the CTNAN consulted the COP for solutions.

Sub-AB-CC 5.2c: Additional Monitoring (Post-Start-Up)

If a national technical advisor (NTA) from CRS, IMC, or FH was informed of a program implementation problem through monitoring activities (see sub-AB-CCs 3.3a, 3.3b, 5.2c, 7.1c, and 7.2b) or by field staff, the monitoring and evaluation team organized additional field visits and data collection to assess the situation. THPs were trained by the CRS monitoring and evaluation officers on how to collect the necessary data and whom to collect it from. THPs would then collect data for 2 weeks from a small sample. The data were analyzed by the relevant consortium member organization in Bujumbura. If the data confirmed that the problem was a legitimate issue, the COP was consulted for recommendations and solutions.

Sub-AB-CC 5.2d: Monitoring Trigger Indicators (Start-Up and Post-Start-Up)

Two CRS monitoring and evaluation officers collected data on six trigger indicators: (1) the average price of each of three staple crops (i.e., beans, cassava, and sweet potatoes) at local markets; (2) the number of deaths from political violence; (3) the number of SAM cases admitted to the stabilization center; (4) farmers' perceptions of whether seasonal rains were sufficient; (5) farmers' reports of delays in planting or harvesting in relation to the crop calendar; and (6) how farmers coped with managing unexpected negative shocks, such as drought or family illnesses. A tool was developed for each indicator, and data were collected from households, markets, and hospitals in Cankuzo and Ruyigi for a 1-week period every 2 months. The data were checked by the monitoring and evaluation coordinator, entered into Microsoft Excel, processed, and analyzed using SPSS over a 1-week period. A trigger indicator report was written to assess whether program activities needed to be modified to accommodate circumstances affecting program implementation areas. The report was submitted to the *Tubaramure* team for review before a final version was sent to the FFP regional office.

Sub-AB-CC 5.3: Evaluation

Evaluation activities were divided into baseline, midline, and endline.[26] For each phase, an external consultant was hired to collect and analyze data and write a report.

Sub-AB-CC 5.3a: Baseline Survey (Start-Up)

CRS conducted a baseline survey to assess maternal and child (0–59 months) health and nutritional status prior to the start of *Tubaramure.* CRS contracted the Institute of Statistics and Economic Studies of Burundi (ISTEEBU) to implement the survey, clean the data, and conduct the analysis. The fieldwork team consisted of two supervisors, five controllers, 20 investigators, and five anthropometrists. Data were collected in March 2010, and the final report was completed in July 2010.

Sub-AB-CC 5.3b: Midline Survey (Start-Up)

A similar approach was used to conduct the midline survey, which was conducted in February 2012.

Sub-AB-CC 5.3c: Endline Survey (Post-Start-Up)

A similar approach was used to conduct the endline survey, which was conducted in March 2014.

5.2.6 AB-CC 6: Training and Supervision of Program Staff

The four sub-AB-CCs of AB-CC 6 included activities related to the training and supervision of program staff. Trainings and supervisions were divided by key program activities. **Table 5.15** summarizes when each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.15 AB-CC 6: Training and supervision of program staff activities by year, *Tubaramure*

Sub-AB-CC	2009	2010	2011	2012	2013	2014
6.1 BCC training						
6.1a Training of field staff on BCC modules and specific-age cards		SU	PSU	PSU	PSU	PSU
6.1b Training of consortium staff on BCC components	SU					
6.1c Supervision of BCC supervisors and *Tubaramure* health promoters	SU	PSU	PSU	PSU	PSU	PSU
6.1d Training on agricultural methods		SU				

[26] The baseline and midline surveys were considered start-up activities, because they were distinct program activities that required preparation. The endline survey could not be considered a start-up activity, because activities in the final year of the program were not annualized.

Sub-AB-CC	2009	2010	2011	2012	2013	2014
6.1e Recipe training			SU			
6.2 Monitoring and evaluation training and supervision						
6.2a Indicator training		SU				
6.2b Supervision of field staff	SU	PSU	PSU	PSU	PSU	PSU
6.3 Institutional strengthening trainings		SU	SU			PSU
6.4 Food ration distribution training and supervision						
6.4a Supervision of food ration distribution sites		PSU	PSU	PSU	PSU	PSU
6.4b Supervision of end-use agents		PSU	PSU	PSU	PSU	PSU
6.4c Trainings of food ration distribution site managers		SU	PSU	PSU	PSU	PSU

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 6.1: BCC Training (Start-Up and Post-Start-Up)

Staff from each implementing NGO received training on the key concepts from the program's BCC component. The THPs, FH BCC supervisors, and CRS CTPANs received more intense training on BCC lessons, recipes, and agricultural methods depending on the activities they implemented in the field.

Sub-AB-CC 6.1a: Training of Field Staff on BCC Modules and Specific-Age Cards

Five FH BCC supervisors and 36 THP received 1 to 2 weeks of training for each BCC module by FH-United States (Module 1) and a FH NTA (Modules 2–5). Trainings were conducted as the BCC modules rolled out, and they were organized separately in each province. Once the THPs received training on a module, they were prepared to provide training to the LMs on the BCC modules and specific-age cards at care group meetings. By 2013, all BCC modules had been delivered. However, based on assessments of how well the BCC materials were being comprehended and retained, FH decided to retrain THPs on selected key messages from the BCC modules, who then retrained LMs on these materials during care group meetings.

Sub-AB-CC 6.1b: Training of Consortium Staff on BCC Components (Start-Up)

Two care group and THP start-up trainings were conducted in Gitega Province in 2009 by FH to familiarize consortium staff with the care group methodology and how the program would be organized at the community level. Fifty-four staff members participated in the training, including 36 THPs, three members of the CRS management, five FH BCC supervisors, four members of the IMC management, two members of the CARITAS management, and four MOH staff members.

THPs received additional training on how to identify potential care group participants, organize eligible women into care groups, facilitate the elections of LMs, define the roles and responsibilities of key actors in the care group approach (i.e., BMs, LMs, THPs, the BCC supervisors, and the provincial food and the CTPAN), maintain a registry of care group participants, report attendance, and use adult learning methods.

Sub-AB-CC 6.1c: Supervision of BCC Supervisors and *Tubaramure* Health Promoters (Start-Up and Post-Start-Up)

Every 3 months, the FH NTA met with each of the five FH BCC supervisors to evaluate their performance. The FH NTA also met with each of the THPs under the supervision of the FH BCC supervisor to evaluate their delivery of BCC modules and specific-age cards. The FH NTA and FH BCC supervisor provided feedback and recommendations for improvement directly to the THPs.

The FH NTA and FH BCC supervisors accompanied each THP during one LM home visit and three BM home visits to evaluate the THP's relationship with the beneficiary population and assess whether BMs

were applying practices learned from the BCC lessons. The FH NTA evaluated each THP's teaching skills and quality of instruction on BCC module content and the specific-age cards. Recommendations for improvement were made by the FH NTA and the FH BCC supervisors to the THP.

FH BCC supervisors also observed THPs while they trained LM care groups, to evaluate their performance. The quality of THPs' nutrition and agriculture lessons and teaching skills was also monitored by the CRS CTPANs.

Sub-AB-CC 6.1d: Training on Agricultural Methods (Start-Up)

Using the agriculture and poultry husbandry techniques manuals (see sub-AB-CC 3.5a), a consultant provided a 1-week training on agriculture methods to 36 THPs and two CTPANs in October 2010.

Sub-AB-CC 6.1e: Recipe Training (Start-Up)

The CTNAN provided a 1-week recipe training to 36 THPs and the two CTPANs using the recipe manual and seasonal calendar (see sub-AB-CC 3.4) in May 2011. During the training, THPs were taught how to conduct recipe demonstrations for LMs. Each THP also received a copy of the Kirundi guide (see sub-AB-CC 3.4) to use as a teaching tool.

Sub-AB-CC 6.2: Monitoring and Evaluation Training and Supervision

The monitoring and evaluation staff were trained in how to collect indicators and conduct field supervision visits.

Sub-AB-CC 6.2a: Indicator Training (Start-Up)

Intermediate result indicators and output indicators were included in the *Tubaramure* project proposal to monitor and evaluate the progress of the program (see AB-CC 5).

The meaning of each indicator and how the indicator could be evaluated was explained to *Tubaramure* and partner staff. The monitoring and evaluation team provided three workshops to *Tubaramure* staff to explain program performance and assessment methods: one in Bujumbura, one in Ruyigi, and one in Cankuzo.

Sub-AB-CC 6.2b: Supervision of Field Staff (Start-Up and Post-Start-Up)

To supervise FH field staff, the FH NTA drafted monthly summary reports on progress, enrollment numbers, modules taught, and attendance rates and presented the findings to the consortium group at monthly meetings. Additionally, every 3 months, the FH country director conducted field visits to Cankuzo and Ruyigi and met with the five FH BCC supervisors and the two CRS provincial coordinators to receive updates on progress and problems. Finally, every 2 months, the FH monitoring and evaluation coordinator traveled to Cankuzo and Ruyigi to visit the THPs, attend care group sessions, and examine the enrollment registry. The FH country director reviewed the monitoring and evaluation coordinator's report with the FH programs director and FH NTA. Any recommendations or programmatic issues of concern were taken to CRS.

Sub-AB-CC 6.3 Institutional Strengthening (Start-Up and Post-Start-Up)

IMC developed a curriculum to train the MOH staff (i.e., nurses, nurse assistants, doctors, TPSs, and CHWs). This curriculum included slide presentations and manuals on ANC, PNC, GM, CMAM, and IMCI. At the start of the *Tubaramure* program, the IMC NTA taught the curriculum and adult teaching methods to the IMC PTAs.

Sub-AB-CC 6.4: Food Ration Distribution Training and Supervision

Trainings were conducted to ensure that all staff participating in food distributions would distribute the correct rations and could handle any challenges.

Sub-AB-CC 6.4a: Supervision of Food Ration Distribution Sites (Post-Start-Up)

The food commodities manager and the CARITAS team performed routine monitoring of the food distribution sites and its workers to verify that sites were well-maintained, that sites had the necessary materials and equipment to conduct distributions, and that food rations were stored properly and in good condition. Inventory of food rations was also taken during these visits, and warehouse administrative documents and forms were checked for appropriate use.

Sub-AB-CC 6.4b: Supervision of End-Use Agents (Post-Start-Up)

The food commodities manager supervised the end-use agents, who were responsible for ensuring that food distribution activities and food ration use in the program catchment area did not violate program guidelines. They were supervised on a monthly basis by reviewing their monthly reports and occasionally conducting field visits to supervise their activities.

Sub-AB-CC 6.4c: Training of Food Ration Distribution Site Managers (Start-Up and Post-Start-Up)

The food commodities team and the CARITAS team conducted a total of four 2-day workshops (one in 2010, two in 2011, and one in 2013) to train food distribution site managers on proper distribution methods. Managers were instructed how to properly maintain their sites, keep records, properly use program forms, organize their workers, and interact with beneficiaries.

5.2.7 AB-CC 7: Advocacy, Promotion, and Social Mobilization

AB-CC 7 addressed advocacy, promotion, and social mobilization activities of the program. These activities addressed the set-up of the program and its research component at the local and national levels and how the program kept stakeholders and partners updated with the program's progress. **Table 5.16** summarizes the years when each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.16 AB-CC 7: Advocacy, promotion, and social mobilization activities by year, *Tubaramure*

Sub-AB-CC	2009	2010	2011	2012	2013	2014
7.1 Host country agreement	SU					
7.2 Sensitization and local approval	SU	PSU	PSU	PSU	PSU	PSU
7.3 Permission to perform study	SU					
7.4 Meetings and workshops	SU	PSU	PSU	PSU	PSU	PSU

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 7.1: Host Country Agreement (Start-Up)

The original HCA between CRS and the government of Burundi was drafted and signed in October 2000. However, when CRS started implementing new MYAPs after 2000, the FFP office required a complementary HCA to incorporate specific provisions related to food aid that were not included in the original agreement. In 2008, a complementary HCA was signed to reflect current activities in the country and meet the CRS donors' requirements. This document was drafted by the MQC in collaboration with CRS lawyers, edited by the country representative, and sent to the regional director for approval. After approval, the draft was sent to a lawyer at CRS headquarters for review. The final draft was submitted in

October 2008 to the Cabinet of Ministers and was signed by the Minister of Foreign Affairs and the Minister of Agriculture and Livestock. This agreement required renewal every 5 years.

In 2009, CRS wrote the *Tubaramure* proposal and obtained agreement letters from each consortium member. All parties (i.e., CRS, CARITAS, IMC, and FH) met with the governors of Ruyigi and Cankuzo to explain the purpose and objective of the PM2A project, the member organizations, and the components of the program. Approval was obtained from the provincial government during the proposal stage as a proposal requirement. Letters of support were provided by the governors of Cankuzo and Ruyigi, the Minister of Health, local medical doctors, the World Food Programme, and UNICEF. A technical agreement was developed by CRS's administrative manager and the *Tubaramure* DCOP detailing the specifics of the program. The administrative manager provided ongoing input for the MQC to review and edit the technical agreement before submitting it to the COP for approval. The document was then sent to a CRS-contracted lawyer at a local law firm in Bujumbura. Once the document was finalized, it was submitted to the MOH for additional review and comments, which were incorporated into the final draft. It took 6 months for the technical agreement to be granted permission by the MOH. The agreement letters were submitted with the proposal to USAID. Final approval was granted by USAID in June 2009.

Sub-AB-CC 7.2: Sensitization and Local Approval (Start-Up and Post-Start-Up)

As part of the implementation process, the headquarters office of each consortium group member (i.e., FH, IMC, and CARITAS) developed an agreement with CRS defining its roles and responsibilities.

Community sensitization to the *Tubaramure* program was conducted in March 2009. Staff from local administrative offices, government officials, and *colline* chiefs were brought together and provided details of the *Tubaramure* program and the services provided by consortium members. In turn, these leaders informed their local communities of the program so that pregnant women would be ready to enroll. The program continued conducting sensitization activities based on its enrollment goal, objectives, and midterm results. A few years into program implementation, the program began incorporating gender awareness into its community sensitization activities in order to improve the perception of the program among (potential) beneficiaries' husbands. This included focus group discussions with beneficiaries and their husbands, to encourage husbands' support of program activities.

IMC held a start-up meeting with local health authorities, administrative bodies, and community representatives (i.e., health committee members and TPSs) to facilitate their understanding of the institutional strengthening component of the *Tubaramure* program. Communities were then informed of the *Tubaramure* program by the meeting attendees. Prior to the meeting, IMC developed an agenda with the PHAs.

Sub-AB-CC 7.3: Permission to Perform Study (Start-Up)

During the proposal process, the governors of Cankuzo and Ruyigi were informed of the research design of the program, specifically that it would be a randomized controlled trial. The COP first sensitized the governors to the research study components. Next, the COP and FFP regional officer met with the MOH in December 2009 to discuss the study and share IFPRI's institutional review board-approved research protocol.

Sub-AB-CC 7.4: Meetings and Workshops (Start-Up and Post-Start-Up)

The primary stakeholders for the *Tubaramure* program included the MOH, provincial health departments, provincial governors, consortium members, and FFP. Meetings with provincial governors and health departments were held biannually to discuss progress, challenges, and next steps. Results from the project's LDM and barrier-analysis studies, as well as results of the baseline study, were shared with stakeholders during a workshop in Bujumbura.

Meetings were held by the *Tubaramure* consortium to update secondary stakeholders working in the health field. Participants typically included Concern, UNICEF, World Relief, PRONIANUT, and the Food and Agricultural Organization. An additional workshop was held with Concern (Cibitoke office) and World Relief (Gitega office) to share *Tubaramure's* care group experiences to inform these organizations' own care group programs and strategies.

5.2.8 AB-CC 8: Management, Planning, and Administration

AB-CC 8 included program management, planning, and administration activities; it provided the financial and administrative support for all other AB-CCs and had six sub-AB-CCs. **Table 5.17** summarizes the years when each sub-AB-CC took place and if the activity was a start-up or post-start-up activity.

Table 5.17 AB-CC 8: Management, planning, and administration activities by year, *Tubaramure*

Sub-AB-CC	2009	2010	2011	2012	2013	2014
8.1 Human resources	SU		PSU			
8.2 Procurement	SU	PSU	PSU	PSU	PSU	PSU
8.3 Pre-implementation logistics	SU					
8.4 Offices and infrastructure						
8.4a Support services for all consortium members	SU	PSU	PSU	PSU	PSU	PSU
8.4b Meetings		PSU	PSU	PSU	PSU	PSU
8.5 Headquarters support		PSU	PSU	PSU	PSU	PSU
8.6 Finance support	SU	PSU	PSU	PSU	PSU	PSU

Note: SU=start-up; PSU=post-start-up.

Sub-AB-CC 8.1: Human Resources (Start-Up)

Once the *Tubaramure* proposal was awarded by FFP, CRS was permitted to advertise and recruit for both domestic and international positions. CRS advertised for 24 local positions using local newspapers and postings outside of the CRS office. In a separate process, THPs were recruited from within their communities. A letter was written to community development committees requesting their suggestions for THPs. Each candidate was interviewed by a committee composed of three consortium members (i.e., FH, IMC, and CRS). Three THPs were hired for each of the 12 communes.

CRS also recruited for three international positions (i.e., the COP, the commodities and monetization manager, and the monitoring and evaluation coordinator). These positions were posted on the CRS intranet, the CRS worldwide network, and the CRS website. International applicants were interviewed by the country program (Bujumbura office), the regional office (Kinshasa), and headquarters (Baltimore).

FH recruited seven local employees for *Tubaramure*. The positions were advertised via local radio, national newspapers, partner organizations, and the Internet. Shortlisted candidates were given written and oral tests. Part-time finance and logistical positions were also hired. At FH-Burundi, the finance manager and programs director, filled by international staff members, provided 30 percent and 40 percent of their time to the project, respectively.

CARITAS placed job advertisements for a chief of project, logistician, and accounting clerk in Bujumbura, as well as for two provincial supervisors, in local newspapers and on the Internet. CARITAS also hired 23 distribution site managers who were recruited from within the community (see sub-AB-CC 2.2a).

IMC placed local advertisements to fill 10 positions. It also conducted international recruitment for the NTA who oversaw IMC's activities in *Tubarmure*, as well as another program in Burundi. Shortlisted candidates for the position were given written and oral tests.

Applications for international employee work permits were submitted to the Minister of Foreign Affairs. Once work permits were issued, CRS and IMC submitted applications to the Office of Immigration to obtain work visas for the four international hires (i.e., three CRS employees and one IMC employee). Two international employees worked part-time for *Tubaramure* at FH-Burundi, but since they were not hired specifically for the *Tubaramure* program, they did not require work visas. CARITAS had no international positions.

Sub-AB-CC 8.2: Procurement (Start-Up and Post-Start-Up)

The vehicle procurement process took place in Burundi to avoid international shipping taxes. The logistics teams from each of the four NGOs (i.e., CRS, FH, IMC, and CARITAS) compared vehicle prices from several vendors. CRS purchased 42 motorcycles, one Prado, four Hilux pickups, and two trucks. FH purchased five motorcycles and one vehicle. IMC's logistics coordinator/procurement officer purchased one vehicle and made a request for a second.

CRS purchased six desktop computers for *Tubaramure* staff: two for administration and finance, one for the Gitega warehouse, one for the Ruyigi warehouse, and two for the CARITAS provincial supervisors. Laptops were also purchased for the COP, DCOP, the two CRS provincial coordinators, the CTNAN, the two CTPANs, the CARITAS office (two), and the monitoring and evaluation coordinator using grants and CRS private funds. All CRS computers and laptops were purchased in the United States and imported. FH-United States purchased a computer for each of the five FH BCC supervisors and one for the FH NTA. These computers were brought from the United States to Bujumbura by the FH team; therefore, no shipping costs were incurred. IMC purchased five laptops from local suppliers in Bujumbura through the logistics coordinator. CARITAS purchased one laptop for the chief of project and one desktop for the accounting clerk.

All NGOs purchased office supplies from local suppliers. The CRS procurement officer was in charge of purchasing the supplies following approval from the COP and/or the CRS county representative. The logistics manager and logistics coordinator determined the needs of the *Tubaramure* staff for FH and IMC, respectively. All CARITAS office supply requests were submitted to the general logistician.

Sub-AB-CC 8.3: Pre-Implementation Logistics (Start-Up)

A 1-week workshop was held in Bujumbura in May 2009 to develop the *Tubaramure* proposal; three of the four eventual consortium group members (i.e., CRS, FH, IMC) were included. After the workshop, the proposal continued to be revised by CRS-United States, FH-United States, and the local finance managers at CRS, FH, and IMC. A working group was formed in Bujumbura consisting of one representative each of CRS, FH, and IMC to finalize the proposal. Once finalized, CRS submitted the proposal to FFP.

The eastern provinces of Ruyigi and Cankuzo were chosen based on their poor health and nutrition indicators, including the high prevalence of undernutrition, limited access to ANC and PNC services, poor IMC GM results, and high food insecurity. The selection process included ranking provinces based on health indicators using an excel spreadsheet developed by CRS, FH, and IMC. The four provinces with the lowest health and nutrition indicator rankings were Muyinga, Kirundo, Cankuzo, and Ruyigi. All four provinces were included in the original *Tubaramure* proposal submitted to USAID, but USAID advised that the program be limited to two provinces. Cankuzo and Ruyigi were selected given the severity of food insecurity and undernutition.

An independent consultant had been previously hired in September 2007 to conduct a Bellmon analysis, which was used in the development of the *Tubaramure* proposal.[27] A Bellmon analysis is used to determine whether food aid programs meet the criteria outlined in the Bellmon Amendment of 1977.[28] Specifically, adequate storage facilities must be available for food commodities in the recipient country at the time of export to prevent spoilage or waste. Furthermore, the importation and monetization of food commodities in the recipient country should not interfere with or disincentivize domestic production or marketing.

Sub-AB-CC 8.4: Offices and Infrastructure

Sub-AB-CC 8.4a: Support Service for all Consortium Members (Start-Up and Post-Start-Up)

The COP coordinated all activities among the consortium group members in Bujumbura to ensure progress toward program goals.

CRS provided logistical support to all consortium members through the provincial offices in Cankuzo and Ruyigi. The provincial offices were rented by CRS, but all provincial staff from the four consortium partners, including the provincial coordinator, were stationed at the provincial offices for ease of coordination. Logistical support service costs were included in the CRS budget; therefore, consortium members did not pay an overhead fee.

Sub-AB-CC 8.4b: Meetings (Post-Start-Up)

Each of the main *Tubarmure* units had meetings to discuss program activities and communicate any ongoing issues. Several monthly meetings were held. The monitoring and evaluation coordinator met with the DCOP every month to provide updates on monitoring activities. The COP, commodities manager, commodities assistant, FH BCC supervisors, CARITAS provincial supervisors, and CARITAS chief of project met monthly to discuss food distribution activities. The GTT met every month to discuss technical documents and technical aspects of the program. Participants in the GTT meetings included *Tubaramure*'s DCOP, three NTAs (i.e., CTNAN, IMC NTA, and FH NTA), the CRS monitoring and evaluation coordinator, and the CARITAS chief of project. Monthly meetings were also held between consortium members, and on occasion with the provincial coordinator, in Bujumbura.

Field visits to observe overall program progress and development were conducted every 2 months by one of three teams: (1) the COP (or DCOP) and three NTAs (i.e., CTNAN, IMC NTA, and FH NTA), (2) the COP and country representative, or (3) the COP and deputy country representative.

Quarterly meetings were held to ensure that all *Tubaramure* financial documents were in order. In attendance were the finance manager, the MQC, and the country representative or deputy country representative. Every 3 months, a provincial coordination meeting was also held between the DCOP, CTNAN, provincial coordinators, CTPANs, CARITAS provincial supervisors, CARITAS chief of project, and the warehouse managers. The *Tubaramure* consortium held consortium field visits every 3 months to observe program activities. During a consortium visit, a delegate from each consortium member's Bujumbura office, a delegate from the provincial office, and a MOH representative were sent to the field. The PHAs, DHAs, and local NGOs in nutrition and health also took part in the field visits.

Finally, quarterly conference calls were held between the COP, DCOP, CTNAN, CRS headquarters staff, and country representative or deputy country representative. Conference calls were held to ensure all parties were up-to-date with *Tubaramure* program activities.

[27] The 2007 analysis was still valid for inclusion in the 2009 proposal.
[28] The Bellmon Amendment was an amendment to Section 401(b) of U.S. Public Law 480 (now called the Food for Peace Act) passed in 1977 to address concerns over the potentially adverse effects of food aid on local agricultural production and marketing.

Sub-AB-CC 8.5: Headquarters Support (Start-Up and Post-Start-Up)

CRS had three organizational levels: country program (based in Bujumbura, Burundi), regional office (based in Kinshasa, Democratic Republic of the Congo), and headquarters (based in Baltimore, Maryland). At the country program level, the country representative, head of programming, MQC, and COP liaised with donors at the global level and prepared program documents and reports with the regional office. The regional office consisted of the regional director, deputy regional director for program quality, deputy regional director for management quality, and regional technical advisors. At headquarters, the senior technical advisor and the liaison department linked the country program with USAID and donors, and the logistics department coordinated all major shipments to Burundi. Headquarters further provided legal support regarding policies and procedures and reviewed technical documents.

FH-Burundi received continuous support from FH-United States. The FH-United States health team assisted in developing the protocols for formative research and oversight of data collection and analysis. It was the responsibility of the FH-United States health team to design, review, test, and validate each of the BCC messages and translate the messages into lessons and modules.

IMC-Burundi received headquarters support from two main units: the health and technical unit and the financial unit. The health and technical unit provided all technical support for program implementation, monitoring, evaluation, and reporting. The financial unit provided support for finance and administration activities, ensured that all expenses were in agreement with IMC and donor regulations, and prepared for annual audits.

CARITAS-Burundi (a local organization) did not have headquarters outside of Burundi.

Sub-AB-CC 8.6: Finance Support (Start-Up and Post-Start-Up)

Implementing organizations received support from their finance departments for day-to day activities. For the *Tubaramure* program, the finance department prepared monthly reports, budget comparison reports, and an annual expenditure report. Alongside the GTT, the finance departments produced a revised budget for the PREP report and the annual results report.

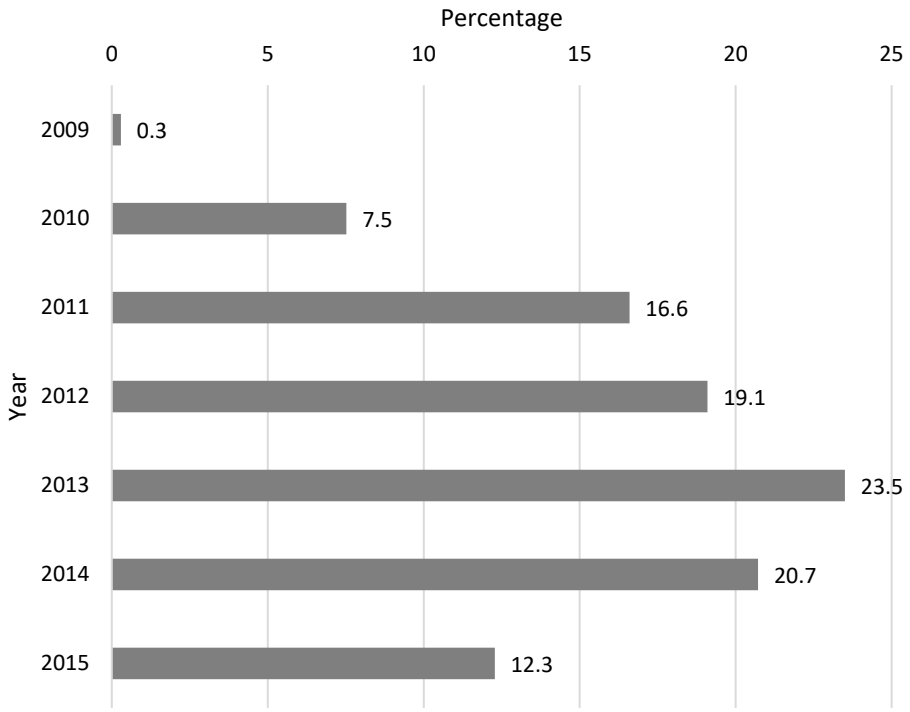
6. Actual Program Activity Costs by AB-CC

Total program activity costs are presented here for each country by the AB-CC and year of program implementation. In each section, AB-CC costs are described according to the cost of each sub-AB-CC, timing (start-up or post-start-up), and input requirements. Total program activity costs are further broken down by the number of health convergence centers, communities, and beneficiaries served.

6.1 Actual Program Activity Costs: *PROCOMIDA*, Guatemala

The total cost of implementing *PROCOMIDA* between 2009 and 2015 was US$27.7 million. **Figure 6.1** highlights the variations in costs over the course of the program. Total costs were highest during peak beneficiary enrollment in 2013 (23.5 percent of total program activity costs). They were lowest in 2009 (0.3 percent) and 2010 (7.5 percent), as program activities were being initiated, and in 2015 (12.3 percent), when program activities were discontinued.

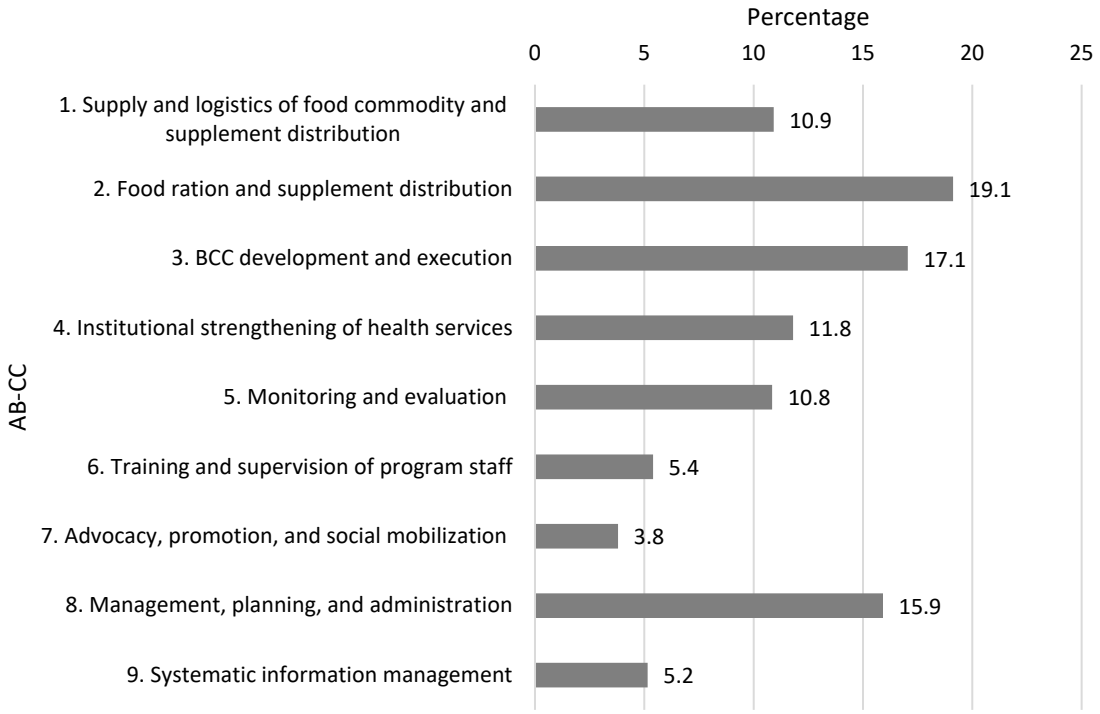
Figure 6.1 Percentage of total program activity costs by year, *PROCOMIDA*



Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

Total program activity costs can also be divided among AB-CCs (**Figure 6.2)**. AB-CC 2, which included activities related to food ration and supplement distribution, was the most expensive AB-CC, constituting 19.1 percent of total costs. AB-CC 3 and AB-CC 8 were the second most costly (constituting 17.1 percent and 15.9 percent of total costs, respectively). AB-CC 3, which included the development and delivery of the BCC strategy, required extensive interaction with beneficiaries during program implementation and employed the largest number of staff members (including their salaries and travel costs). The costs of AB-CC 8 were high because it included the cost of employing managers and headquarters staff who required higher salaries. The next most costly AB-CCs were those with field-related activities, including AB-CCs 1, 4, and 5, which constituted 10.9, 11.8, and 10.8 percent of total program activity costs, respectively.

Figure 6.2 Percentage of total program activity costs by AB-CC, *PROCOMIDA*



Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

Costs can be further divided into the type of inputs required to implement program activities (**Table 6.1)**. Given the number of activities that were labor-intensive and could not be automated, personnel costs accounted for the largest share (49.8 percent) of total program activity costs. The second most costly input was for recurrent transportation (12.5 percent of total program activity costs), which included moving food commodities from port to warehouses and from warehouses to distribution sites, as well as fuel costs for vehicles. The third highest cost category was attributable to travel for program staff (8.1 percent), which included *per diem* and travel allowances for field technicians and other program staff when they made field visits.

Table 6.1 Total input costs by year, *PROCOMIDA*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent									
Personnel	33,951	1,113,305	2,228,647	2,751,589	2,952,558	3,085,840	1,633,647	13,799,538	49.8
Materials and supplies	15,038	75,233	256,952	208,525	209,043	197,278	108,881	1,070,950	3.9
Media	-	-	-	-	-	3,334	10,811	14,144	0.1
Transportation	985	370,366	777,059	682,862	809,033	573,598	242,623	3,456,525	12.5
Maintenance	1,549	43,629	22,811	20,241	30,233	36,095	17,269	171,826	0.6
Utilities	619	37,150	75,174	97,753	96,578	106,122	55,141	468,536	1.7
Rent	539	12,607	533,175	287,748	286,987	268,980	116,178	1,506,215	5.4
Travel for program staff	6,993	98,114	186,613	380,902	1,117,812	265,351	178,095	2,233,881	8.1
Trainings for staff and service providers	-	36,325	102,614	143,223	117,123	85,231	84,509	569,024	2.1
Sub-grants	-	112,367	158,905	275,037	256,460	182,959	23,142	1,008,870	3.6
Consultations	13,122	56,804	88,464	97,861	115,395	129,241	332,088	832,975	3.0
Miscellaneous	2,432	6,327	6,340	6,354	6,406	6,406	6,406	40,668	0.1
Capital									
Transportation	2,255	37,888	61,596	94,042	127,469	133,135	113,381	569,767	2.1
Equipment	-	32,789	84,957	222,730	354,105	632,600	455,320	1,782,501	6.4
Furniture	2,962	10,575	13,808	17,549	27,030	31,269	22,656	125,850	0.5
Total costs by input									
Recurrent	75,228	2,001,598	4,437,285	4,954,588	6,000,911	4,940,848	2,809,472	25,219,929	91.1
Capital	5,217	81,252	160,361	334,322	508,605	797,004	591,357	2,478,117	8.9
Total	80,445	2,082,849	4,597,646	5,288,909	6,509,515	5,737,852	3,400,830	27,698,046	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

6.1.1 AB-CC 1: Supply and Logistics of Food Commodity and Supplement Distribution

The first AB-CC, which was management of the supply and logistics of food distribution, incurred US$3.0 million in costs during the program (**Table 6.2).** All start-up activities were conducted in 2009 and included food commodity orders (sub-AB-CC 1.1a), food commodity imports (sub-AB-CC 1.1b), the transportation of food commodities to in-transit warehouses (sub-AB-CC 1.2a) and the Zacapa warehouse (sub-AB-CC 1.2b), and the monetization of crude degummed soybean oil (sub-AB-CC 1.4). Although the distribution of food rations was not part of program activities in 2009, it was essential to start the process to import food commodities to ensure that they were in country before the first distribution. Start-up activities constituted 0.9 percent of total AB-CC 1 costs.

All activities in AB-CC 1 incurred post-start-up costs. The storage of food rations in the Cobán warehouse (sub-AB-CC 1.3b) was the most costly activity, constituting 36.6 percent of total AB-CC 1 costs. The transportation of commodities to the Cobán warehouse from the port (sub-AB-CC 1.3a) and food commodity orders (sub-AB-CC 1.1a) were the next most costly, accounting for 28.6 percent and 9.6 percent of total costs, respectively. Implementation costs were highest in 2011, while the Zacapa warehouse was being temporarily used for storage, and in 2013, when peak beneficiary enrollment increased the need for transportation to, and storage at, the Cobán warehouse.

The costs of AB-CC 1 can be further disaggregated by input costs (**Table 6.3**). Recurrent transportation costs, which included transportation to the in-transit warehouse in Zacapa and the Cobán warehouse, accounted for 46.0 percent of all input costs. Personnel constituted only 18.3 percent of total inputs costs, which was small compared with other AB-CCs, since a minimal number of staff members were needed to manage the Cobán warehouse. Warehouse rental made up the next largest share (19.0 percent) of total costs for the AB-CC.

Table 6.2 AB-CC 1: Supply and logistics of food distribution and supplement costs, *PROCOMIDA*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
1.1 Food commodity orders and imports									
1.1a Food commodity orders									
Start-up	829	829	829	829	829	829	829	5,804	0.2
Post-start-up	-	31,531	73,972	34,807	83,561	61,478	0	285,349	9.4
Total	829	32,360	74,801	35,636	84,391	62,307	829	291,153	9.6
1.1b Food commodity imports									
Start-up	1,782	1,782	1,782	1,782	1,782	1,782	1,782	12,477	0.4
Post-start-up	-	23,721	38,570	39,597	42,183	30,240	10,532	184,844	6.1
Total	1,782	25,504	40,353	41,379	43,965	32,022	12,315	197,320	6.5
1.2 Food commodity management and storage									
1.2a Transportation of food commodities from port to in-transit warehouse									
Start-up	356	356	356	356	356	356	356	2,495	0.1
Post-start-up	-	142,166	103,652	5,224	-	-	-	251,042	8.3
Total	356	142,523	104,009	5,580	356	356	356	253,538	8.4
1.2b Food commodity storage in Zacapa warehouse									
Start-up	178	178	178	178	178	178	178	1,248	<0.1
Post-start-up	-	19,721	63,768	7,478	-	-	-	90,968	3.0
Total	178	19,899	63,947	7,657	178	178	178	92,216	3.1
1.3a Transportation to Cobán warehouse									
Start-up	175	175	175	175	175	175	175	1,226	<0.1
Post-start-up	0	142,166	110,457	123,220	304,075	108,629	74,669	863,216	28.6
Total	175	142,342	110,632	123,395	304,251	108,804	74,844	864,443	28.6
1.3b Food commodity storage in Cobán warehouse									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	98,773	284,057	213,605	228,771	187,598	93,474	1,106,277	36.6
Total	-	98,773	284,057	213,605	228,771	187,598	93,474	1,106,277	36.6
1.4 Monetization									
Start-up	356	356	356	356	356	356	356	2,495	0.1
Post-start-up	-	58,333	28,590	86,291	38,707	4,021	-	215,941	7.1
Total	356	58,689	28,947	86,647	39,063	4,377	356	218,437	7.2
Total									
Start-up	3,678	3,678	3,678	3,678	3,678	3,678	3,678	25,745	0.9
Post-start-up	-	516,411	703,067	510,222	697,298	391,965	178,674	2,997,637	99.1
Total	3,678	520,089	706,745	513,900	700,975	395,643	182,352	3,023,382	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

Table 6.3 AB-CC 1: Supply and logistics of food distribution and supplement input costs, *PROCOMIDA*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent									
Personnel	2,215	106,294	113,077	94,971	107,416	87,762	40,795	552,530	18.3
Materials and supplies	203	12,789	12,530	15,326	25,946	19,473	3,541	89,808	3.0
Media	-	-	-	-	-	-	-	-	-
Transportation	62	292,704	332,649	160,772	365,217	149,101	90,130	1,390,635	46.0
Maintenance	9	8,651	9	809	902	9	139	10,527	0.3
Utilities	17	5,108	7,441	11,260	2,955	2,250	641	29,671	1.0
Rent	3	6,309	181,607	115,768	132,277	113,174	26,746	575,884	19.0
Travel for program staff	280	12,637	21,504	16,691	13,833	3,860	1,204	70,008	2.3
Trainings for staff and service providers	-	-	-	-	-	-	-	-	-
Sub-grants	-	55,418	17,467	76,729	29,823	-	-	179,437	5.9
Consultations	-	-	-	-	-	-	-	-	-
Miscellaneous	-	-	8	13	72	7	-	100	<0.1
Capital									
Transportation	507	8,899	4,524	2,531	3,702	3,332	1,309	24,806	0.8
Equipment	-	10,582	15,213	17,668	17,547	15,976	17,206	94,192	3.1
Furniture	382	698	717	1,361	1,284	701	641	5,784	0.2
Total costs by input									
Recurrent	2,789	499,910	686,291	492,339	678,442	375,634	163,195	2,898,600	95.9
Capital	889	20,179	20,454	21,560	22,533	20,008	19,157	124,782	4.1
Total	3,678	520,089	706,745	513,900	700,975	395,643	182,352	3,023,382	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

6.1.2 AB-CC 2: Food Ration and Supplement Distribution

The second AB-CC, which accounted for the coordination and distribution of food rations and supplements, incurred US$5.3 million in costs over the duration of the program (**Table 6.4**). Start-up activities implemented in 2009 included community coordination (sub-AB-CC 2.1), design of transportation routes (sub-AB-CC 2.3a), design of bags provided to beneficiaries for transporting the rations (sub-AB-CC 2.5a), and design of bags used for repackaging the food commodities (sub-AB-CC 2.5b). These activities continued in 2010 along with additional start-up activities including the design of transportation contracts to move food rations from the warehouses to distribution sites (sub-AB-CC 2.3b), developing and producing the beneficiary card for participants (sub-AB-CC 2.4a), maintaining enrollment lists of beneficiaries (sub-AB-CC 2.4b), designing supplement bags (sub-AB-CC 2.5c), and developing the strategy for the implementation of LNS and MNP (sub-AB-CC 2.7). Start-up activities accounted for 17.6 percent of total AB-CC 2 costs.

All activities in AB-CC 2, with the exception of the design of supplement bags (sub-AB-CC 2.5c), incurred post-start-up costs. The transportation of food rations to distribution sites (sub-AB-CC 2.3c) was the most costly sub-AB-CC, constituting 26.1 percent of total AB-CC 2 costs. The second most costly sub-AB-CC was the repackaging of food rations (sub-AB-CC 2.2), which made up 23.8 percent of total AB-CC 2 costs. The third most costly sub-AB-CC was the distribution of food rations to beneficiaries (sub-AB-CC 2.7), which was 21.3 percent of total costs. After the first year of the program, AB-CC 2 costs increased substantially before peaking in 2012. Costs remained high from 2012 to 2014, as the program continued to enroll and retain a large number of beneficiaries.

The costs of AB-CC 2 can be further disaggregated by input costs (**Table 6.5**). Personnel costs accounted for the largest share (38.7 percent) of total input costs for AB-CC 2, followed by transportation costs (24.8 percent) and capital equipment costs (16.1 percent). The majority (81.7 percent) of input costs were recurrent, since the repackaging, transportation, and distribution of food commodities to distribution sites were ongoing activities that relied heavily on personnel and transportation costs.

Table 6.4 AB-CC 2: Food ration and supplement distribution costs, *PROCOMIDA*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
2.1 Community coordination									
Start-up	3,269	16,079	33,470	33,470	33,470	33,470	33,470	186,699	3.5
Post-start-up	-	-	-	130,333	11,984	148,678	-	290,995	5.5
Total	3,269	16,079	33,470	163,803	45,455	182,148	33,470	477,694	9.0
2.2 Repackaging and organization of food rations and supplements									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	87,524	152,631	240,709	321,117	240,171	218,222	1,260,374	23.8
Total	-	87,524	152,631	240,709	321,117	240,171	218,222	1,260,374	23.8
2.3 Transportation									
2.3a Designing transportation routes									
Start-up	2,912	8,363	16,148	16,148	16,148	16,148	16,148	92,013	1.7
Post-start-up	-	-	-	2,233	8,082	-	-	10,315	0.2
Total	2,912	8,363	16,148	18,380	24,230	16,148	16,148	102,328	1.9
2.3b Transportation contracts									
Start-up	-	4,312	4,312	4,312	4,312	4,312	4,312	25,869	0.5
Post-start-up	-	-	11,026	8,035	7,756	13,090	-	39,907	0.8
Total	-	4,312	15,338	12,346	12,068	17,401	4,312	65,777	1.2
2.3c Transportation to distribution sites									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	56,124	275,474	359,556	261,597	314,904	117,221	1,384,876	26.1
Total	-	56,124	275,474	359,556	261,597	314,904	117,221	1,384,876	26.1
2.4 Beneficiary enrollment									
2.4a Beneficiary cards									
Start-up	-	2,538	2,538	2,538	2,538	2,538	2,538	15,225	0.3
Post-start-up	-	-	11,655	2,441	1,195	996	-	16,287	0.3
Total	-	2,538	14,192	4,978	3,733	3,533	2,538	31,512	0.6
2.4b Beneficiary enrollment lists									
Start-up	-	18,660	36,364	36,364	36,364	36,364	36,364	200,478	3.8
Post-start-up	-	-	-	27,653	15,759	9,799	15,187	68,398	1.3
Total	-	18,660	36,364	64,016	52,123	46,162	51,551	268,876	5.1
2.5 Materials and supplies for food rations									
2.5a Cloth bag design, development, and production									
Start-up	1,013	8,800	8,800	8,800	8,800	8,800	8,800	53,813	1.0
Post-start-up	-	-	9,305	5,001	-	-	-	14,306	0.3

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
Total	1,013	8,800	18,105	13,801	8,800	8,800	8,800	68,119	1.3
2.5b Food ration bag design, development, and production									
Start-up	1,013	7,593	7,593	7,593	7,593	7,593	7,593	46,568	0.9
Post-start-up	-	-	15,508	5,102	252	252	-	21,113	0.4
Total	1,013	7,593	23,100	12,694	7,845	7,844	7,593	67,681	1.3
2.5c LNS and MNP supplement bag design									
Start-up	-	2,521	3,717	3,717	3,717	3,717	3,717	21,106	0.4
Post-start-up	-	-	-	-	-	-	-	-	-
Total	-	2,521	3,717	3,717	3,717	3,717	3,717	21,106	0.4
2.6 LNS and MNP implementation									
Start-up	-	-	58,566	58,566	58,566	58,566	58,566	292,830	5.5
Post-start-up	-	-	-	26,703	56,450	36,053	6,365	125,572	2.4
Total	-	-	58,566	85,269	115,016	94,619	64,931	418,402	7.9
2.7 Distributing food rations to beneficiaries									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	7,385	217,770	304,865	334,105	243,870	21,447	1,129,443	21.3
Total	-	7,385	217,770	304,865	334,105	243,870	21,447	1,129,443	21.3
Total									
Start-up	8,207	68,863	171,506	171,506	171,506	171,506	171,506	934,602	17.6
Post-start-up	-	151,033	693,368	1,112,630	1,018,299	1,007,813	378,443	4,361,586	82.4
Total	8,207	219,896	864,875	1,284,136	1,189,805	1,179,319	549,950	5,296,188	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

Table 6.5 AB-CC 2: Food ration and supplement distribution input costs, *PROCOMIDA*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent									
Personnel	4,716	115,748	371,993	540,660	417,032	408,113	191,434	2,049,696	38.7
Materials and supplies	114	2,346	109,633	89,241	85,895	60,469	23,776	371,475	7.0
Media	-	-	-	-	-	-	-	-	-
Transportation	134	44,382	275,011	363,525	249,891	293,823	84,823	1,311,589	24.8
Maintenance	306	3,344	2,685	4,023	3,464	3,467	2,039	19,328	0.4
Utilities	33	1,572	4,548	14,417	8,417	7,253	3,239	39,479	0.7
Rent	89	1,162	51,036	37,622	34,656	29,960	14,801	169,325	3.2
Travel for program staff	2,131	13,489	20,891	81,202	170,141	31,125	17,937	336,917	6.4
Trainings for staff and service providers	-	-	-	-	-	-	-	-	-
Sub-grants	-	27,052	-	-	-	-	-	27,052	0.5
Consultations	-	-	-	-	-	-	-	-	-
Miscellaneous	4	4	24	45	52	30	11	170	<0.1
Capital									
Transportation	248	4,652	9,300	25,142	19,607	21,594	8,262	88,805	1.7
Equipment	-	5,497	18,523	125,039	198,464	321,202	202,110	870,835	16.4
Furniture	432	647	1,231	3,220	2,186	2,283	1,517	11,517	0.2
Total costs by input									
Recurrent	7,526	209,100	835,821	1,130,735	969,548	834,239	338,060	4,325,030	81.7
Capital	680	10,797	29,053	153,401	220,257	345,080	211,889	971,158	18.3
Total	8,207	219,896	864,875	1,284,136	1,189,805	1,179,319	549,950	5,296,188	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

6.1.3 AB-CC 3: BCC Development and Execution

The third AB-CC included activities to develop and implement the BCC strategy and incurred US$4.7 million in costs over the duration of the program (**Table 6.6**). The formative research (sub-AB-CC 3.1a) was the only start-up activity implemented in 2009. In 2010, start-up activities included the continuation of formative research, the development of key messages from the formative research (sub-AB-CC 3.1b), development of BCC lessons (sub AB-CC 3.1c), the development and production of flip charts (sub AB-CC 3.2b), publicity sign development and production (sub AB-CC 3.2e), the development of BCC reports (sub AB-CC 3.2f), and the design of the field technicians' typical workday (sub-AB-CC 3.3b). Start-up activities accounted for 26.5 percent of total AB-CC 3 costs.

All activities in AB-CC 3, with the exception of formative research (sub-AB-CC 3.1a), incurred post-start-up costs. The delivery of BCC lessons (sub-AB-CC 3.3c) was the most expensive component, at 19.2 percent of total AB-CC 3 costs. The second highest cost was monthly recipe demonstrations (sub-AB-CC 3.3d), which incurred 19.1 percent of total costs. Following the first year of implementation, costs steadily increased before plateauing in 2013—the year in which the number of fieldworkers and enrolled beneficiaries peaked.

The costs of AB-CC 3 can be further disaggregated by input costs (**Table 6.7**). Personnel costs accounted for the overwhelming share (63.3 percent) of total input costs, given the labor-intensive tasks of delivering the BCC strategy. Travel for program staff, in this case to deliver BCC lessons, accounted for the second largest share (11.6 percent) of total input costs. Nearly 91 percent of all input costs for AB-CC 3 were recurrent and a substantial percentage of the annual costs of implementation.

Table 6.6 AB-CC 3: BCC costs, *PROCOMIDA*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
3.1 Development of BCC strategy									
3.1a Formative research									
Start-up	25,193	54,727	54,727	54,727	54,727	54,727	54,727	353,553	7.5
Post-start-up	-	-	-	-	-	-	-	-	-
Total	25,193	54,727	54,727	54,727	54,727	54,727	54,727	353,553	7.5
3.1b Development of key messages									
Start-up	-	8,267	17,089	17,280	17,280	17,280	17,280	94,477	2.0
Post-start-up	-	-	-	-	-	-	-	-	-
Total	-	8,267	17,089	17,280	17,280	17,280	17,280	94,477	2.0
3.2 Development of BCC materials									
3.2a Development of lessons									
Start-up	-	6,438	16,542	18,417	46,037	46,037	46,037	179,508	3.8
Post-start-up	-	-	-	-	-	67,706	12,941	80,647	1.7
Total	-	6,438	16,542	18,417	46,037	113,743	58,978	260,155	5.5
3.2b Development and production of flip charts									
Start-up	-	7,549	32,342	36,473	57,818	57,818	57,818	249,817	5.3
Post-start-up	-	-	-	-	-	28,045	29,052	57,097	1.2
Total	-	7,549	32,342	36,473	57,818	85,863	86,870	306,913	6.5
3.2c Radio spots									
Start-up	-	-	917	1,719	3,098	3,098	3,098	11,929	0.3
Post-start-up	-	-	-	-	-	7,517	13,133	20,649	0.4
Total	-	-	917	1,719	3,098	10,614	16,231	32,579	0.7
3.2d Poster production									
Start-up	-	-	1,167	1,167	1,167	1,167	1,167	5,836	0.1
Post-start-up	-	-	-	-	-	6,947	32,956	39,903	0.8
Total	-	-	1,167	1,167	1,167	8,115	34,123	45,739	1.0
3.2e Publicity sign development and production									
Start-up	-	755	6,072	12,301	31,574	31,574	31,574	113,850	2.4
Post-start-up	-	-	-	-	-	31,076	577	31,652	0.7
Total	-	755	6,072	12,301	31,574	62,650	32,151	145,502	3.1
3.2f BCC reports									
Start-up	-	669	7,569	10,983	18,385	18,385	18,385	74,377	1.6
Post-start-up	-	-	-	-	-	11,686	11,636	23,321	0.5

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
Total	-	669	7,569	10,983	18,385	30,071	30,021	97,698	2.1
3.3 Establishment of groups for delivery of BCC lessons									
3.3a Selection, training, and role of leader mothers									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	1,992	8,908	33,022	9,919	16,621	-	70,462	1.5
Total	-	1,992	8,908	33,022	9,919	16,621	-	70,462	1.5
3.3b Design of typical workday									
Start-up	-	34,264	34,264	34,264	34,264	34,264	34,264	205,584	4.4
Post-start-up	-	-	33,958	-	-	-	80,413	114,371	2.4
Total	-	34,264	68,222	34,264	34,264	34,264	114,677	319,955	6.8
3.3c Delivery of BCC lessons									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	60,555	165,080	215,887	231,177	156,681	75,822	905,201	19.2
Total	-	60,555	165,080	215,887	231,177	156,681	75,822	905,201	19.2
3.3d Demonstrating monthly recipe to leader mothers									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	17,052	176,266	235,093	285,325	175,977	10,187	899,899	19.1
Total	-	17,052	176,266	235,093	285,325	175,977	10,187	899,899	19.1
3.3e Making home visits to beneficiaries									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	14,044	93,511	101,926	104,762	113,078	11,709	439,031	9.3
Total	-	14,044	93,511	101,926	104,762	113,078	11,709	439,031	9.3
3.4 Recipe development and *Crece Bien*									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	-	85,685	108,049	265,333	149,389	23,031	631,487	13.4
Total	-	-	85,685	108,049	265,333	149,389	23,031	631,487	13.4
3.5 Model gardens									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	-	-	56,074	39,807	16,787	7,655	120,322	2.5
Total	-	-	-	56,074	39,807	16,787	7,655	120,322	2.5
Total									
Start-up	25,193	112,669	170,689	187,330	264,350	264,350	264,350	1,288,931	27.3
Post-start-up	-	93,643	563,408	750,051	936,323	781,509	309,109	3,434,043	72.7
Total	25,193	206,312	734,096	937,381	1,200,673	1,045,859	573,459	4,722,974	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 6.7 AB-CC 3: BCC input costs, *PROCOMIDA*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent									
Personnel	3,155	137,177	542,181	636,987	670,401	693,370	307,299	2,990,569	63.3
Materials and supplies	11,737	21,838	26,505	30,004	28,604	29,969	24,805	173,463	3.7
Media	-	-	-	-	-	3,334	10,811	14,144	0.3
Transportation	78	9,156	49,549	55,159	59,161	12,151	23,834	209,088	4.4
Maintenance	29	2,909	3,784	4,054	4,485	6,455	3,474	25,190	0.5
Utilities	21	1,358	5,858	12,691	12,892	14,691	5,888	53,399	1.1
Rent	9	285	39,828	21,753	21,435	22,977	15,006	121,293	2.6
Travel for program staff	412	10,024	19,996	102,096	312,228	55,684	47,646	548,087	11.6
Trainings for staff and service providers	-	105	3,233	3,082	(1,260)	15,677	11,124	31,962	0.7
Sub-grants	-	-	-	-	-	-	-	-	-
Consultations	9,106	14,556	21,569	16,317	16,317	16,317	16,317	110,498	2.3
Miscellaneous	-	-	4	25	92	76	19	217	<0.1
Capital									
Transportation	609	7,082	14,091	35,380	37,374	43,832	44,797	183,166	3.9
Equipment	-	1,474	6,444	17,614	35,164	126,887	60,103	247,686	5.2
Furniture	37	347	1,054	2,217	3,781	4,440	2,336	14,212	0.3
Total costs by input									
Recurrent	24,548	197,408	712,507	882,170	1,124,355	870,700	466,223	4,277,910	90.6
Capital	646	8,903	21,589	55,212	76,318	175,159	107,236	445,064	9.4
Total	25,193	206,312	734,096	937,381	1,200,673	1,045,859	573,459	4,722,974	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

6.1.4 AB-CC 4: Institutional Strengthening of Health Services

The fourth AB-CC, which included activities related to the institutional strengthening of the health convergence centers, incurred US$3.3 million over the duration of the program (**Table 6.8**). All activities with start-up costs incurred them in 2010. Start-up activities contributed to less than 1 percent of total AB-CC 4 costs.

All activities in AB-CC 4 incurred post-start-up costs. Ensuring that NGOs responsible for the health convergence centers adhered to cooperation agreements (sub-AB-CC 4.3e) was the most costly sub-AB-CC, making up 33.5 percent of total AB-CC 4 costs. Monitoring achievements of investment plan management (sub-AB-CC 4.2g) accounted for the second largest share (9.1 percent) of total input costs. Costs for AB-CC 4 quickly increased after the first year of implementation and peaked in 2013 as more activities were implemented and more beneficiaries enrolled.

The costs of AB-CC 4 can be further disaggregated by input costs (**Table 6.9**). Personnel costs for meetings and the training, monitoring, and supervision of health workers accounted for the largest share (41.9 percent) of total input costs. Sub-grants accounted for the second highest share (24.5 percent), and included monthly payments to health convergence centers for program implementation and the purchase of supplies.

Table 6.8 AB-CC 4: Institutional strengthening of health services costs, *PROCOMIDA*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
4.1 Improved communication									
4.1a Assess communication barriers between vulnerable populations and PSSs									
Start-up	-	699	699	699	699	699	699	4,192	0.1
Post-start-up	-	-	31,682	21,258	53,564	46,411	40,591	193,506	5.9
Total	-	699	32,381	21,956	54,262	47,109	41,290	197,698	6.0
4.1b Conduct quarterly meetings at health convergence centers									
Start-up	-	417	417	417	417	417	417	2,499	0.1
Post-start-up	-	-	24,980	23,764	33,673	35,778	19,100	137,294	4.2
Total	-	417	25,396	24,180	34,089	36,194	19,516	139,793	4.3
4.2 Training and provision of equipment									
4.2a Institutional assessment (ISTAR)									
Start-up	-	523	523	523	523	523	523	3,137	0.1
Post-start-up	-	-	-	2,267	-	-	-	2,267	0.1
Total	-	523	523	2,790	523	523	523	5,404	0.2
4.2b General PSS assessment									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	-	2,145	2,267	4,644	18,963	8,158	36,176	1.1
Total	-	-	2,145	2,267	4,644	18,963	8,158	36,176	1.1
4.2c Standardization of weight and height									
Start-up	-	2,062	2,062	2,062	2,062	2,062	2,062	12,374	0.4
Post-start-up	-	-	10,435	20,530	37,297	74,840	14,002	157,105	4.8
Total	-	2,062	12,498	22,593	39,359	76,903	16,064	169,479	5.2
4.2d Train EBSs in BCC lessons									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	16,111	61,091	52,544	26,036	24,686	16,945	197,412	6.0
Total	-	16,111	61,091	52,544	26,036	24,686	16,945	197,412	6.0
4.2e Train FCs in BCC lessons									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	646	40,668	75,713	57,548	56,338	53,571	284,485	8.7
Total	-	646	40,668	75,713	57,548	56,338	53,571	284,485	8.7
4.2f Aid PSS educators and leader mothers									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	1,539	33,299	6,282	13,384	12,664	25,775	92,944	2.8
Total	-	1,539	33,299	6,282	13,384	12,664	25,775	92,944	2.8
4.2g Investment plan management									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	5,211	55,308	37,929	88,397	64,868	44,484	296,197	9.1

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
Total	-	5,211	55,308	37,929	88,397	64,868	44,484	296,197	9.1
4.2h PSS educators monitoring of beneficiaries and leader mothers									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	-	788	2,460	12,503	1,426	-	17,178	0.5
Total	-	-	788	2,460	12,503	1,426	-	17,178	0.5
4.3 Supervision and monitoring									
4.3a Monitoring achievements of health convergence centers' institutional strengthening plans									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	5,168	26,858	11,430	61,796	79,271	43,650	228,173	7.0
Total	-	5,168	26,858	11,430	61,796	79,271	43,650	228,173	7.0
4.3b Monitoring height and weight growth									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	-	15,527	25,574	37,348	47,204	60,050	185,702	5.7
Total	-	-	15,527	25,574	37,348	47,204	60,050	185,702	5.7
4.3c Follow-up and support of malnourished children									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	-	16,474	18,610	24,502	17,291	15,083	91,959	2.8
Total	-	-	16,474	18,610	24,502	17,291	15,083	91,959	2.8
4.3d Monitoring implementation of BCC lessons by beneficiaries									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	646	35,448	39,326	94,447	40,223	21,610	231,701	7.1
Total	-	646	35,448	39,326	94,447	40,223	21,610	231,701	7.1
4.3e Adhering to cooperative agreements									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	64,611	186,591	229,633	296,822	259,085	57,786	1,094,529	33.5
Total	-	64,611	186,591	229,633	296,822	259,085	57,786	1,094,529	33.5
Total									
Start-up	-	3,700	3,700	3,700	3,700	3,700	3,700	22,202	0.7
Post-start-up	-	93,932	541,296	569,589	841,960	779,048	420,804	3,246,630	99.3
Total	-	97,632	544,996	573,290	845,660	782,749	424,504	3,268,831	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 6.9 AB-CC 4: Institutional strengthening of health services input costs, *PROCOMIDA*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent									
Personnel	-	41,150	209,562	222,402	315,957	380,802	200,129	1,370,002	41.9
Materials and supplies	-	3,692	8,043	8,161	6,468	3,956	5,514	35,834	1.1
Media	-	-	-	-	-	-	-	-	-
Transportation	-	4,302	36,932	26,271	38,760	25,443	8,012	139,720	4.3
Maintenance	-	2,587	2,455	1,640	2,254	3,252	657	12,845	0.4
Utilities	-	2,745	7,546	10,651	11,142	10,625	4,403	47,111	1.4
Rent	-	419	40,062	11,643	10,508	9,106	2,702	74,440	2.3
Travel for program staff	-	4,356	15,865	28,758	119,991	18,724	21,854	209,549	6.4
Trainings for staff and service providers	-	1,769	50,084	21,778	36,140	33,231	25,645	168,646	5.2
Sub-grants	-	29,897	141,438	198,308	226,637	182,959	23,142	802,381	24.5
Consultations	-	-	-	-	-	-	-	-	-
Miscellaneous	-	193	5	228	112	98	34	669	<0.1
Capital									
Transportation	-	2,960	9,266	6,246	25,581	21,479	20,860	86,393	2.6
Equipment	-	2,993	22,621	35,515	48,964	89,608	108,929	308,630	9.4
Furniture	-	568	1,117	1,689	3,146	3,467	2,623	12,611	0.4
Total costs by input									
Recurrent	-	91,110	511,992	529,839	767,969	668,195	292,092	2,861,197	87.5
Capital	-	6,522	33,003	43,450	77,691	114,554	132,412	407,634	12.5
Total	-	97,632	544,995	573,290	845,660	782,749	424,504	3,268,831	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

6.1.5 AB-CC 5: Monitoring and Evaluation

The fifth AB-CC (monitoring and evaluation) incurred US$3.0 million in costs over the duration of the program (**Table 6.10**). Start-up activities included planning activities (sub-AB-CC 5.1), as well as the development and implementation of a baseline survey (sub-AB-CC 5.3a) and a midline survey (sub-AB-CC 5.4a), and constituted 31.5 percent of total AB-CC 5 costs.

Of the activities in AB-CC 5, monitoring the typical workday of *PROCOMIDA* field technicians (sub-AB-CC 5.2b) was the most costly, making up 18.0 percent of total AB-CC 5 costs. Evaluation activities for the baseline, (sub-AB-CC 5.3a), midline (sub-AB-CC 5.3b), and endline (sub-AB-CC 5.3c) surveys incurred the next highest costs, at 15.0 percent, 16.0 percent, and 11.7 percent of total AB-CC 5 costs, respectively. These evaluation activities required hiring consultants to design the surveys, hire and train enumerators, and write the reports. Total costs for AB-CC 5 peaked in 2012 but remained high for the duration of the program, as monitoring and evaluation activities were implemented each year.

The costs of AB-CC 5 can be further disaggregated by input costs (**Table 6.11**). Personnel costs accounted for the majority (56.5 percent) of total inputs costs, as most activities included in-person monitoring of field staff by monitoring and evaluation technicians. Other recurrent costs, which included hiring consultants for evaluation activities, made up roughly one-fifth of total input costs.

Table 6.10 AB-CC 5: Monitoring and evaluation costs, *PROCOMIDA*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
5.1 Planning									
Start-up	2,075	2,075	2,075	2,075	2,075	2,075	2,075	14,525	0.5
Post-start-up	-	34,318	50,340	78,978	50,975	37,830	25,207	277,649	9.2
Total	2,075	36,393	52,415	81,053	53,050	39,905	27,282	292,174	9.7
5.2 Monitoring									
5.2a Discussing results									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	18,788	46,670	34,787	37,822	41,113	33,959	213,138	7.1
Total	-	18,788	46,670	34,787	37,822	41,113	33,959	213,138	7.1
5.2b Monitoring the typical work day of PROCOMIDA technicians									
Start-up	-	-	-	-	-	-	-	-	
Post-start-up	-	9,422	98,101	103,139	154,090	96,426	80,634	541,812	18.0
Total	-	9,422	98,101	103,139	154,090	96,426	80,634	541,812	18.0
5.2c Home visits by monitoring and evaluation technicians									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	3,641	32,555	18,301	19,364	16,426	8,904	99,192	3.3
Total	-	3,641	32,555	18,301	19,364	16,426	8,904	99,192	3.3
5.2d Monitoring of leader mother visits to beneficiaries' homes									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	-	11,809	9,039	1,081	1,282	1,947	25,158	0.8
Total	-	-	11,809	9,039	1,081	1,282	1,947	25,158	0.8
5.2e Additional interviews with key informants on program activities									
Start-up	-	-	-	-	-	-	-	-	
Post-start-up	-	-	2,114	6,034	9,087	15,959	804	33,998	1.1
Total	-	-	2,114	6,034	9,087	15,959	804	33,998	1.1
5.2f Monitoring and follow-up of trainings									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	-	5,260	1,395	6,306	15,008	8,785	36,754	1.2
Total	-	-	5,260	1,395	6,306	15,008	8,785	36,754	1.2
5.2g Evaluation of PSS data									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	-	11,545	6,615	7,849	6,036	5,469	37,514	1.2
Total	-	-	11,545	6,615	7,849	6,036	5,469	37,514	1.2

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
5.2h Monitoring activities at unspecified times									
Start-up	-	-	-	-	-	-	-	-	
Post-start-up	-	-	16,594	9,568	45,877	32,844	19,582	124,466	4.1
Total	-	-	16,594	9,568	45,877	32,844	19,582	124,466	4.1
5.2i Annual monitoring									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	143	95,526	37,847	53,367	73,857	55,176	315,917	10.5
Total	-	143	95,526	37,847	53,367	73,857	55,176	315,917	10.5
5.3 Evaluation									
5.3a Baseline survey									
Start-up	5,812	65,079	75,911	75,911	75,911	75,911	75,911	450,449	15.0
Post-start-up	-	-	-	-	-	-	-	-	-
Total	5,812	65,079	75,911	75,911	75,911	75,911	75,911	450,449	15.0
5.3b Midline survey									
Start-up	-	-	-	88,118	131,336	131,336	131,336	482,127	16.0
Post-start-up	-	-	-	-	-	-	-	-	-
Total	-	-	-	88,118	131,336	131,336	131,336	482,127	16.0
5.3c Endline survey									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	-	-	-	-	69,428	281,980	351,407	11.7
Total	-	-	-	-	-	69,428	281,980	351,407	11.7
Total									
Start-up	7,887	67,154	77,986	166,105	209,323	209,323	209,323	947,101	31.5
Post-start-up	-	66,313	370,515	305,704	385,818	406,209	522,446	2,057,005	68.5
Total	7,887	133,467	448,501	471,809	595,140	615,531	731,769	3,004,106	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 6.11 AB-CC 5: Monitoring and evaluation input costs, *PROCOMIDA*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent									
Personnel	2,827	61,000	230,825	303,380	342,237	414,873	343,517	1,698,658	56.5
Materials and supplies	14	2,118	6,623	3,593	4,583	4,240	8,636	29,807	1.0
Media	-	-	-	-	-	-	-	-	-
Transportation	29	6,579	45,774	27,289	30,908	18,648	9,811	139,037	4.6
Maintenance	53	3,115	420	1,083	2,356	2,725	1,167	10,919	0.4
Utilities	9	1,367	6,007	5,898	7,781	8,457	3,973	33,491	1.1
Rent	16	292	50,979	11,156	10,048	9,553	4,665	86,709	2.9
Travel for program staff	277	7,162	17,332	26,918	75,166	19,341	17,045	163,242	5.4
Trainings for staff and service providers	-	3,603	9,750	-	-	-	-	13,353	0.4
Sub-grants	-	-	-	-	-	-	-	-	-
Consultations	4,016	42,248	66,895	81,544	99,078	112,924	315,772	722,477	24.0
Miscellaneous	349	349	370	433	559	394	378	2,834	0.1
Capital									
Transportation	186	3,764	8,334	6,096	9,768	13,542	12,858	54,548	1.8
Equipment	-	1,486	4,237	4,255	9,788	8,884	11,103	39,754	1.3
Furniture	111	385	955	164	2,868	1,950	2,843	9,276	0.3
Total costs by input									
Recurrent	7,590	127,832	434,975	461,294	572,716	591,155	704,965	2,900,526	96.6
Capital	297	5,635	13,526	10,516	22,424	24,377	26,804	103,579	3.4
Total	7,887	133,467	448,501	471,809	595,140	615,531	731,769	3,004,106	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

6.1.6 AB-CC 6: Training and Supervision of Program Staff

The sixth AB-CC included staff training and supervision, and the total cost of implementing AB-CC 6 over the duration of the program was US$1.5 million (**Table 6.12**).

Training field technicians in BCC activities (sub-AB-CC 6.1) accounted for three-quarters (75.7 percent) of total AB-CC 6 costs. Even though trainings were conducted for staff members who worked in all other sub-AB-CCs, none were conducted with as many staff members or as frequently as were BCC trainings. On average, 100 *PROCOMIDA* staff members received BCC training each month, from 2010 through the end of program implementation. Total AB-CC 6 costs peaked in 2013—the year in which beneficiary enrollment was highest and *PROCOMIDA* staff received nonviolent communication training.

The cost of AB-CC 6 can be further disaggregated by input costs (**Table 6.13**). Whereas personnel costs contributed to the largest share (40.8 percent) of costs, other costs such as trainings for staff (23.2 percent) and travel for program staff (18.8 percent) accounted for the next two largest shares of total input costs.

Table 6.12 AB-CC 6: Training and supervision of program staff costs, *PROCOMIDA*

Sub-AB-CC	2000 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
6.1 BCC staff training									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	104,992	174,268	260,632	295,978	208,752	87,773	1,132,395	75.7
Total	-	104,992	174,268	260,632	295,978	208,752	87,773	1,132,395	75.7
6.2 Monitoring and evaluation staff training									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	499	9,563	19,519	18,883	15,301	10,506	74,271	5.0
Total	-	499	9,563	19,519	18,883	15,301	10,506	74,271	5.0
6.3 Institutional strengthening staff training									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	1,606	14,010	13,072	9,300	7,695	3,216	48,898	3.3
Total	-	1,606	14,010	13,072	9,300	7,695	3,216	48,898	3.3
6.4 Systematic information management staff training									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	2,719	32,404	14,207	27,154	9,986	3,666	90,135	6.0
Total	-	2,719	32,404	14,207	27,154	9,986	3,666	90,135	6.0
6.5 Nonviolent communication training									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	-	8,902	-	140,685	-	-	149,587	10.0
Total	-	-	8,902	-	140,685	-	-	149,587	10.0
Total									
Start-up	-	-	-	-	-	-	-	-	-
Post-start-up	-	109,816	239,147	307,431	492,000	241,733	105,161	1,495,287	100.0
Total	-	109,816	239,147	307,431	492,000	241,733	105,161	1,495,287	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 6.13 AB-CC 6: Training and supervision of program staff input costs, *PROCOMIDA*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent									
Personnel	-	56,037	111,998	130,018	155,894	118,181	38,007	610,136	40.8
Materials and supplies	-	2,607	4,059	3,035	3,359	35,400	433	48,893	3.3
Media	-	-	-	-	-	-	-	-	-
Transportation	-	3,824	11,363	12,734	14,182	8,328	2,375	52,808	3.5
Maintenance	-	3,219	1,443	713	1,559	1,362	129	8,425	0.6
Utilities	-	1,350	3,198	4,324	6,097	4,535	736	20,241	1.4
Rent	-	309	29,875	7,205	6,635	4,171	474	48,669	3.3
Travel for program staff	-	7,340	31,262	21,063	204,620	7,458	9,204	280,948	18.8
Trainings for staff and service providers	-	30,847	39,547	118,363	82,014	33,719	42,308	346,798	23.2
Sub-grants	-	-	-	-	-	-	-	-	-
Consultations	-	-	-	-	-	-	-	-	-
Miscellaneous	-	-	2	-	54	5	-	62	<0.1
Capital									
Transportation	-	2,717	3,496	5,341	8,206	8,123	7,042	34,926	2.3
Equipment	-	1,210	2,403	3,829	7,822	19,282	3,806	38,351	2.6
Furniture	-	354	500	804	1,558	1,168	647	5,031	0.3
Total costs by input									
Recurrent	-	105,535	232,748	297,456	474,414	213,160	93,666	1,416,979	94.8
Capital	-	4,281	6,399	9,975	17,585	28,573	11,494	78,308	5.2
Total	-	109,816	239,147	307,431	492,000	241,733	105,161	1,495,287	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

6.1.7 AB-CC 7: Advocacy, Promotion, and Social Mobilization

The seventh AB-CC included activities for advocacy, promotion, and social mobilization with local, regional, and national entities. The total cost of implementing it over the duration of the program was US$1.1 million (**Table 6.14**). Start-up activities for all sub-AB-CCs began in 2009 and continued in 2010 for HCAs (sub-AB-CC 7.1), sensitization and local approval (sub-AB-CC 7.2), and permission to perform the study (sub-AB-CC 7.3). By 2011, all activities were post-start-up activities. Start-up activities constituted 28.6 percent of total AB-CC 7 costs.

Sensitization and local approval (sub-AB-CC 7.2) accounted for the largest share (35.6 percent) of total costs for AB-CC 7. Obtaining permission to perform the research component of the program (sub-AB-CC 7.3) and attending meetings and workshops with NGOs and government organizations (sub-AB-CC 7.4) were the next most costly activities, constituting 20.0 percent and 28.4 percent of total costs, respectively. Total AB-CC 7 costs were highest in 2012, as the program was actively seeking country agreements and approval from local communities in the early stages of program implementation.

The costs of AB-CC 7 can be further disaggregated by input costs (**Table 6.15**). Most activities required a substantial amount of time from management staff to develop and negotiate agreements with host countries and PSSs and to regularly engage, coordinate, and communicate with partner NGOs, government officials, and USAID. As a result, personnel costs made up the majority (66.7 percent) of total input costs.

Table 6.14 AB-CC 7: Advocacy, promotion, and social mobilization costs, *PROCOMIDA*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
7.1 Host country agreement									
Start-up	2,624	14,094	14,094	14,094	14,094	14,094	14,094	87,187	8.3
Post-start-up	-	-	20,407	28,586	12,380	7,009	12,950	81,332	7.7
Total	2,624	14,094	34,500	42,680	26,473	21,103	27,044	168,519	16.0
7.2 Sensitization and local approval									
Start-up	4,051	17,725	17,725	17,725	17,725	17,725	17,725	110,402	10.5
Post-start-up	-	-	40,945	77,694	58,594	53,132	34,049	264,413	25.1
Total	4,051	17,725	58,670	95,419	76,319	70,857	51,774	374,816	35.6
7.3 Permission to perform study									
Start-up	4,448	13,919	13,919	13,919	13,919	13,919	13,919	87,963	8.4
Post-start-up	-	-	25,612	37,847	14,347	10,597	34,123	122,525	11.6
Total	4,448	13,919	39,531	51,766	28,266	24,516	48,043	210,488	20.0
7.4 Meetings and workshops									
Start-up	2,151	2,151	2,151	2,151	2,151	2,151	2,151	15,060	1.4
Post-start-up	-	35,293	44,826	67,133	56,311	59,556	20,693	283,812	27.0
Total	2,151	37,445	46,978	69,284	58,462	61,708	22,845	298,872	28.4
Total									
Start-up	13,274	47,890	47,890	47,890	47,890	47,890	47,890	300,613	28.6
Post-start-up	-	35,293	131,790	211,259	141,631	130,294	101,816	752,082	71.4
Total	13,274	83,183	179,679	259,148	189,521	178,184	149,706	1,052,695	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 6.15 AB-CC 7: Advocacy, promotion, and social mobilization input costs, *PROCOMIDA*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent									
Personnel	7,868	57,312	113,849	197,183	126,687	110,742	88,188	701,828	66.7
Materials and supplies	2,530	3,918	14,307	14,240	3,822	15,895	24,072	78,784	7.5
Media	-	-	-	-	-	-	-	-	-
Transportation	60	3,111	9,568	9,710	16,302	24,317	2,275	65,343	6.2
Maintenance	148	2,217	1,569	1,199	1,165	1,021	815	8,135	0.8
Utilities	26	822	2,152	2,752	1,572	1,138	533	8,996	0.9
Rent	45	197	17,740	4,588	1,603	905	252	25,331	2.4
Travel for program staff	673	5,485	8,490	14,335	24,948	10,680	4,126	68,736	6.5
Trainings for staff and service providers	-	-	-	-	229	2,605	5,432	8,266	0.8
Sub-grants	-	-	-	-	-	-	-	-	-
Consultations	-	-	-	-	-	-	-	-	-
Miscellaneous	1,364	5,259	5,277	5,312	5,360	5,273	5,259	33,104	3.1
Capital									
Transportation	372	3,357	4,369	5,624	3,871	3,319	3,180	24,091	2.3
Equipment	-	1,251	1,888	3,274	2,902	1,880	14,983	26,180	2.5
Furniture	188	267	483	945	1,071	422	603	3,978	0.4
Total costs by input									
Recurrent	12,714	78,308	172,939	249,305	181,677	172,563	130,939	998,446	94.8
Capital	560	4,875	6,740	9,843	7,844	5,621	18,766	54,249	5.2
Total	13,274	83,183	179,679	259,148	189,521	178,184	149,706	1,052,695	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

6.1.8 AB-CC 8: Management, Planning, and Administration

The eighth AB-CC included program management, planning, and administration activities, and the total cost of implementing it over the duration of the program was US$4.4 million (**Table 6.16**). All activities incurred start-up costs in 2009, and with the exception of sub-AB-CC 8.3, all incurred post-start-up activities beginning in 2010 through the remainder of the program. Start-up activities constituted only 3.5 percent of total AB-CC 8 costs.

The procurement of program equipment and supplies was the most costly sub-AB-CC, constituting 36.8 percent of total AB-CC 8 costs. The management of offices and infrastructure (sub-AB-CC 8.4), human resources (sub-AB-CC 8.1), and headquarters support (sub-AB-CC 8.5) each accounted for roughly one-fifth of total costs. Total AB-CC 8 costs were highest in 2013 due to the greater need for headquarters support and human resources during peak enrollment of beneficiaries.

The costs of AB-CC 8 can be further disaggregated by input costs (**Table 6.17**). The program management, planning, and administration activities required considerable time for processing paperwork, reviewing accounts, and procuring inputs. Accordingly, more than two-thirds (69.4 percent) of total input costs were attributed to personnel costs.

Table 6.16 AB-CC 8: Management, planning, and administration costs, *PROCOMIDA*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
8.1 Human resources									
Start-up	5,104	5,104	5,104	5,104	5,104	5,104	5,104	35,727	0.8
Post-start-up	-	117,020	193,480	144,001	285,984	120,375	69,302	930,163	21.1
Total	5,104	122,124	198,584	149,105	291,088	125,479	74,406	965,890	21.9
8.2 Procurement									
Start-up	4,531	4,531	4,531	4,531	4,531	4,531	4,531	31,720	0.7
Post-start-up	-	381,283	302,089	322,722	248,308	244,862	88,860	1,588,124	36.0
Total	4,531	385,815	306,620	327,253	252,840	249,393	93,391	1,619,844	36.8
8.3 Pre-implementation logistics									
Start-up	1,215	1,215	1,215	1,215	1,215	1,215	1,215	8,508	0.2
Post-start-up	-	-	-	-	-	-	-	-	-
Total	1,215	1,215	1,215	1,215	1,215	1,215	1,215	8,508	0.2
8.4 Offices and infrastructure									
Start-up	5,433	5,433	5,433	5,433	5,433	5,433	5,433	38,033	0.9
Post-start-up	-	153,333	223,398	201,379	168,688	134,098	67,833	948,729	21.5
Total	5,433	158,766	228,831	206,812	174,122	139,531	73,266	986,762	22.4
8.5 Headquarters support									
Start-up	5,921	5,921	5,921	5,921	5,921	5,921	5,921	41,448	0.9
Post-start-up	-	20,364	67,113	111,409	271,351	258,965	56,000	785,202	17.8
Total	5,921	26,285	73,034	117,330	277,272	264,886	61,921	826,650	18.8
Total									
Start-up	22,205	22,205	22,205	22,205	22,205	22,205	22,205	155,436	3.5
Post-start-up	-	672,000	786,080	779,511	974,332	758,300	281,995	4,252,217	96.5
Total	22,205	694,205	808,285	801,716	996,537	780,505	304,200	4,407,653	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 6.17 AB-CC 8: Management, planning, and administration input costs, *PROCOMIDA*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent									
Personnel	13,171	526,166	502,724	551,962	668,059	591,658	205,872	3,059,610	69.4
Materials and supplies	440	24,818	73,260	40,444	40,792	11,322	7,496	198,571	4.5
Media	-	-	-	-	-	-	-	-	-
Transportation	621	6,207	11,161	17,271	16,462	6,517	2,964	61,205	1.4
Maintenance	1,004	16,078	8,116	3,855	8,780	8,175	3,267	49,274	1.1
Utilities	513	22,193	35,804	30,297	30,756	27,570	19,231	166,364	3.8
Rent	378	3,527	105,041	55,746	37,083	33,008	17,870	252,652	5.7
Travel for program staff	3,220	35,980	45,152	76,507	153,446	70,455	14,737	399,497	9.1
Trainings for staff and service providers	-	-	-	-	-	-	-	-	-
Sub-grants	-	-	-	-	-	-	-	-	-
Consultations	-	-	-	-	-	-	-	-	-
Miscellaneous	714	39,892	1,177	2,788	3,363	911	1,362	50,207	1.1
Capital									
Transportation	333	4,403	6,720	5,436	11,666	3,147	6,599	38,302	0.9
Equipment	-	7,745	11,775	11,173	18,196	18,101	17,271	84,261	1.9
Furniture	1,812	7,196	7,356	6,238	7,935	9,641	7,532	47,710	1.1
Total costs by input									
Recurrent	20,061	674,860	782,434	778,870	958,740	749,617	272,798	4,237,380	96.1
Capital	2,145	19,345	25,851	22,846	37,796	30,888	31,402	170,273	3.9
Total	22,205	694,205	808,285	801,716	996,537	780,505	304,200	4,407,653	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

6.1.9 AB-CC 9: Systematic Information Management

The ninth AB-CC, which accounted for systematic information management, incurred US$1.4 million in costs over the duration of the program (**Table 6.18**). Development of the program systems occurred between 2010 and 2013, during which all sub AB-CCs were start-up activities. Start-up activities constituted 79.0 percent of total program activity costs.

The management of beneficiary information (sub-AB-CC 9.2) was the most costly activity, making up 67.1 percent of total AB-CC 9 costs. The commodity tracking system (sub-AB-CC 9.1) incurred 18.5 percent of total costs of AB-CC 9. The costs of AB-CC 9 were highest in 2014.

The costs of AB-CC 9 can be further disaggregated by input costs (**Table 6.19**). Personnel costs contributed the largest share (53.7 percent) of total costs. This AB-CC required more equipment, such as computers, than other AB-CCs, but the database management, data entry, and data cleaning activities were also labor intensive. Other costs included travel for systematic information management staff to visit field sites and regional offices (11.1 percent) and rent for office space (10.7 percent) since the majority of personnel worked in the office.

Table 6.18 AB-CC 9: Systematic information management costs, *PROCOMIDA*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
9.1 Commodity tracking system									
Start-up	-	3,504	13,313	23,108	46,416	46,416	46,416	179,171	12.6
Post-start-up	-	-	-	-	-	39,878	45,284	85,162	6.0
Total	-	3,504	13,313	23,108	46,416	86,293	91,700	264,333	18.5
9.2 Beneficiary information management									
Start-up	-	14,744	50,731	98,529	214,836	214,836	214,836	808,511	56.7
Post-start-up	-	-	-	-	-	135,053	14,550	149,604	10.5
Total	-	14,744	50,731	98,529	214,836	349,889	229,386	958,114	67.1
9.3 Coverage									
Start-up	-	-	7,279	18,461	37,953	37,953	37,953	139,600	9.8
Post-start-up	-	-	-	-	-	44,194	20,690	64,884	4.5
Total	-	-	7,279	18,461	37,953	82,148	58,644	204,485	14.3
Total									
Start-up	-	18,248	71,323	140,098	299,204	299,204	299,204	1,127,282	79.0
Post-start-up	-	-	-	-	-	219,125	80,525	299,650	21.0
Total	-	18,248	71,323	140,098	299,204	518,329	379,729	1,426,932	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 6.19 AB-CC 9: Systematic information management input costs, *PROCOMIDA*

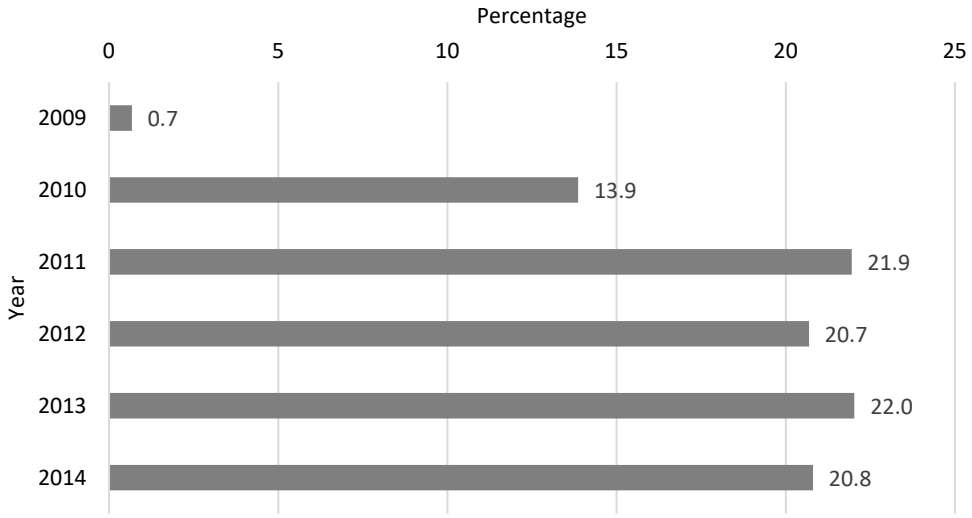
Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	2015 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent									
Personnel	-	12,422	32,440	74,027	148,875	280,339	218,407	766,508	53.7
Materials and supplies	-	1,106	1,993	4,482	9,573	16,553	10,609	44,316	3.1
Media	-	-	-	-	-	-	-	-	-
Transportation	-	101	5,052	10,130	18,149	35,271	18,398	87,101	6.1
Maintenance	-	1,511	2,330	2,863	5,267	9,629	5,583	27,184	1.9
Utilities	-	634	2,620	5,463	14,966	29,605	16,496	69,784	4.9
Rent	-	120	17,020	22,280	32,756	46,138	33,675	151,990	10.7
Travel for program staff	-	1,640	6,120	13,331	43,441	48,023	44,342	156,897	11.0
Trainings for staff and service providers	-	-	-	-	-	-	-	-	-
Sub-grants	-	-	-	-	-	-	-	-	-
Consultations	-	-	-	-	-	-	-	-	-
Miscellaneous	-	-	3	3	24	29	24	82	<0.1
Capital									
Transportation	-	53	1,497	2,245	7,695	14,767	8,475	34,730	2.4
Equipment	-	550	1,853	4,362	15,259	30,780	19,809	72,612	5.1
Furniture	-	113	396	911	3,200	7,196	3,912	15,729	1.1
Total costs by input									
Recurrent	-	17,534	67,578	132,579	273,050	465,586	347,534	1,303,861	91.4
Capital	-	715	3,745	7,519	26,154	52,743	32,196	123,071	8.6
Total	-	18,248	71,323	140,098	299,204	518,329	379,729	1,426,932	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

6.2 Actual Program Activity Costs: *Tubaramure,* Burundi

The total cost of implementing the *Tubaramure* program between 2009 and 2014 was US$23.6 million. Less than 1 percent of total program activity costs were incurred in the program's first year (**Figure 6.3**). Total program activity costs were similar across the final 4 years of the program. They initially increased in 2011 and 2012 as beneficiary enrollment grew, and they remained high, even as the number of beneficiaries decreased, because of close-out costs.

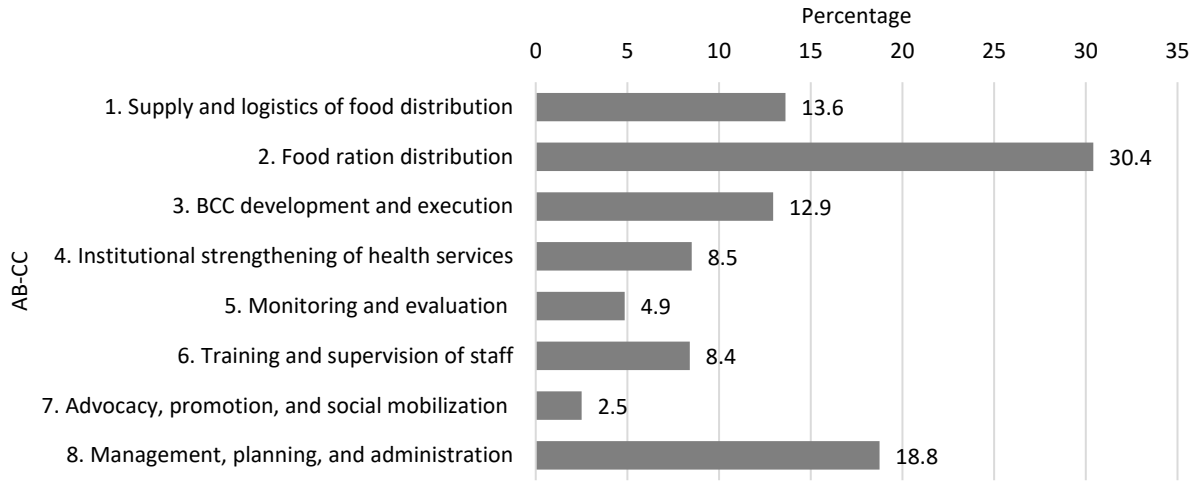
Figure 6.3 Percentage of total program activity costs by year, *Tubaramure*



Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

Food ration distributions (AB-CC 2) accounted for the largest share (30.4 percent) of total program activity costs, followed by management, planning, and administration (AB-CC 8) (18.8 percent); the supply and logistics of food distributions (AB-CC 1) (13.6 percent); and BCC development and execution (AB-CC 2) (12.9 percent) (**Figure 6.4)**. Of the three main components of the *Tubaramure* program, the combined cost of the supply and logistics of food ration distribution (AB-CC 1) and the distribution of food rations (AB-CC 2) accounted for almost half of program activity costs.

Figure 6.4 Percentage of total program activity costs per AB-CC, *Tubaramure*



Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

Personnel accounted for 66.8 percent of total input costs (**Table 6.20)**. Other categories accounting for more than 5 percent of total costs were recurrent transportation (9.3 percent) and capital equipment (7.1 percent). Materials and supplies were 4.6 percent of total costs.

Table 6.20 Total input costs by year, *Tubaramure*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent								
Personnel	139,471	2,543,084	3,712,404	3,278,921	3,415,047	2,697,978	15,786,904	66.8
Materials and supplies	7,419	80,289	53,750	264,593	243,791	428,170	1,078,012	4.6
Media	-	302	289	289	289	289	1,457	-
Transportation	1,653	270,070	686,903	417,408	393,560	433,915	2,203,509	9.3
Maintenance	46	15,489	94,376	152,752	132,439	197,386	592,488	2.5
Utilities	42	16,324	23,182	18,800	30,376	32,657	121,380	0.5
Rent	580	15,006	86,862	148,806	97,936	52,088	401,278	1.7
Travel for program staff	3,393	37,005	71,906	48,116	79,338	95,588	335,346	1.4
Trainings for staff and service providers	5,966	25,534	80,629	81,127	78,221	169,495	440,971	1.9
Sub-grants	-	-	-	-	-	-	-	-
Consultations	-	18,970	21,312	19,686	28,165	95,163	183,297	0.8
Miscellaneous	552	120,282	70,035	56,074	15,635	3,593	266,170	1.1
Capital								
Transport	-	93,734	99,003	97,143	98,360	100,336	488,576	2.1
Equipment	-	33,306	177,666	293,054	581,775	598,513	1,684,314	7.1
Furniture	-	5,592	6,938	10,261	9,094	10,039	41,925	0.2
Total costs by input								
Recurrent	159,121	3,142,355	4,901,648	4,486,571	4,514,796	4,206,321	21,410,813	90.6
Capital	-	132,632	283,607	400,458	689,229	708,888	2,214,814	9.4
Total	159,121	3,274,988	5,185,255	4,887,030	5,204,024	4,915,209	23,625,627	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

6.2.1 AB-CC 1: Supply and Logistics of Food Commodity Distribution

The total cost of procuring, storing, and coordinating the delivery of food rations (AB-CC 1) over the duration of the program was US$3.2 million (**Table 6.21**). Start-up costs accounted for just 2.9 percent of total AB-CC 1 costs. Among all activities, the coordination of food commodity transportation and distribution and the food commodity management and storage incurred the largest costs (36.0 percent and 31.9 percent of AB-CC 1 costs, respectively). Implementation costs were highest in 2011, 2012, and 2013, when peak beneficiary enrollment increased the frequency of food ration orders, storage, and transportation to distribution sites.

Capital costs amounted to just 3.7 percent of program input costs (**Table 6.22**). Not surprisingly, the largest share of input costs were personnel costs (41.3 percent) and transportation costs (45.8 percent).

Table 6.21 AB-CC 1: Supply and logistics of food distribution costs, *Tubaramure*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
1.1 Food commodity orders and imports								
1.1a Commodity orders								
Start-up	2,551	2,551	2,551	2,551	2,551	2,551	15,309	0.5
Post-start-up	-	17,094	31,163	16,660	31,938	27,584	124,439	3.9
Total	2,551	19,645	33,715	19,211	34,489	30,136	139,748	4.3
1.1b Food import								
Start-up	3,076	3,076	3,076	3,076	3,076	3,076	18,458	0.6
Post-start-up	-	46,867	163,984	234,970	63,844	79,486	589,151	18.3
Total	3,076	49,944	167,060	238,046	66,921	82,562	607,609	18.9
1.2 Commodity management and primary food storage								
Start-up	1,863	1,863	1,863	1,863	1,863	1,863	11,175	0.3
Post-start-up	-	115,344	179,950	107,285	434,928	176,815	1,014,322	31.5
Total	1,863	117,207	181,813	109,147	436,790	178,677	1,025,497	31.9
1.3 Transportation and food distribution coordination								
Start-up	1,224	1,224	1,224	1,224	1,224	1,224	7,346	0.2
Post-start-up	-	183,667	439,531	284,975	137,319	105,364	1,150,857	35.8
Total	1,224	184,891	440,755	286,200	138,543	106,589	1,158,203	36.0
1.4 Monetization								
Start-up	6,654	6,654	6,654	6,654	6,654	6,654	39,922	1.2
Post-start-up	-	-	71,468	34,493	69,920	71,518	247,398	7.7
Total	6,654	6,654	78,121	41,147	76,574	78,171	287,320	8.9
Total								
Start-up	15,368	15,368	15,368	15,368	15,368	15,368	92,211	2.9
Post-start-up	-	362,972	886,096	678,383	737,949	460,767	3,126,167	97.1
Total	15,368	378,341	901,465	693,751	753,317	476,135	3,218,377	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

Table 6.22 AB-CC 1: Supply and logistics of food distribution input costs, *Tubaramure*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent								
Personnel	15,368	160,291	320,544	220,502	342,189	269,736	1,328,630	41.3
Materials and supplies	-	428	1,704	3,134	4,280	24,101	33,647	1.0
Media	-	-	-	-	-	-	-	-
Transportation	-	183,065	521,631	348,617	308,230	111,858	1,473,396	45.8
Maintenance	-	693	6,913	4,759	15,169	14,935	42,469	1.3
Utilities	-	1,396	1,716	692	1,935	2,461	8,200	0.3
Rent	-	1,166	14,857	33,413	58,662	23,195	131,293	4.1
Travel for program staff	-	5,761	8,027	3,960	1,890	8,644	28,282	0.9
Trainings for staff and service providers	-	61	-	55,454	-	-	55,515	1.7
Sub-grants	-	-	-	-	-	-	-	-
Consultations	-	-	3,095	-	-	1,089	4,184	0.1
Miscellaneous	-	235	457	67	(2,661)[b]	(4,729)[b]	(6,633)[b]	-0.2
Capital								
Transport	-	12,651	9,597	9,333	10,343	11,587	53,510	1.7
Equipment	-	10,532	10,976	10,770	10,484	10,614	53,377	1.7
Furniture	-	2,063	1,949	3,051	2,795	2,643	12,503	0.4
Total costs by input								
Recurrent	15,368	353,094	878,942	670,597	729,695	451,291	3,098,987	96.3
Capital	-	25,246	22,523	23,154	23,623	24,844	119,390	3.7
Total	15,368	378,341	901,465	693,751	753,317	476,135	3,218,377	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

[b] Banking transactions credited to the account.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

6.2.2 AB-CC 2: Food Ration Distribution

The total cost of implementing AB-CC 2 (the distribution of food rations) was US$7.2 million (**Table 6.23**). Start-up activities accounted for 1.2 percent of total AB-CC 2 costs. The repackaging and distribution of food rations (sub-AB-CC 2.2c) was the most costly sub-AB-CC, making up 78.9 percent of the total AB-CC 2 costs. After the first year of implementation, AB-CC 2 costs continued to increase, as more beneficiaries were enrolled in the program. In 2012, when beneficiaries began graduating from the program, activity costs plateaued. When disaggregating by input costs, personnel costs accounted for the largest share (91.4 percent) of recurrent and total input costs for both start-up and post-start-up activities (**Table 6.24**).

Table 6.23 AB-CC 2: Food ration distribution costs, *Tubaramure*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
2.1 Community coordination								
Start-up	1,714	1,714	1,714	1,714	1,714	1,714	10,284	0.1
Post-start-up	-	16,829	31,490	-	-	-	48,319	0.7
Total	1,714	18,543	33,204	1,714	1,714	1,714	58,603	0.8
2.2 Repackaging and organization of food rations								
2.2a Selection of distribution sites								
Start-up	3,269	3,269	3,269	3,269	3,269	3,269	19,615	0.3
Post-start-up	-	-	-	-	-	-	-	0.0
Total	3,269	3,269	3,269	3,269	3,269	3,269	19,615	0.3
2.2b Management of distribution								
Start-up	1,515	1,515	1,515	1,515	1,515	1,515	9,091	0.1
Post-start-up	-	124,593	174,807	230,132	140,548	105,791	775,871	10.8
Total	1,515	126,109	176,322	231,648	142,064	107,306	784,963	10.9
2.2c Repackaging and distribution of rations								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	964,648	1,298,991	1,247,994	1,241,648	917,211	5,670,492	78.9
Total	-	964,648	1,298,991	1,247,994	1,241,648	917,211	5,670,492	78.9
2.3 Transportation								0.0
Start-up	-	4,868	4,868	4,868	4,868	4,868	24,341	0.3
Post-start-up	-	-	28,870	7,975	13,467	11,304	61,615	0.9
Total	-	4,868	33,738	12,843	18,335	16,172	85,957	1.2
2.4 Beneficiary enrollment								
2.4a Beneficiary cards								
Start-up	-	1,545	1,545	1,545	1,545	1,545	7,723	0.1
Post-start-up	-	-	-	-	2,725	-	2,725	<0.1
Total	-	1,545	1,545	1,545	4,269	1,545	10,448	0.1
2.4b Beneficiary enrollment lists								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	118,876	76,006	75,239	10,430	24,830	305,383	4.3
Total	-	118,876	76,006	75,239	10,430	24,830	305,383	4.3
2.4c Monitoring eligibility of beneficiaries								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	8,600	56,259	59,635	51,456	42,578	218,528	3.0
Total	-	8,600	56,259	59,635	51,456	42,578	218,528	3.0

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
2.5 Materials and supplies for food rations								
Start-up	-	3,394	3,394	3,394	3,394	3,394	16,972	0.2
Post-start-up	-	-	11,579	-	1,298	310	13,187	0.2
Total	-	3,394	14,973	3,394	4,692	3,704	30,159	0.4
Total								
Start-up	6,498	16,306	16,306	16,306	16,306	16,306	88,028	1.2
Post-start-up	-	1,233,546	1,678,002	1,620,975	1,461,573	1,102,024	7,096,120	98.8
Total	6,498	1,249,852	1,694,307	1,637,281	1,477,878	1,118,330	7,184,147	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

Table 6.24 AB-CC 2: Food ration distribution input costs, *Tubaramure*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent								
Personnel	6,498	1,185,785	1,545,808	1,445,654	1,381,769	1,001,741	6,567,256	91.4
Materials and supplies	-	12,748	2,619	16,708	5,602	12,355	50,033	0.7
Media	-	-	-	-	-	-	-	-
Transportation	-	21,955	35,438	4,576	4,435	29,441	95,845	1.3
Maintenance	-	2,021	22,489	60,923	12,573	12,369	110,375	1.5
Utilities	-	1,035	1,772	533	974	1,195	5,509	0.1
Rent	-	1,293	18,330	39,017	476	620	59,736	0.8
Travel for program staff	-	1,140	2,669	6,026	18,875	49	28,760	0.4
Trainings for staff and service providers	-	63	6	6	17	6	99	<0.1
Sub-grants	-	-	-	-	-	-	-	-
Consultations	-	-	-	-	-	502	502	<0.1
Miscellaneous	-	368	689	105	(3,572)[b]	103	(2,303)[b]	>-0.1
Capital								
Transport	-	22,306	20,422	19,489	14,844	15,271	92,333	1.3
Equipment	-	399	43,146	42,925	40,128	42,852	169,450	2.4
Furniture	-	739	920	1,320	1,756	1,820	6,554	0.1
Total costs by input								
Recurrent	6,498	1,226,408	1,629,820	1,573,547	1,421,150	1,058,387	6,915,810	96.3
Capital	-	23,444	64,487	63,734	56,729	59,944	268,337	3.7
Total	6,498	1,249,852	1,694,308	1,637,281	1,477,878	1,118,330	7,184,147	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

[b] Banking transactions credited to the account.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

6.2.3 AB-CC 3: BCC Development and Execution

The total cost of AB-CC 3, which included activities for the development and execution of the BCC strategy, was US$3.1 million (**Table 6.25**). The most costly of the start-up activities (29.0 percent of total AB-CC 3 costs) was the development of BCC modules, lesson plans, and the specific-age card; this sub-AB-CC was 43.2 percent of total AB-CC 3 costs. The training of LMs in LM care groups (26.2 percent) accounted for the second largest share of AB-CC 3 costs. The cost of AB-CC 3 gradually increased during the first 2 years of implementation, as BCC modules and materials were finalized and program staff began field visits. Costs continued to grow through the program years of implementation, since start-up costs were 34.5 percent of total program activity costs.

Nearly two-thirds of this AB-CC's costs were recurrent costs (**Table 6.26**), of which personnel costs (39.7 percent) and materials and supplies (12.7 percent) were the highest. The cost of capital equipment, which included the BCC modules, posters, and specific-age cards that the program had produced, accounted for 37.5 percent of total input costs and the largest share of capital costs.

Table 6.25 AB-CC 3: BCC development and execution costs, *Tubaramure*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
3.1 Formative research								
Start-up	9,588	9,588	9,588	9,588	9,588	9,588	57,528	1.9
Post-start-up	-	-	-	-	-	-	-	-
Total	9,588	9,588	9,588	9,588	9,588	9,588	57,528	1.9
3.2 Development of BCC materials								
3.2a Development of BCC modules, lesson plans, and specific-age card								
Start-up	1,163	19,846	68,902	266,118	266,118	266,118	888,264	29.0
Post-start-up	-	-	-	-	215,832	215,798	431,630	14.1
Total	1,163	19,846	68,902	266,118	481,950	481,915	1,319,894	43.2
3.2b Development and production of radio dramas								
Start-up	-	2,504	2,504	2,504	2,504	2,504	12,521	0.4
Post-start-up	-	-	19,358	6,547	36,244	32,336	94,486	3.1
Total	-	2,504	21,862	9,052	38,749	34,841	107,008	3.5
3.2c Development and production of poster materials								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	-	-	6,476	25,973	25,943	58,392	1.9
Total	-	-	-	6,476	25,973	25,943	58,392	1.9
3.3 Establishment of groups for the delivery of BCC lessons								
3.3a Training of leader mothers in leader mother care groups								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	111,603	151,221	137,305	224,398	175,728	800,254	26.2
Total	-	111,603	151,221	137,305	224,398	175,728	800,254	26.2
3.3b Registration and formation of beneficiary groups and selection of leader mothers								
Start-up	-	12,376	12,376	12,376	12,376	12,376	61,881	2.0
Post-start-up	-	-	7,624	3,262	-	-	10,886	0.4
Total	-	12,376	20,000	15,638	12,376	12,376	72,767	2.4
3.3c Training of beneficiaries in care groups								
Start-up	-	-	-	-	-	-	-	0.0
Post-start-up	-	-	-	10,442	23,810	32,240	66,491	2.2
Total	-	-	-	10,442	23,810	32,240	66,491	2.2
3.3d Supervision of beneficiaries by *Tubaramure* health promoters								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	46,337	53,457	70,380	27,669	30,035	227,879	7.5
Total	-	46,337	53,457	70,380	27,669	30,035	227,879	7.5
3.3e Home visits conducted by *Tubaramure* leader mothers								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	-	2,676	11,040	10,931	10,957	35,603	1.2
Total	-	-	2,676	11,040	10,931	10,957	35,603	1.2

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
3.4 Recipe development								
Start-up	1,458	4,641	6,792	6,792	6,792	6,792	33,265	1.1
Post-start-up	-	-	-	1,766	1,036	1,753	4,556	0.1
Total	1,458	4,641	6,792	8,558	7,828	8,545	37,821	1.2
3.5 Agricultural development								
3.5a Development of agricultural materials								
Start-up	-	452	452	452	452	452	2,262	0.1
Post-start-up	-	-	-	-	-	-	-	-
Total	-	452	452	452	452	452	2,262	0.1
3.5b Vegetable seed, fruit tree, and chicken distribution								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	-	90,097	85,271	12,788	58,708	246,864	8.1
Total	-	-	90,097	85,271	12,788	58,708	246,864	8.1
3.6 Savings and internal lending communities								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	-	12,085	11,414	637	1,499	25,635	0.8
Total	-	-	12,085	11,414	637	1,499	25,635	0.8
Total								
Start-up	12,209	49,408	100,615	297,830	297,830	297,830	1,055,722	34.5
Post-start-up	-	157,940	336,518	343,903	579,319	584,997	2,002,676	65.5
Total	12,209	207,348	437,133	641,734	877,149	882,827	3,058,398	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 6.26 AB-CC 3: BCC input costs, *Tubaramure*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent								
Personnel	6,592	169,742	291,477	318,506	245,581	182,390	1,214,288	39.7
Materials and supplies	79	2,205	3,927	110,540	114,746	155,733	387,230	12.7
Media	-	288	288	288	288	288	1,442	<0.1
Transportation	593	11,249	8,151	10,613	10,126	8,996	49,727	1.6
Maintenance	-	903	16,648	1,703	6,840	7,613	33,707	1.1
Utilities	-	223	960	432	1,434	1,886	4,935	0.2
Rent	-	603	2,679	2,865	2,382	2,158	10,687	0.3
Travel for program staff	1,889	2,035	2,599	2,679	2,978	4,161	16,340	0.5
Training for staff and service providers	3,042	10,317	27,738	12,754	32,376	38,194	124,422	4.1
Sub-grants	-	-	-	-	-	-	-	-
Consultations	-	249	249	249	249	823	1,817	0.1
Miscellaneous	14	408	224	2,397	220	266	3,528	0.1
Capital								
Transport	-	7,065	10,952	12,413	14,414	15,715	60,559	2.0
Equipment	-	1,877	70,949	165,901	445,173	464,261	1,148,161	37.5
Furniture	-	185	291	392	342	344	1,555	0.1
Total costs by input								
Recurrent	12,209	198,221	354,940	463,027	417,219	402,508	1,848,123	60.4
Capital	-	9,127	82,193	178,707	459,929	480,319	1,210,275	39.6
Total	12,209	207,348	437,133	641,734	877,149	882,827	3,058,398	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

6.2.4 AB-CC 4: Institutional Strengthening of Health Services

The total cost of the institutional strengthening of health services activities (AB-CC 4) was US$2.0 million (**Table 6.27**). Start-up activities accounted for 6.2 percent of total AB-CC 4 costs. Supporting PHAs and DHAs (which included the development of tools to conduct trainings on key health messages) was the most costly of the start-up activities. Post-start-up activities accounted for 93.8 percent of total AB-CC 4 costs. The monthly supervision of all health centers to evaluate the receipt of training and quality of health services, and the activities to support the financial and administrative tasks for all IMC activities, incurred the largest costs and accounted for about one-quarter of the total costs of this AB-CC. AB-CC 4 costs were highest in 2012, when numerous trainings and supervision visits were conducted.

Recurrent and capital costs for AB-CC 4 accounted for 86.1 percent and 13.9 percent of total costs, respectively (**Table 6.28**). Personnel accounted for 48.4 percent of the AB-CC's costs, and materials and supplies accounted for 17.4 percent. Capital equipment accounted for 10.7 percent of the total costs of AB-CC 4; the majority of the equipment was purchased for local health centers.

Table 6.27 AB-CC 4: Institutional strengthening of health services costs, *Tubaramure*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
4.1 Improved communication								
4.1a Strengthen communication between communities and health centers								
Start-up	-	2,918	2,918	2,918	2,918	2,918	14,589	0.7
Post-start-up	-	-	508	72,864	35,311	31,532	140,215	7.0
Total	-	2,918	3,426	75,781	38,229	34,450	154,805	7.7
4.1b Provincial-level support for IMC activities								
Start-up	6,538	6,538	6,538	6,538	6,538	6,538	39,228	2.0
Post-start-up	-	7,408	19,535	18,049	63,291	43,557	151,840	7.6
Total	6,538	13,946	26,073	24,587	69,829	50,095	191,069	9.5
4.2 Trainings and provision of equipment								
4.2a IMC support for PHAs and DHAs								
Start-up	-	10,384	10,384	10,384	10,384	10,384	51,918	2.6
Post-start-up	-	-	-	-	15,619	-	15,619	0.8
Total	-	10,384	10,384	10,384	26,003	10,384	67,538	3.4
4.2b IMC provision of materials and equipment								
Start-up	18	18	18	18	18	18	107	<0.1
Post-start-up	-	22,901	26,011	60,733	57,907	67,768	235,320	11.7
Total	18	22,919	26,029	60,750	57,925	67,786	235,427	11.7
4.2c IMC support for provincial health technicians, CHWs, and THPs								
Start-up	688	688	688	688	688	688	4,125	0.2
Post-start-up	-	16,171	37,899	-	60,656	96,955	211,681	10.5
Total	688	16,859	38,587	688	61,343	97,642	215,806	10.7
4.2d IMC support for nurses and nurse assistants								
Start-up	1,413	1,413	1,413	1,413	1,413	1,413	8,478	0.4
Post-start-up	-	35,288	26,681	56,718	1,296	-	119,982	6.0
Total	1,413	36,701	28,094	58,131	2,709	1,413	128,460	6.4
4.3 Supervision and monitoring								
4.3a IMC monthly supervisions								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	168	168	168	168	168	168	1,009	0.1
Total	-	108,667	165,402	122,344	63,412	23,452	483,277	24.0
4.3b Joint supervisions with the Ministry of Health	168	108,835	165,570	122,512	63,580	23,620	484,286	24.1
Start-up								
Post-start-up	-	903	903	903	903	903	4,516	0.2
Total	-	-	29,629	19,418	50	21,467	70,563	3.5
4.4 Finance and administration support								
Start-up	-	-	-	-	-	-	-	-

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
Post-start-up	-	181,670	5,150	157,548	48,060	64,826	457,255	22.8
Total	-	181,670	5,150	157,548	48,060	64,826	457,255	22.8
Total								
Start-up	8,824	23,029	23,029	23,029	23,029	23,029	123,970	6.2
Post-start-up	-	372,105	310,815	507,673	345,602	349,558	1,885,754	93.8
Total	8,824	395,135	333,844	530,702	368,632	372,587	2,009,724	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 6.28 AB-CC 4: Institutional strengthening of health services input costs, *Tubaramure*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent								
Personnel	1,226	221,972	153,349	252,516	163,157	180,965	973,185	48.4
Materials and supplies	7,217	54,937	35,146	130,316	80,492	41,519	349,628	17.4
Media	-	-	-	-	-	-	-	-
Transportation	89	10,044	32,236	351	8,627	2,271	53,618	2.7
Maintenance	46	4,043	3,726	11,582	7,431	3,619	30,447	1.5
Utilities	42	6,604	4,148	8,870	6,647	4,683	30,993	1.5
Rent	44	6,237	8,125	16,577	8,324	6,695	46,001	2.3
Travel for program staff	55	2,899	952	858	120	285	5,169	0.3
Trainings for staff and service providers	-	-	-	-	51	42,055	42,107	2.1
Sub-grants	-	-	-	-	-	-	-	-
Consultations	-	1,120	-	-	61	-	1,181	0.1
Miscellaneous	107	71,524	53,601	45,981	19,371	7,693	198,276	9.9
Capital								
Transport	-	11,213	13,033	12,347	12,834	11,495	60,923	3.0
Equipment	-	4,034	28,911	50,720	60,991	70,919	215,574	10.7
Furniture	-	507	619	584	526	387	2,623	0.1
Total costs by input								
Recurrent	8,824	379,380	291,282	467,051	294,281	289,786	1,730,604	86.1
Capital	0	15,754	42,562	63,651	74,351	82,801	279,120	13.9
Total	8,824	395,135	333,844	530,702	368,632	372,587	2,009,724	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

6.2.5 AB-CC 5: Monitoring and Evaluation

The total cost of AB-CC 5 (monitoring and evaluation) was US$1.1 million (**Table 6.29**). Start-up activities amounted to 15.8 percent of total AB-CC 5 costs. The program's monitoring activities made up the largest share of the post-start-up costs. Total costs for AB-CC 5 increased each year of implementation and peaked in 2014, when the endline survey was conducted.

Monitoring and evaluation activities incurred almost no capital costs (0.5 percent) (**Table 6.30**). Personnel costs made up the largest share (54.1 percent) of recurrent costs, and consultations made up the second largest share (14.5 percent).

Table 6.29 AB-CC 5: Monitoring and evaluation costs, *Tubaramure*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
5.1 Planning								
Start-up	-	3,501	3,501	3,501	3,501	3,501	17,505	1.5
Post-start-up	-	-	26,251	22,389	30,183	23,863	102,686	9.0
Total	-	3,501	29,752	25,890	33,684	27,365	120,192	10.5
5.2 Monitoring								
5.2a Quarterly monitoring								
Start-up	-	1,690	1,690	1,690	1,690	1,690	8,452	0.7
Post-start-up	-	-	54,264	31,895	42,573	66,672	195,404	17.0
Total	-	1,690	55,955	33,585	44,263	68,362	203,856	17.8
5.2b Monitoring food ration utilization								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	21,163	29,584	26,783	44,159	101,292	222,981	19.4
Total	-	21,163	29,584	26,783	44,159	101,292	222,981	19.4
5.2c Additional monitoring								
Start-up	-	-	3,110	3,110	3,110	3,110	12,441	1.1
Post-start-up	-	-	-	19,264	41,078	30,083	90,425	7.9
Total	-	-	3,110	22,374	44,189	33,194	102,867	9.0
5.2d Monitoring trigger Indicators								
Start-up	-	3,483	3,483	3,483	3,483	3,483	17,415	1.5
Post-start-up	-	-	45,322	43,909	53,508	69,176	211,914	18.5
Total	-	3,483	48,805	47,392	56,991	72,658	229,329	20.0
5.3 Evaluation								
5.3a Baseline survey								
Start-up	-	21,122	21,122	21,122	21,122	21,122	105,611	9.2
Post-start-up	-	-	-	-	-	-	-	-
Total	-	21,122	21,122	21,122	21,122	21,122	105,611	9.2
5.3b Midline survey								
Start-up	-	-	-	6,432	6,432	6,432	19,297	1.7
Post-start-up	-	-	-	-	17,339	-	17,339	1.5
Total	-	-	-	6,432	23,771	6,432	36,636	3.2
5.3c Endline survey								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	-	-	-	-	125,213	125,213	10.9
Total	-	-	-	-	-	125,213	125,213	10.9
Total								
Start-up	-	29,797	32,907	39,339	39,339	39,339	180,722	15.8
Post-start-up	-	21,163	155,422	144,240	228,839	416,298	965,961	84.2
Total	-	50,959	188,329	183,579	268,178	455,638	1,146,683	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 6.30 AB-CC 5: Monitoring and evaluation input costs, *Tubaramure*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent								
Personnel	-	29,880	143,161	148,223	164,870	134,654	620,787	54.1
Materials and supplies	-	37	599	47	4,222	23,993	28,898	2.5
Media	-	-	-	-	-	-	-	-
Transportation	-	261	5,234	3,161	15,090	86,871	110,617	9.6
Maintenance	-	198	6,850	4,871	15,936	34,648	62,502	5.5
Utilities	-	182	1,384	301	2,909	2,694	7,471	0.7
Rent	-	887	1,407	616	2,537	1,699	7,146	0.6
Travel for program staff	-	1,401	10,871	5,761	12,893	25,864	56,791	5.0
Trainings for staff and service providers	-	50	8	8	20,856	59,252	80,173	7.0
Sub-grants	-	-	-	-	-	-	-	-
Consultations	-	17,602	17,602	19,070	27,489	84,362	166,124	14.5
Miscellaneous	-	194	189	100	78	228	788	0.1
Capital								
Transport	-	-	26	33	37	237	335	<0.1
Equipment	-	164	846	1,196	1,095	952	4,254	0.4
Furniture	-	105	149	193	167	184	798	0.1
Total costs by input								
Recurrent	-	50,690	187,306	182,157	266,880	454,264	1,141,296	99.5
Capital	-	270	1,023	1,422	1,299	1,373	5,387	0.5
Total	-	50,959	186,065	183,579	268,179	454,405	1,143,188	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

6.2.6 AB-CC 6: Training and Supervision of Program Staff

The total cost of implementing AB-CC 6 (activities to train and supervise *Tubaramure* staff) over the duration of the program was 2.0 million USD (**Table 6.31**). Start-up activities accounted for 11.4% of total AB-CC 6 costs. Training field staff on BCC modules and specificage cards and training consortium staff on BCC components were the most costly start-up activities. The regular supervision of program staff and activities incurred the majority of post-start-up costs. The most costly activity under this AB-CC was the supervision of FH BCC supervisors and THPs, which accounted for 38.6 percent of total AB-CC 6 costs. Total costs for AB-CC 6 peaked in 2011, mainly due to the training of field staff on BCC modules and specific-age cards.

The costs of AB-CC 6 can be further disaggregated by input costs (**Table 6.32**). Capital costs made up 8.4 percent of total costs. Personnel costs accounted for the largest share (63.6 percent) of recurrent costs.

Table 6.31 AB-CC 6: Training and supervision of program staff costs, *Tubaramure*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
6.1 BCC training								
6.1a Training field staff on BCC modules and specific-age cards								
Start-up	-	13,651	13,651	13,651	13,651	13,651	68,255	3.4
Post-start-up	-	-	93,773	16,129	87,276	10,025	207,203	10.4
Total	-	13,651	107,424	29,780	100,927	23,676	275,458	13.9
6.1b Training of consortium staff on BCC components								
Start-up	8,016	8,016	8,016	8,016	8,016	8,016	48,094	2.4
Post-start-up	-	-	-	-	-	-	-	-
Total	8,016	8,016	8,016	8,016	8,016	8,016	48,094	2.4
6.1c Supervision of BCC supervisors and THPs								
Start-up	915	915	915	915	915	915	5,490	0.3
Post-start-up	-	140,719	169,320	147,851	154,871	147,409	760,171	38.3
Total	915	141,634	170,235	148,766	155,786	148,324	765,660	38.6
6.1d Training on agricultural methods								
Start-up	-	3,070	3,070	3,070	3,070	3,070	15,352	0.8
Post-start-up	-	-	-	-	-	-	-	-
Total	-	3,070	3,070	3,070	3,070	3,070	15,352	0.8
6.1e Recipe training		-						
Start-up	-	-	4,074	4,074	4,074	4,074	16,294	0.8
Post-start-up	-	-	-	-	-	-	-	-
Total	-	-	4,074	4,074	4,074	4,074	16,294	0.8
6.2 Monitoring and evaluation training and supervision								
6.2a Indicator training								
Start-up	-	2,000	2,000	2,000	2,000	2,000	10,001	0.5
Post-start-up	-	-	-	-	-	-	-	-
Total	-	2,000	2,000	2,000	2,000	2,000	10,001	0.5
6.2b Supervision of field staff								
Start-up	5,644	5,644	5,644	5,644	5,644	5,644	33,864	1.7
Post-start-up	-	32,521	55,838	55,588	62,029	35,831	241,806	12.2
Total	5,644	38,165	61,482	61,232	67,673	41,475	275,670	13.9
6.3 Institutional strengthening								
Start-up	-	830	1,070	1,070	1,070	1,070	5,109	0.3
Post-start-up	-	-	-	-	-	9,288	9,288	0.5
Total	-	830	1,070	1,070	1,070	10,358	14,397	0.7
6.4 Food ration distribution training and supervision								
6.4a Supervision of food ration distribution sites								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	23,153	69,538	82,393	69,455	91,815	336,356	16.9

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
Total	-	23,153	69,538	82,393	69,455	91,815	336,356	16.9
6.4b Supervision of end-use agents								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	16,801	34,081	26,308	32,011	33,938	143,138	7.2
Total	-	16,801	34,081	26,308	32,011	33,938	143,138	7.2
6.4c Training of food distribution site managers								
Start-up	-	4,824	4,824	4,824	4,824	4,824	24,118	1.2
Post-start-up	-	-	19,217	29,978	3,948	8,011	61,154	3.1
Total	-	4,824	24,040	34,802	8,771	12,834	85,271	4.3
Total								
Start-up	14,575	38,950	43,263	43,263	43,263	43,263	226,578	11.4
Post-start-up	-	213,195	441,767	358,248	409,589	336,316	1,759,115	88.6
Total	14,575	252,144	485,030	401,511	452,853	379,580	1,985,693	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 6.32 AB-CC 6: Training and supervision of program staff input costs, *Tubaramure*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent								
Personnel	10,042	180,566	301,857	251,809	298,475	219,956	1,262,705	63.6
Materials and supplies	-	1,784	2,644	2,851	12,158	24,040	43,478	2.2
Media	-	-	-	-	-	-	-	-
Transportation	383	19,820	45,865	17,793	25,755	31,260	140,876	7.1
Maintenance	-	2,468	26,601	50,867	17,673	20,755	118,364	6.0
Utilities	-	1,391	3,600	4,108	4,522	2,955	16,575	0.8
Rent	-	1,853	13,666	16,735	6,520	3,666	42,440	2.1
Travel for program staff	1,429	5,198	8,599	12,457	29,173	27,028	83,883	4.2
Trainings for staff and service providers	2,719	12,249	43,151	12,084	18,527	19,782	108,512	5.5
Sub-grants	-	-	-	-	-	-	-	-
Consultations	-	-	-	-	-	1,119	1,119	0.1
Miscellaneous	2	1,095	1,002	292	442	(1,324)[b]	1,509	0.1
Capital								
Transport	-	20,289	27,956	23,461	29,294	26,339	127,340	6.4
Equipment	-	4,862	8,670	7,527	8,941	2,566	32,566	1.6
Furniture	-	571	1,419	1,526	1,371	1,438	6,324	0.3
Total costs by input								
Recurrent	14,575	226,423	446,985	368,996	413,246	349,237	1,819,463	91.6
Capital	-	25,721	38,045	32,515	39,606	30,343	166,230	8.4
Total	14,575	252,144	485,030	401,511	452,853	379,580	1,985,693	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

[b] Banking transactions credited to the account.

6.2.7 AB-CC 7: Advocacy, Promotion, and Social Mobilization

With a total cost of US$ 0.6 million, AB-CC 7 (advocacy, promotion, and social mobilization activities) was a relatively small cost center (**Table 6.33**). Start-up activities constituted a fairly large proportion of the overall costs (19.0 percent). Main start-up and post-start-up activities were sensitization and local approval activities, plus meetings and workshops. Total AB-CC 7 costs were highest in 2011 and 2014, as sensitization activities, workshops, and meetings were conducted to share program information at the height of program implementation and enrollment, and toward the end of the program.

The share of capital costs was relatively small (2.9 percent) (**Table 6.34**). Personnel costs accounted for the largest share (79.6 percent) of total input costs.

Table 6.33 AB-CC 7: Advocacy, promotion, and social mobilization costs, *Tubaramure*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
7.1 Host country agreement								
Start-up	699	699	699	699	699	699	4,191	0.7
Post-start-up	-	-	-	-	-	-	-	-
Total	699	699	699	699	699	699	4,191	0.7
7.2 Sensitization and local approval								
Start-up	8,876	8,876	8,876	8,876	8,876	8,876	53,253	9.0
Post-start-up	-	32,987	25,242	21,721	33,773	87,985	201,709	34.1
Total	8,876	41,863	34,118	30,597	42,649	96,860	254,962	43.1
7.3 Permission to perform study								
Start-up	730	730	730	730	730	730	4,380	0.7
Post-start-up	-	-	-	-	-	-	-	-
Total	730	730	730	730	730	730	4,380	0.7
7.4 Meetings and workshops								
Start-up	8,439	8,439	8,439	8,439	8,439	8,439	50,635	8.6
Post-start-up	-	52,657	85,111	46,752	46,367	46,894	277,782	46.9
Total	8,439	61,097	93,551	55,191	54,806	55,334	328,417	55.5
Total								
Start-up	18,743	18,743	18,743	18,743	18,743	18,743	112,460	19.0
Post-start-up	-	85,645	110,354	68,473	80,140	134,879	479,491	81.0
Total	18,743	104,388	129,097	87,216	98,883	153,623	591,950	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 6.34 AB-CC 7: Advocacy, promotion, and social mobilization input costs, *Tubaramure*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent								
Personnel	18,193	97,437	104,384	74,319	86,699	90,036	471,067	79.6
Materials and supplies	-	337	332	469	975	6,833	8,945	1.5
Media	-	-	-	-	-	-	-	-
Transportation	348	2,861	5,082	1,064	2,825	29,431	41,610	7.0
Maintenance	0	337	1,103	883	2,412	11,567	16,302	2.8
Utilities	0	551	465	369	343	766	2,494	0.4
Rent	0	142	2,458	4,017	695	684	7,997	1.4
Travel for program staff	4	496	5,024	644	2,089	5,714	13,971	2.4
Trainings for staff and service providers	195	228	7,937	195	623	2,585	11,763	2.0
Sub-grants	-	-	-	-	-	-	-	-
Consultations	-	-	-	-	-	315	315	0.1
Miscellaneous	3	177	145	31	-214	304	446	0.1
Capital								
Transport	-	1,000	1,076	4,525	1,464	4,533	12,598	2.1
Equipment	-	552	859	322	677	438	2,848	0.5
Furniture	-	271	232	379	296	417	1,595	0.3
Total costs by input								
Recurrent	18,743	102,565	126,930	81,990	96,447	148,235	574,910	97.1
Capital	0	1,822	2,167	5,226	2,437	5,388	17,040	2.9
Total	18,743	104,388	129,097	87,216	98,883	153,623	591,950	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

[b] Banking transactions credited to the account.

6.2.8 AB-CC 8: Management, Planning, and Administration

The final *Tubaramure* AB-CC included program management, planning, and administration activities and had a total cost of US$4.4 million (**Table 6.35**). In total, start-up activity costs made up 11.5 percent of total AB-CC 8 costs. Finance and administration was the most costly activity (38.2 percent of total costs), followed by meetings (29.3 percent). Total costs for AB-CC 8 peaked in 2011, largely driven by the financial and administrative support, headquarters support, and consortium meetings conducted at the height of beneficiary enrollment and program implementation. Costs spiked again during the final year of implementation, when more meetings were held as the end of the program approached and reports on program performance and achievements were drafted.

Capital and recurrent costs made up 3.4 percent and 96.6 percent, respectively, of total AB-CC 8 costs (**Table 6.36**). The cost of personnel constituted more than three-quarters of total AB-CC costs.

Table 6.35 AB-CC 8: Management, planning, and administration costs, *Tubaramure*

Sub-AB-CC	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
8.1 Human resources								
Start-up	12,281	12,281	13,533	13,533	13,533	13,533	78,695	1.7
Post-start-up	-	-	-	-	-	-	-	-
Total	12,281	12,281	13,533	13,533	13,533	13,533	78,695	1.7
8.2 Procurement								
Start-up	6,700	6,700	6,700	6,700	6,700	6,700	40,200	0.9
Post-start-up	-	2,866	4,765	2,671	4,447	3,816	18,563	0.4
Total	6,700	9,566	11,465	9,370	11,147	10,516	58,763	1.2
8.3 Pre-implementation logistics								
Start-up	3,861	5,603	5,603	5,603	5,603	5,603	31,878	0.7
Post-start-up	-	-	-	-	-	-	-	-
Total	3,861	5,603	5,603	5,603	5,603	5,603	31,878	0.7
8.4 Offices and infrastructure								
8.4a Support services for all consortium								
Start-up	19,666	19,666	19,666	19,666	19,666	19,666	117,995	2.7
Post-start-up	-	22,171	50,401	34,321	58,690	210,968	376,552	8.5
Total	19,666	41,837	70,067	53,987	78,356	230,634	494,547	11.2
8.4b Meetings								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	285,819	250,814	181,697	286,571	292,021	1,296,922	29.3
Total	-	285,819	250,814	181,697	286,571	292,021	1,296,922	29.3
8.5 Headquarters support								
Start-up	-	-	-	-	-	-	-	-
Post-start-up	-	95,612	225,973	17,599	207,729	228,456	775,368	17.5
Total	-	95,612	225,973	17,599	207,729	228,456	775,368	17.5
8.6 Finance and Administration								
Start-up	40,395	40,395	40,395	40,395	40,395	40,395	242,368	5.5
Post-start-up	-	145,708	398,201	389,072	263,801	255,331	1,452,113	32.8
Total	40,395	186,102	438,595	429,467	304,196	295,726	1,694,480	38.2
Total								
Start-up	82,903	84,645	85,897	85,897	85,897	85,897	511,135	11.5
Post-start-up	-	552,176	930,153	625,360	821,237	990,593	3,919,518	88.5
Total	82,903	636,820	1,016,050	711,257	907,134	1,076,490	4,430,654	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 6.36 AB-CC 8: Management, planning, and administration input costs, *Tubaramure*

Type of input	2009 (US$)[a]	2010 (US$)	2011 (US$)	2012 (US$)	2013 (US$)	2014 (US$)	AB-CC total (US$)	% of total AB-CC costs
Recurrent								
Personnel	81,552	497,412	851,823	567,392	732,307	618,500	3,348,986	75.6
Materials and supplies	123	7,813	6,779	529	21,316	139,594	176,154	4.0
Media	-	-	-	-	-	-	-	-
Transportation	240	20,829	33,267	31,233	18,472	133,788	237,830	5.4
Maintenance	-	4,827	10,046	17,164	54,404	91,880	178,323	4.0
Utilities	-	4,942	9,138	3,495	11,612	16,018	45,204	1.0
Rent	536	2,826	25,340	35,567	18,340	13,369	95,978	2.2
Travel for program staff	16	18,074	33,165	15,732	11,320	23,844	102,151	2.3
Trainings for staff and service providers	9	2,567	1,788	625	5,771	7,620	18,380	0.4
Sub-grants	-	-	-	-	-	-	-	-
Consultations	-	-	367	367	367	6,953	8,055	0.2
Miscellaneous	426	46,282	13,730	7,102	1,971	1,046	70,558	1.6
Capital								
Transport	-	19,210	15,939	15,541	15,130	15,158	80,978	1.8
Equipment	-	10,884	13,309	13,692	14,286	5,912	58,083	1.3
Furniture	-	1,152	1,359	2,816	1,840	2,806	9,973	0.2
Total costs by input								
Recurrent	82,903	605,574	985,444	679,207	875,879	1,052,614	4,281,619	96.6
Capital	0	31,247	30,606	32,050	31,256	23,876	149,035	3.4
Total	82,903	636,820	1,016,050	711,257	907,134	1,076,490	4,430,654	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

6.3 Comparison of Start-Up Costs

In the *PROCOMIDA* program, 17.3 percent of total costs were start-up costs, and the bulk of start-up costs were divided among four of the nine AB-CCs: AB-CC 2 (food ration and supplement distribution; 3.4 percent of total costs), AB-CC 3 (BCC development and execution; 4.7 percent of total costs), AB-CC 5 (monitoring and evaluation; 3.4 percent of total costs), and AB-CC 9 (systematic information management; 4.1 percent of total costs) (**Table 6.37**). AB-CC 7 (advocacy, promotion, and social mobilization) also incurred start-up costs that were more than one-fourth of the total cost of the AB-CC. However, AB-CC 7 was the least costly AB-CC; thus, the start-up costs of AB-CC 7 were only 1.1 percent of total program activity costs. The remaining AB-CCs either did not incur start-up costs or had start-up costs that were less than 1 percent of total costs of the AB-CC.

In the *Tubaramure* program, 10.1 percent of total costs were start-up costs. AB-CC 3 (BCC development and execution; 4.5 percent of total costs) and AB-CC 8 (management, planning, and administration; 2.2 percent of total costs) had the largest share of start-up costs for the program. Start-up costs were also a notable share of AB-CC 5 (monitoring and evaluation), AB-CC 6 (training and supervision), and AB-CC 7 (advocacy, promotion, and social mobilization). However, these AB-CCs incurred smaller shares of overall program activity costs; thus, the start-up costs for these AB-CCs accounted for a relatively small amount of overall program activity costs.

Developing the BCC strategy, curriculum, and materials accounted for the largest share of start-up costs in both programs. Additionally, a large share of *PROCOMIDA's* start-up costs were spent developing databases to manage beneficiary enrollment information and commodity distributions. These investments could still be used by the program if they were to continue delivering services in the communities where the program was already established. Moreover, minimal[29] or no additional costs would be incurred to adapt these resources if the programs expanded to nearby regions.

Other aspects of start-up costs, such as community coordination, designing transportation routes, negotiating agreements, and conducting baseline and midline surveys, were specific to the communities where the program was implemented. These activities would not incur additional start-up costs if the program were to continue delivering services in the same communities. However, they would incur additional start-up costs if the program were to expand implementation to nearby areas.

[29] The *PROCOMIDA* program would possibly need to translate its materials into other indigenous languages spoken in nearby areas, and both programs would want to consider reevaluating the local availability of foods used in the lessons and recipes.

Table 6.37 Start-up costs as a share of total program activity costs

	PROCOMIDA, Guatemala			*Tubaramure*, Burundi		
AB-CC	AB-CC total (US$)[a]	% of total AB-CC costs	% of total program activity costs	AB-CC total (US$)	% of total AB-CC costs	% of total program activity costs
1. Supply and logistics of food commodity and supplement distribution						
Start-up	25,745	0.9	0.1	92,211	2.9	0.4
Total	3,023,382	100.0	10.9	3,218,377	100.0	13.6
2. Food ration and supplement distribution						
Start-up	934,602	17.6	3.4	88,028	1.2	0.4
Total	5,296,188	100	19.1	7,184,147	100.0	30.4
3. BCC development and execution						
Start-up	1,288,931	27.3	4.7	1,055,722	34.5	4.5
Total	4,722,974	100.0	17.1	3,058,398	100.0	12.9
4. Institutional strengthening of health services						
Start-up	22,202	0.7	0.1	123,970	6.2	0.5
Total	3,268,831	100.0	11.8	2,009,724	100.0	8.5
5. Monitoring and evaluation						
Start-up	947,101	31.5	3.4	180,722	15.8	0.8
Total	3,004,106	100.0	10.8	1,146,683	100.0	4.9
6. Training and supervision of program staff						
Start-up	-	-	-	226,578	11.4	1.0
Total	1,495,287	100.0	5.4	1,985,693	100.0	8.4
7. Advocacy, promotion, and social mobilization						
Start-up	300,613	28.6	1.1	112,460	19.0	0.5
Total	1,052,695	100.0	3.8	591,950	100.0	2.5
8. Management, planning, and administration						
Start-up	155,436	3.5	0.6	511,135	11.5	2.2
Total	4,407,653	100.0	15.9	4,430,654	100.0	18.8
9. Systematic information management						
Start-up	1,127,282	74.1	4.1	-	-	-
Total	1,426,932	100	5.2	-	-	-
Total start-up	4,780,912		17.3	2,390,826		10.1
Total costs	27,698,046		100.0	23,625,626		100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

7. Identifying Differential Costs by Treatment Arm

The previous chapter identified the combined cost of implementing both the standard program[30] in the general enrollment area and the treatment arms in their respective areas (referred to as actual program activity costs) for each of the two PM2A programs. To determine the hypothetical program activity costs of *PROCOMIDA* and *Tubaramure* if any one of the treatment arms were to be implemented as the standard program throughout the program area in Guatemala or Burundi, respectively, we identified which sub-AB-CCs would have incurred costs that differed from the actual program activity costs. This chapter identifies which sub-AB-CCs incurred different costs across treatment arms and describes how these costs would differ from actual program activity costs if that particular treatment arm were to be implemented as the standard program both in the general enrollment area and in treatment arm areas.

In the case of some sub-AB-CCs, it is possible to assign the cost (or partial cost) of the activity to particular treatment arms (e.g., cost of transporting the different amounts of food commodities necessary for each treatment arm, or development and production of a bag or container to carry rations). For these sub-AB-CCs, we first describe which aspects incurred differential costs. We then state how the cost of implementing each treatment arm as the standard program in all general enrollment and treatment areas would affect the cost of the sub-AB-CC.

In the case of other sub-AB-CCs, the activity was conducted for the program as a whole but would have been less costly if only one version of the program had been implemented in each country. For example, a HCA would have still been negotiated; however, in a simpler version of the program that did not include multiple treatment arms, this activity would have likely required less staff time and have therefore been less costly. For these sub-AB-CCs, there are no cost data on the breakdown of costs across treatment arms. Therefore, we estimate a relatively lower cost of the activity if it were being implemented for a single treatment arm instead of a program with multiple treatment arms. Then, as with the other sub-AB-CCs, we state how the cost of implementing each treatment arm as the standard program in all general enrollment and treatment areas would affect the cost of the sub-AB-CC.

Overall, the treatment arms in *PROCOMIDA* varied the size of the family ration (i.e., full, reduced, or none) and, among treatment arms receiving the FFR, varied the composition of the individual ration or supplement (i.e., CSB, LNS, or MNP). For *Tubaramure*, the treatment arms differed in the duration of time that beneficiaries were eligible to receive food rations. Differences in food ration receipt according to size, type, and duration of eligibility affected activities related to the supply and logistics of food commodities (AB-CC 1) and the distribution of food rations (AB-CC 2) as well as the supporting AB-CCs for both countries. Additionally, for *PROCOMIDA*, beneficiary uptake was lower in the health convergence centers assigned to arm C (NFR+CSB). This means that if arm C (NFR+CSB) were implemented as the standard program, *PROCOMIDA* would have likely expanded implementation to other areas in order to reach the target number of beneficiaries, thus increasing implementation costs for many of the activities.

[30] The standard *PROCOMIDA* program provided the same intervention as arm A (FFR+CSB) and was implemented in 247 health convergence centers; 100 health convergence centers were assigned to one of the five treatment arms. The standard *Tubaramure* program provided the same intervention as the T24 arm and was implemented in 205 *collines*; 45 *collines* were assigned to one of the three treatment arms.

7.1 Identifying Differential Costs by Treatment Arm: *PROCOMIDA*, Guatemala

Many *PROCOMIDA* activities differed by treatment arm to accommodate the different individual and family rations. Additionally, beneficiary enrollment was lower in treatment arm C (NFR+CSB), which did not provide a family ration. On average, only 42.9 beneficiaries per health convergence center attended distributions in arm C (NFR+CSB), compared with between 65 and 69 in the other treatment arms (**Table 7.1**). We therefore assume that if treatment arm C (NFR+CSB) were implemented as the standard program, then *PROCOMIDA* would have needed to expand its service area to reach a similar number of beneficiaries as were reached in the other treatment arms. This would have involved delivering services to 160 additional health convergence centers, which would have required the support of two additional field offices from 2011 to 2014.

Table 7.1 Average number of beneficiaries per treatment arm, *PROCOMIDA*

Treatment arm	Number of monthly distributions with beneficiary data	Mean number of beneficiaries per health convergence center
A (FFR+CSB)	1,155	65.1
B (RFR+CSB)	1,100	64.9
C (NFR+CSB)	1,155	42.9
D (FFR+LNS)	1,060	69.4
E (FFR+MNP)	1,050	68.2

Note: Data are from *PROCOMIDA* monthly food distribution data.

7.1.1 AB-CC 1 Supply and Logistics of Food Commodity and Supplement Distribution

If *PROCOMIDA* were implemented as any one of the five treatment arms in the general enrollment and treatment arm areas, the costs incurred to AB-CC 1, which included the supply and logistics of food commodities and supplement distribution, would differ from the actual program activity costs. The differences in the cost of each sub-AB-CC were primarily the result of the differences in the size of the family ration and type of individual ration being provided to each treatment arm. If any one version of the program replaced the standard program and all other treatment arms, the amount of all commodities and supplements required would need to be adjusted (**Table 7.2**). For example, if treatment arm A (FFR+CSB) were to be implemented for all beneficiaries, the 40 health convergence centers in treatment arms B (RFR+CSB) and C (NFR+CSB) would instead receive a FFR; the 40 health convergence centers in treatment arms D (FFR+LNS) and E (FFR+MNP) would then receive CSB, and neither LNS nor MNP would be provided. Likewise, changes would need to be made if any of the other treatment arms were implemented. Additionally, the changes would be made for a larger number of health convergence centers, because the standard program delivered to the general enrollment area would also change.[31]

[31] The program being delivered to the general enrollment area would not have changed if treatment arm A (FFR+CSB) were to have been implemented, because this treatment arm was offered as the standard program.

Table 7.2 Difference in the number of health convergence centers that would receive each commodity and supplement by treatment arm, *PROCOMIDA*

	Program to be delivered to all 347 health convergence centers				
Commodity	**A (FFR+CSB)**	**B (RFR+CSB)**	**C (NFR+CSB)**	**D (FFR+LNS)**	**E (FFR+MNP)**
Rice, beans, and oil	↑ in 40 (arms B+C)	↑ in 20 (arm C) ↓ in 307 (arms A,D+E; + general enrollment)	↓ in 327 (arms A,B,D+E; + general enrollment)	↑ in 40 (arms B+C)	↑ in 40 (arms B+C)
CSB	↑ in 40 (arms D+E)	↑ in 40 (arms D+E)	↑ in 40 (arms D+E) ↑ in 160 (added to meet enrollment goals.)	↓ in 307 (arms A,B,+C; + general enrollment)	↓ in 307 (arms A,B,+C; + general enrollment)
LNS	↓ in 20 (arm D)	↓ in 20 (arm D)	↓ in 20 (arm D)	↑ in 327 (arms A,B,C+E; + general enrollment)	↓ in 20 (arm D)
MNP	↓ in 20 (arm E)	↓ in 20 (arm E)	↓ in 20 (arm E)	↓ in 20 (arm E)	↑ in 327 (arms A,B,C+D; + general enrollment)

↑ = increase; ↓ = decrease

Differential costs to this AB-CC were a result of the different costs incurred by ordering, importing, transporting, and storing the food commodities and supplements (**Table 7.3**). Each sub-AB-CC is described in detail below.

Table 7.3 Differential costs to activities in AB-CC 1: Supply and logistics of food and supplement distribution activities, *PROCOMIDA*

Sub-AB-CC	A (FFR+CSB)	B (RFR+CSB)	C (NFR+CSB)	D (FFR+LNS)	E (FFR+MNP)
1.1 Food commodity orders and imports					
1.1a Food commodity orders	Y	Y	Y	Y	Y
1.1b Food commodity imports	Y	Y	Y	Y	Y
1.2 Food commodity management and storage					
1.2a Transportation of food commodities from port to in-transit warehouse	N	Y	Y	Y	Y
1.2b Food commodity storage in Zacapa warehouse	N	N	Y	Y	Y
1.3 Coordination of food commodity transportation and distribution					
1.3a Transportation to Cobán warehouse	N	Y	Y	Y	Y
1.3b Food commodity storage in Cobán warehouse	N	Y	Y	Y	Y
1.4 Monetization	N	N	N	N	N

Note: N=no; Y=yes.

Sub-AB-CC 1.1a: Food Commodity Orders

Food commodity and supplement orders were made at fixed times, and the size of the orders did not affect the amount of time needed to prepare them. However, if certain products were not ordered, it would take less staff time to prepare the orders.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB) or B (RFR+CSB): It would not be necessary to order LNS or MNP, thus reducing the amount of staff time needed to prepare the order.

C (NFR+CSB): It would not be necessary to order food commodities for the family ration, LNS, or MNP, thus reducing the amount of staff time needed to prepare the order.

D (FFR+LNS): It would not be necessary to order CSB or MNP, thus reducing the amount of staff time needed to prepare the order.

E (FFR+MNP): It would not be necessary to order CSB or LNS, thus reducing the amount of staff time needed to prepare the order.

Sub-AB-CC 1.1b: Food Commodity Imports

The cost of coordinating food commodity imports varied according to the quantity of the commodities being imported.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB): Costs would increase in response to the larger quantities of rice, beans, oil, and CSB. However, there would be no costs incurred to import LNS and MNP.

B (RFR+CSB): Smaller quantities of rice, beans, and oil would be imported, leading to a decrease in these costs. Additionally, there would be no costs incurred to import LNS and MNP.

C (NFR+CSB): Costs would be lower, because only CSB would be imported.

D (FFR+LNS) or E (FFR+MNP): The costs associated with importing larger quantities of rice, beans, and oil would increase. No cost would be incurred to import CSB. Only a single supplement would need to be managed, but in much larger quantities.

Sub-AB-CC 1.2a: Transportation of Food Commodities from Port to In-Transit Warehouse (Zacapa)

The cost of this activity varied according to the quantity of rice, beans, oil, and CSB being stored in a temporary warehouse in Zacapa while the larger warehouse in Cobán was being built and, later, the transportation of these commodities from Zacapa to Cobán. LNS and MNP were transported directly to Cobán, and there was no cost associated with transporting them from the port to Zacapa.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB): There would be no changes in costs, because despite the small increase in the amount of food commodities, the program would have used the Zacapa warehouse and transported commodities to it for the same amount of time.

B (RFR+CSB): Costs would be lower, because smaller amounts of food commodities would mean that the Zacapa warehouse would have been used for a shorter amount of time, and it would not have been necessary to transport the commodities to Zacapa as frequently.

C (NFR+CSB): Rice, beans, and oil would not need to be transported and stored. Transportation to Cobán would have occurred less frequently (only for CSB), and therefore would have cost less. Additionally, the Zacapa warehouse would have closed sooner, ending the need to transport commodities to that location.

D (FFR+LNS) or E (FFR+MNP): The cost of transporting commodities to Zacapa would be lower, because it would have only been necessary to transport rice, beans, and oil—not CSB. Both LNS and MNP were transported directly to Cobán.

Sub-AB-CC 1.2b: Food Commodity Storage in Zacapa Warehouse

Storing food commodities at the temporary Zacapa warehouse would have been more expensive for larger volumes of food commodities.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB) or B (RFR+CSB): There would be no changes in costs, as the program would need to utilize the Zacapa warehouse for the same amount of time as needed for the actual program.

C (NFR+CSB): Costs would decrease, because it would not be necessary to store rice, beans, or oil, and the Zacapa warehouse would have been able to close sooner.

D (FFR+LNS) or E (FFR+MNP): Costs would decrease, because it would not be necessary to store CSB, and the Zacapa warehouse would have been able to close sooner.

Sub-AB-CC 1.3a: Transportation to Cobán Warehouse

Commodities needed to be transported to the Cobán warehouse. The cost of this activity differed according to the amount of commodities required by the program.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB): Cost would remain the same, as the small increase in the quantity of commodities would not increase the cost of transportation.

B (RFR+CSB): Smaller quantities of rice, beans, and oil would need to be transported, leading to lower costs.

C (NFR+CSB): Rice, beans, and oil would not need to be transported, leading to lower costs. However, there would be addition transportation costs in order to transport CSB to the additional health convergence centers.

D (FFR+LNS) or E (FFR+MNP): CSB would not need to be transported, and LNS and MNP would be transported directly to Cobán, leading to lower costs.

Sub-AB-CC 1.3b: Food Commodity Storage in Cobán Warehouse

The size of the warehouse built in Cobán to store the food commodities would differ based on the overall volume of food commodities and supplements that the program needed to store.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB): There would be no change in the size of the warehouses, because there would have been sufficient space to accommodate the small increase in food commodities.

B (RFR+CSB): There would be no change in the size in the main warehouse, but the second warehouse could have been smaller and closed earlier.

C (NFR+CSB): The program would have only needed one warehouse.

D (FFR+LNS) or E (FFR+MNP): There would be no change in the size of the main warehouse, but the second warehouse could have been smaller and closed earlier.

7.1.2 AB-CC 2: Food Ration and Supplement Distribution

The costs of AB-CC 2, which covered food ration and supplement distribution activities, differed across treatment arms. As with AB-CC 1, differences in the cost of each sub-AB-CC were the result of the size of the family rations and the type of individual supplement provided (**Table 7.2**). Overall, the costs incurred to AB-CC 2 would differ from actual program activity costs if any one of the treatment arms were implemented in both the general enrollment and treatment arm areas. Specifically, differential costs would be incurred because of community coordination, the repackaging of food commodities, transportation to distribution sites, beneficiary enrollment, the design and production of materials for food ration distributions, the implementation of LNS and MNP, and the distribution of food rations to beneficiaries (**Table 7.4**). Additional costs would also be incurred for arm C (NFR+CSB) to accommodate the two additional field offices. Below we describe which sub-AB-CCs would differ and how.

Table 7.4 Differential costs to activities in AB-CC 2: Food ration and supplement distribution, *PROCOMIDA*

Sub-AB-CC	A (FFR+CSB)	B (RFR+CSB)	C (NFR+CSB)	D (FFR+LNS)	E (FFR+MNP)
2.1 Community coordination	Y	Y	Y	Y	Y
2.2 Repackaging and organization of food rations	Y	Y	Y	Y	Y
2.3 Transportation					
2.3a Designing transportation routes	N	N	N	N	N
2.3b Transportation contracts	N	N	N	N	N
2.3c Transportation to distribution sites	Y	Y	Y	Y	Y
2.4 Beneficiary enrollment					
2.4a Beneficiary cards	N	N	N	N	N
2.4b Beneficiary enrollment lists	N	N	N	N	N
2.5 Materials and supplies for food rations					
2.5a Cloth bag design, development, and production	Y	Y	Y	Y	Y
2.5b Food ration bag design, development, and production	Y	Y	Y	Y	Y
2.5c LNS and MNP supplement bag design	Y	Y	Y	Y	Y
2.6 LNS and MNP implementation	Y	Y	Y	Y	Y
2.7 Distributing food rations to beneficiaries	Y	Y	Y	Y	Y

Note: N=no; Y=yes.

Sub-AB-CC 2.1 Community Coordination

The staff time and travel required to implement community coordination activities in 2009 and 2010 was similar across all treatment arms. In arms A (FFR+CSB) and B (RFR+CSB), these activities were no longer necessary after 2010. However, continued community coordination activities were necessary throughout the 5-year program in the other three treatment arms. They would be necessary in arm C (NFR+CSB), because the history of food ration distribution in the country means that there likely would have been problems in distributing only an individual ration and not a family food ration. They would also be necessary in arms D (FFR+LNS) and E (FFR+MNP), because of continued implementation challenges with the LNS and MNP products.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB) or B (RFR+CSB): Costs would only be incurred for the first 2 years (2009 and 2010), and they would be similar to actual program cost in these years. Costs would not be incurred for subsequent years (2011 to 2015), because they would not have been necessary in the areas where the other three treatment arms were implemented.

C (NFR+CSB): Costs would be higher, because additional community coordination activities would have been necessary from 2011 to 2015 in general enrollment areas along with the areas where arms A and B were implemented. Furthermore, community coordination activities would have been conducted in the 160 additional health convergence centers that would be enrolled. Community coordination would have still been conducted at a similar cost in the areas that had been assigned to arms D (FFR+LNS) and E (FFR+MNP), though different topics would have been addressed.

D (FFR+LNS): Costs would be higher, since community coordination activities would have continued from 2011 to 2015 for the general enrollment areas and in arms A (FFR+CSB) and B (RFR+CSB). Community coordination would have incurred similar costs but addressed different topics in arms C (RFR+LNS) and E (FFR+MNP).

E (FFR+MNP): Costs would be higher, since community coordination activities would have continued from 2011 to 2015 for the general enrollment areas and in arms A (FFR+CSB) and B (RFR+CSB). Community coordination would have incurred similar costs but addressed different topics in arms C (RFR+LNS) and D (FFR+LNS).

Sub-AB-CC 2.2 Repackaging and Organization of Food Rations

The volume and types of food commodities to repackage and distribute varied by treatment arm, and thus the costs of these activities varied across treatment arms (**Table 7.2**). The space and equipment required for repackaging foods in the household rations and the CSB, however, were fixed for each commodity and would not vary according to the quantity of rations.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB): Forty additional health convergence centers that received either the RFR or NFR would receive the FFR entailing the repackaging of more rice, beans, and oil. Forty others would receive CSB in place of either LNS or MNP, meaning that more CSB would need to be repackaged. To accommodate this change, the space needed for repackaging would remain the same, but the amount of labor required for repackaging activities would increase.

B (RFR+CSB): Twenty health convergence centers would receive the RFR in place of NFR, and the 307 that received the FFR would receive the RFR instead. In addition, the beneficiaries served by the 40 health convergence centers that received LNS or MNP would receive CSB. To accommodate these changes, the size of the repackaging area would remain the same, but less labor would be required.

C (NFR+CSB): The 327 health convergence centers assigned to receive the FFR would not receive rice, beans, or oil, and the 40 health convergence centers that were assigned to LNS and MNP would receive CSB instead. There would also be additional costs to providing CSB to the 160 additional health convergence centers that would be enrolled in the program. Overall, less space would be required for the repackaging equipment and less labor would be needed since both the equipment and labor would only be needed to repackage CSB.

D (FFR+LNS): Forty health convergence centers would receive more rice, beans, and oil. Additionally, 327 would receive LNS instead of CSB, and 20 would receive LNS instead of MNP. To accommodate these changes, the warehouse space and labor needed for repackaging CSB could be eliminated. However, more labor would be required to repackage rice, beans, and oil to accommodate the additional commodity needs for the 40 additional health convergence centers that were assigned to receive either the RFR or NFR.

E (FFR+MNP): Forty health convergence centers would receive more rice, beans, and oil; 327 would receive MNP instead of CSB; and 20 would receive MNP instead of LNS. To accommodate these changes, the warehouse could eliminate the space needed to repackage CSB. Less labor would be required to repackage and organize CSB; however, more labor would be required to accommodate the 40 additional health convergence centers receiving the FFR.

Sub-AB-CC 2.3c Transportation to Distribution Sites

To accommodate different volumes of food commodities and supplements (**Table 7.2**), the cost of loading them on to distribution trucks and transporting them would differ by treatment arm.[32]

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB): To accommodate both larger quantities of rice, beans, and oil in the 40 health convergence centers that received either the RFR or NFR and the larger relative volume of CSB compared with LNS and MNP, the transportation of commodities to the distribution sites would require an additional truck to transport supplies and additional labor for loading commodities on transportation days.

B (RFR+CSB): The space needed to transport family rations would be smaller for the 307 health convergence centers that received the FFR. However, more time and space would be needed to load and transport the commodities for the 20 health convergence centers that did not receive a family ration but would now receive the RFR. In addition, for the 40 health convergence centers that received either LNS or MNP, the CSB that would replace them would require more space. Overall, fewer trucks would be needed to transport the commodities to the distribution sites, and less staff time would be required to load the trucks.

C (NFR+CSB): This treatment arm required the least amount of time and space to load and transport the commodities, since no rice, beans, or oil were distributed. Although the CSB takes up more space than either LNS or MNP, this relative difference is much smaller than that for either a RFR or FFR, compared with NFR. Thus, both the number of trucks and the staff time to load the trucks would be substantially smaller.

D (FFR+LNS) or E (FFR+MNP): The cost of transportation and the time required to load the trucks for these two arms was similar. For the 40 health convergence centers that received either the RFR or NFR, costs would increase due to the larger volume of rice, beans, and oil being delivered. However, since the LNS and MNP required less truck space and labor to load compared with CSB, the costs would be lower for the 307 health convergence centers that received CSB. Overall, fewer trucks and less labor would be needed.

[32] Food rations and supplements were unloaded from trucks by community members, and program activity costs did not differ.

Sub-AB-CC 2.5a Cloth Bag Design, Development, and Production

Different cloth bags were designed and produced for treatment arms receiving the FFR, RFR, and NFR.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), C (NFR+CSB), D (FFR+LNS), and E (FFR+MNP): For each treatment arm, the cost of designing the bag would be less than the cost of what was produced for the entire program, since only one type of cloth bag would be needed.

Sub-AB-CC 2.5b Food Ration Bag Design, Development, and Production

For rice and beans, two different-sized food ration bags (full and reduced) were needed for each commodity, and larger bags were more expensive. However, different-sized bags used the same design, and no additional costs were incurred in their development and design. A different bag was also needed for CSB.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB): Costs would increase since additional bags sized to accommodate the FFR would be produced for the 40 health convergence centers that received the RFR or NFR, and additional bags for the CSB would need to be produced for the 40 health convergence centers that received LNS and MNP. However, the RFR bags for 20 health convergence centers would not need to be produced.

B (RFR+CSB): Costs would decrease for the bags to accommodate the RFR, which would replace the larger bags in the 307 health convergence centers that were assigned to receive the FFR; thus, the larger bags would not need to be produced. However, overall costs would increase, because additional bags would need to be ordered for the 20 health convergence centers receiving NFR, and additional CSB bags would need to be produced for the 40 health convergence centers that received LNS or MNP.

C (NFR+CSB): Costs would decrease since the bags to accommodate rice and beans would not need to be designed or produced. However, additional bags for the CSB would need to be produced for the 40 health convergence centers that received LNS and MNP.

D (FFR+LNS) or E (FFR+MNP): Bags sized to accommodate the RFR and CSB would not need to be produced. However, additional bags sized to accommodate the FFR would need to be produced for the 40 health convergence centers that received the RFR or NFR.

Sub-AB-CC 2.5c LNS and MNP Supplement Bag Design

These bags would only need to be designed for treatment arms receiving LNS or MNP. Their production was included in the cost of producing the supplements.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), or C (NFR+CSB): No costs would be incurred.

D (FFR+LNS) or E (FFR+MNP): Only half the effort would be required to produce a single supplement bag.

Sub-AB-CC 2.6: LNS and MNP Implementation

This activity was only implemented in the treatment arms that received LNS and MNP.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), or C (NFR+CSB): No costs would be incurred.

D (FFR+LNS) or E (FFR+MNP): There would be no changes to the cost of planning this activity. However, the cost of implementation would increase in order to conduct this activity in every arm and in the general enrollment areas.

Sub-AB-CC 2.7: Distributing Food Rations to Beneficiaries

In health convergence centers with fewer than 70 beneficiaries expected for a monthly distribution, two field technicians led activities. When there were 70 beneficiaries or more, four field technicians were needed. In arm C (NFR+CSB), only 10 percent of the health convergence centers had more than 70 beneficiaries, whereas in the other arms approximately half of the health convergence centers had 70 or more beneficiaries. For arms A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), and E (FFR+MNP), 25 field technicians were needed for every 10 health convergence centers, but for arm C (NFR+CSB), only 21 were needed. Thus, fewer field technicians were used in arm C (NFR+CSB).

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): Additional field technicians would be employed to serve the larger number of beneficiaries in the 20 health convergence centers that had been assigned to arm C (NFR+CSB).

C (NFR+CSB): More field technicians would be employed, because two additional field offices would be used to provide services to 160 additional health convergence centers.

7.1.3 AB-CC 3 BCC Development and Execution

Costs attributable to AB-CC 3, which covered the development and execution of the BCC strategy, differed by treatment arm due to the additional formative research needed to test the acceptability of the LNS and MNP supplements, the differences in program participation by treatment arm, and the different types of recipe books that were needed (**Table 7.5**). Additionally, many activities would have incurred higher costs in arm C (NFR+CSB) because of expanding the geographic scope of coverage to two additional field offices. The cost of activities related to planning the BCC program did not differ, because the lessons were planned and implemented similarly in all treatment arms. Sub-AB-CCs that incurred differential costs across treatment arms are described below.

Table 7.5 Differential costs to activities in AB-CC 3: BCC development and execution, *PROCOMIDA*

Sub-AB-CC	A (FFR+CSB)	B (RFR+CSB)	C (NFR+CSB)	D (FFR+LNS)	E (FFR+MNP)
3.1 Development of BCC strategy					
3.1a Formative research	Y	Y	Y	Y	Y
3.1b Development of key messages	N	N	N	N	N
3.2 Development of BCC materials					
3.2a Development of lessons	N	N	N	N	N
3.2b Development and production of flip charts	N	N	Y	N	N
3.2c Radio spots	N	N	N	N	N
3.2d Poster production	N	N	N	N	N
3.2e Publicity sign development and production	N	N	N	N	N
3.2f BCC reports	N	N	N	N	N
3.3 Establishment of groups for delivery of BCC lessons					
3.3a Selection, training, and role of leader mothers	N	N	Y	N	N
3.3b Designing the typical work day	N	N	N	N	N
3.3c Delivering BCC lessons	Y	Y	Y	Y	Y
3.3d Demonstration of monthly recipe to leader mothers	Y	Y	Y	Y	Y

Sub-AB-CC	A (FFR+CSB)	B (RFR+CSB)	C (NFR+CSB)	D (FFR+LNS)	E (FFR+MNP)
3.3e Making home visits to beneficiaries	Y	Y	Y	Y	Y
3.4 Recipe development and *Crece Bien*	N	N	N	Y	Y
3.5 Model gardens	N	N	Y	N	N

Note: N=no; Y=yes.

Sub-AB-CC 3.1a Formative Research

One goal of the formative research was to evaluate the acceptability of LNS and MNP supplements and determine their ideal administration. This component of the formative research only incurred costs for arms D (FFR+LNS) and E (FFR+MNP).

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), or C (NFR+CSB): The formative research would not need to test the acceptability of the LNS and MNP products, and costs would be lower than actual program activity costs.

D (FFR+LNS) or E (FFR+MNP): The formative research would only need to test the acceptability of one supplement, and costs would be slightly lower than actual program activity costs.

Sub-AB-CC 3.2b: Development and Production of Flip Charts

The cost of developing the flip charts would not differ by treatment arm. However, the number of flip charts that would need to be printed would vary according to the number of health convergence centers where *PROCOMIDA* was implemented.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): No additional flip charts would need to be produced.

C (NFR+CSB): Field technicians would be delivering BCC lessons at 160 more health convergence centers, and additional flip charts would need to be produced.

Sub-AB-CC 3.3c: Delivering BCC Lessons

As described for sub-AB-CC 2.7, beneficiary uptake was lower in arm C (NFR+CSB), which affected the number of field technicians who were employed. Moreover, increasing the geographic scope of service delivery, as would be necessary if implementing arm C (NFR+CSB) as the standard program, would also increase the number of field technicians.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): Eight additional field technicians would be employed to serve the larger number of beneficiaries in the 20 health convergence centers that had been assigned to arm C (NFR+CSB).

C (NFR+CSB): More field technicians would be employed in order to accommodate the delivery of BCC lessons at 160 additional health convergence centers, thus increasing costs of this activity.

Sub-AB-CC 3.3d: Demonstration of Monthly Recipe to Leader Mothers

As with sub-AB-CC 3.3d, the number of field technicians would differ to account for lower beneficiary uptake in arm C (NFR+CSB).

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): Eight additional field technicians would be employed to serve the larger number of beneficiaries in the 20 health convergence centers that had been assigned to arm C (NFR+CSB).

C (NFR+CSB): More field technicians would be employed in order to accommodate the monthly recipe demonstrations at the 160 additional health convergence centers, thus increasing costs of this activity.

Sub-AB-CC 3.3e: Making Home Visits to Beneficiaries

As with sub-AB-CC 3.3d, the number of field technicians would differ to account for lower beneficiary uptake in arm C (NFR+CSB).

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): Eight additional field technicians would be employed to serve the larger number of beneficiaries in the 20 health convergence centers that had been assigned to arm C (NFR+CSB).

C (NFR+CSB): More field technicians would be employed in order to accommodate the monthly recipe demonstrations at the 160 additional health convergence centers, thus increasing costs of this activity.

Sub-AB-CC 3.5 Model Gardens

The demonstration gardens were implemented by the institutional strengthening technicians at each health convergence center.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The program would serve the same number of health convergence centers, and there would be no change to the cost of implementing this activity.

C (NFR+CSB): The expansion of the program's geographic breadth to include additional health convergence centers would increase the number of demonstration gardens. Thus, the cost of this activity would increase.

7.1.4 AB-CC 4 Institutional Strengthening of Health Services

The activities related to the institutional strengthening of health services were implemented at the level of the health convergence center, and the staff time and resources needed to implement these activities did not differ by treatment arm.[33] However, if version C (NFR+CSB) were implemented, the program would need to expand into 160 more health convergence centers to meet its beneficiary goals. This means two additional institutional strengthening technicians would need to be hired, and the cost of all activities for AB-CC 3 would increase (**Table 7.6**).

[33] There were minor differences in the information provided according to treatment arm, but the costs of activities did not differ.

Table 7.6 Differential costs to activities in AB-CC 4: Institutional strengthening of health services, *PROCOMIDA*

Sub-AB-CC	A (FFR+CSB)	B (RFR+CSB)	C (NFR+CSB)	D (FFR+LNS)	E (FFR+MNP)
4.1 Improved communication					
4.1a Assess communication barriers between vulnerable populations and PSSs	N	N	Y	N	N
4.1b Conduct quarterly meetings at health convergence centers	N	N	Y	N	N
4.2 Trainings and provision of equipment					
4.2a Institutional assessment	N	N	Y	N	N
4.2b General PSS assessment	N	N	Y	N	N
4.2c Standardization of weight-height	N	N	Y	N	N
4.2d Train EBSs in BCC lessons	N	N	Y	N	N
4.2e Train FCs in BCC lessons	N	N	Y	N	N
4.2f Aid PSS educators and leader mothers	N	N	Y	N	N
4.2g Investment plan management	N	N	Y	N	N
4.2h PSS educators' monitoring of beneficiaries and leader mothers	N	N	Y	N	N
4.3 Supervision and monitoring					
4.3a Monitoring achievements of health convergence centers' institutional strengthening plan	N	N	Y	N	N
4.3b Monitoring height and weight growth	N	N	Y	N	N
4.3c Follow-up and support of malnourished children	N	N	Y	N	N
4.3d Monitoring implementation of BCC lessons by beneficiaries	N	N	Y	N	N
4.3e Adhering to cooperative agreements	N	N	Y	N	N

Note: N=no; Y=yes.

All Sub-AB-CCs for AB-CC 4

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The program would serve the same number of health convergence centers, and there would be no change to the cost of implementing this activity.

C (NFR+CSB): The expansion of the program's geographic breadth to include 160 additional health convergence centers would increase the costs of the activity.

7.1.5 AB-CC 5 Monitoring and Evaluation

Costs for the monitoring and evaluation activities of AB-CC 5 differed according to treatment arm. Furthermore, the increased number of monitoring and evaluation technicians at the two additional field offices in version C (NFR+CSB) would increase the cost of many monitoring and evaluation activities. These differential costs are summarized according to sub-AB-CC in **Table 7.7**. For sub-AB-CCs that differed by treatment arm, further details follow.

Table 7.7 Differential costs to activities in AB-CC 5: Monitoring and evaluation activities, *PROCOMIDA*

Sub-AB-CC	A (FFR+CSB)	B (RFR+CSB)	C (NFR+CSB)	D (FFR+LNS)	E (FFR+MNP)
5.1 Planning	N	N	Y	N	N
5.2 Monitoring					
5.2a Discussing results	N	N	Y	N	N
5.2b Monitoring the typical day of the *PROCOMIDA* technicians	N	N	Y	N	N
5.2c Home visits by monitoring and evaluation technicians	N	N	Y	N	N
5.2d Monitoring of leader mother visits to beneficiaries' homes	N	N	Y	N	N
5.2e Additional interviews with key informants on program activities	N	N	Y	N	N
5.2f Monitoring and follow-up training	N	N	Y	N	N
5.2g Evaluation of PSS data	Y	Y	Y	Y	Y
5.2h Monitoring activities at unspecified times	N	N	Y	N	N
5.2i Annual monitoring	N	N	Y	N	N
5.3 Evaluation					
5.3a Baseline survey	Y	Y	Y	Y	Y
5.3b Midline survey	Y	Y	Y	Y	Y
5.3c Endline survey	Y	Y	Y	Y	Y

Note: N=no; Y=yes.

Sub-AB-CC 5.1: Planning

The planning activities incorporated senior staff members, field teams, and members of the systematic information management team. The activity was more costly when more staff members were involved.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The program would have the same number of field teams and systematic information management technicians, and the cost of the activity would not differ.

C (NFR+CSB): The expansion of the program's geographic breadth to include additional health convergence centers would increase the number of staff members involved in this activity. Thus, the cost of implementing the activity would increase.

Sub-AB-CC 5.2a: Discussing Results

Results of monitoring activities were discussed with members of the field teams, and the activity was more costly when more staff members were involved.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The program would have the same number of field teams, and the cost of the activity would not differ.

C (NFR+CSB): The expansion of the program's geographic breadth to include 160 additional health convergence centers would increase the number of staff members involved in this activity. Thus, the cost of implementing the activity would increase.

Sub-AB-CC 5.2b: Monitoring the Typical Day of the *PROCOMIDA* Technicians

Activities to monitor the typical day of the *PROCOMIDA* field technicians were conducted at each health convergence center. Thus, the cost of the activity varied according to the number of health convergence centers that were served.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The program would serve the same number of health convergence centers, and the cost of the activity would not differ.

C (NFR+CSB): The expansion of the program to cover 160 more health convergence centers would increase the cost of this activity.

Sub-AB-CC 5.2c: Home Visits by Monitoring and Evaluation Technicians

Home visits to beneficiaries by monitoring and evaluation technicians were conducted at every health convergence center.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The program would serve the same number of health convergence centers, and the cost of the activity would not differ.

C (NFR+CSB): The expansion of the program's geographic breadth to include 160 additional health convergence centers would increase the cost of implementing this activity.

Sub-AB-CC 5.2d: Monitoring of Leader Mother Visits to Beneficiaries' Homes

LMs were recruited, and their visits to beneficiaries were monitored at the level of the health convergence center.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The program would need to monitor the same number of LMs, and the cost of the activity would not differ.

C (NFR+CSB): The expansion of the program's geographic breadth to include additional health convergence centers would increase the number of LMs and the cost of monitoring their visits to beneficiaries.

Sub-AB-CC 5.2e: Additional Interviews with Key Informants on Program Activities

Interviews with key informants were conducted at each health convergence center.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The program would serve the same number of health convergence centers, and the cost of the activity would not differ.

C (NFR+CSB): The expansion of the program's geographic breadth to include 160 additional health convergence centers would increase the cost of implementing this activity.

Sub-AB-CC 5.2f: Monitoring and Follow-Up Training

At each health convergence center, BCC knowledge among field technicians, staff members, LMs, and beneficiaries was monitored.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The program would serve the same number of health convergence centers, and the cost of the activity would not differ.

C (NFR+CSB): The expansion of the program's geographic breadth to include additional health convergence centers would increase the cost of implementing this activity.

Sub-AB-CC 5.2g: Evaluation of PSS Data

Evaluation of PSS data to monitor the use of supplements provided by the program was only necessary for arms D (FFR+LNS) and E (FFR+MNP).

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), or C (NFR+CSB): No costs would be incurred for this activity.

D (FFR+LNS) or E (FFR+MNP): There would be an increase in costs of this activity as more data would need to be evaluated and reported to the PSS.

Sub-AB-CC 5.2h: Monitoring Activities at Unspecified Times

These activities were conducted at each health convergence center and discussed among monitoring and evaluation technicians.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The program would serve the same number of health convergence centers, and the cost of the activity would not differ.

C (NFR+CSB): The expansion of the program's geographic breadth to include 160 additional health convergence centers would increase the cost of implementing this activity.

Sub-AB-CC 5.2i: Annual Monitoring

Annual monitoring was conducted at each health convergence center.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The program would serve the same number of health convergence centers, and the cost of the activity would not differ.

C (NFR+CSB): The expansion of the program's geographic breadth to include 160 additional health convergence centers would increase the cost of implementing this activity.

Sub-AB-CC 5.3: Evaluation (Baseline, Midline, and Endline Surveys)

Program evaluation activities, including the baseline, midline, and endline surveys, were more costly for a program with five treatment arms than they likely would have been if only one version of the program had been implemented.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS) or E (FFR+MNP): The cost of evaluation activities would have been less expensive, because it would not have been necessary to evaluate the program by treatment arm. Additionally, IFPRI would not have needed to participate in writing the baseline report.

C (NFR+CSB): The cost of evaluation activities would still have been less expensive than actual costs. However, the evaluation activities would have been more expensive than in the other versions of the program because of the larger implementation area.

7.1.6 AB-CC 6 Training and Supervision of Program Staff

Costs of training and supervising program staff (AB-CC 6) differed as the number of staff members differed. These are summarized according to sub-AB-CC in **Table 7.8** and described in more detail below.

Table 7.8 Differential costs to activities in AB-CC 6: Training and supervision of program staff, *PROCOMIDA*

Sub AB-CC	A (FFR+CSB)	B (RFR+CSB)	C (NFR+CSB)	D (FFR+LNS)	E (FFR+MNP)
6.1 BCC staff training	N	N	Y	N	N
6.2 Monitoring and evaluation staff training	N	N	Y	N	N
6.3 Institutional strengthening staff training	N	N	Y	N	N
6.4 Systematic information management staff training	N	N	Y	N	N
6.5 Nonviolent communication training	N	N	Y	N	N

Note: N=no; Y=yes.

Sub-AB-CC 6.1: BCC Staff Training

The costs of BCC staff training differed according to the number of field technicians employed. Fewer field technicians, who implemented the BCC lessons, were employed for arm C (NFR+CSB), because of lower beneficiary uptake.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The small increase in the additional number of field technicians needed to provide services to the 20 health convergence centers in arm C (NFR+CSB) would not affect the cost of training them.

C (NFR+CSB): More field technicians would need to be trained to accommodate the two additional field offices. Therefore, the cost to train them would also increase.

Sub-AB-CC 6.2: Monitoring and Evaluation Staff Training

The cost of training the monitoring and evaluation technicians differed according to the number employed.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The same number of health convergence centers would be served. Thus, the number of monitoring and evaluation technicians and their training requirements would not differ.

C (NFR+CSB): Six more monitoring and evaluation technicians would need to be trained to accommodate the two additional field offices. Therefore, the cost to train them would also increase.

Sub-AB-CC 6.3: Institutional Strengthening Staff Training

The cost of training institutional strengthening technicians differed according to the number employed.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The same number of health convergence centers would be served. Thus, the number of institutional strengthening staff members and their training requirements would not differ.

C (NFR+CSB): Four additional institutional strengthening technicians would need to be trained to accommodate the two additional field offices. Therefore, the cost to train them would also increase.

Sub-AB-CC 6.4: Systematic Information Management Staff Training

The cost of training data entry technicians differed according to the number employed.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The same number of health convergence centers would be served. Thus, the number of data entry technicians and their training requirements would not differ.

C (NFR+CSB): Two more data entry technicians would need to be trained to accommodate the two additional field offices. Therefore, the cost to train them would also increase.

Sub-AB-CC 6.5: Nonviolent Communication Training

The cost of conducting nonviolent communication trainings with staff differed according to the number of field technicians employed.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The small increase in the additional number of field technicians needed to provide services to the 20 health convergence centers in arm C (NFR+CSB) would not affect the cost of training them.

C (NFR+CSB): More field technicians would need to be trained to accommodate the two new field offices. Thus, training costs would be higher.

7.1.7 AB-CC 7 Advocacy, Promotion, and Social Mobilization

The decrease in program complexity by implementing only a single treatment arm would decrease costs of advocacy, promotion, and social mobilization (AB-CC 7). In particular, less time would be spent coordinating with government agencies. The costs are summarized according to sub-AB-CC in **Table 7.9** and described in more detail below.

Table 7.9 Differential costs to activities in AB-CC 7: Advocacy, promotion, and social mobilization, *PROCOMIDA*

Sub AB-CC	A (FFR+CSB)	B (RFR+CSB)	C (NFR+CSB)	D (FFR+LNS)	E FFR+MNP)
7.1 Host country agreement	Y	Y	Y	N	N
7.2 Sensitization and local approval	N	N	N	N	N
7.3 Permission to perform study	Y	Y	Y	N	N
7.4 Meetings and workshops	N	N	N	N	N

Note: N=no; Y=yes.

Sub-AB-CC 7.1: Host Country Agreement

The distribution of rice, beans, oil, and CSB was easily negotiated with SESAN and MSPAS. Additional time was spent negotiating the distribution of LNS and MNP. Thus, the costs of negotiating the distribution of commodities as part of the HCA would vary according to the type of commodities being distributed.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), or C (NFR+CSB): Costs would decrease since less time would be needed to conduct this activity, as the permissions to distribute rice, beans, oil, and CSB were more quickly negotiated.

D (FFR+LNS) or E (FFR+MNP): The costs would remain the same as those for negotiating the agreement for the complete program, because additional time was spent negotiating the distribution of LNS and MNP.

Sub-AB-CC 7.3: Permission to Perform Study

Additional time was spent gaining permission to conduct the study because the study included LNS and MNP.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), or C (NFR+CSB): Costs would have decreased since there would have been less time spent gaining permission to conduct a study that only involved distribution of rice, beans, oil, and CSB.

D (FFR+LNS) or E (FFR+MNP): The costs would remain the same as those for negotiating the complete program, because additional time was spent negotiating permission to conduct a study involving LNS and MNP.

7.1.8 AB-CC 8 Managing, Planning, and Administration

As with AB-CC 7, decreasing program complexity and implementing a single treatment arm would decrease the management, planning, and administration costs (AB-CC 8). These are summarized according to sub-AB-CC in **Table 7.10** and described in more detail below.

Table 7.10 Differential costs to activities in AB-CC 8: Managing, planning, and administration, *PROCOMIDA*

Sub AB-CC	A (FFR+CSB)	B (RFR+CSB)	C (NFR+CSB)	D (FFR+LNS)	E (FFR+MNP)
8.1 Human resources	N	N	N	N	N
8.2 Procurement	N	N	N	N	N
8.3 Pre-implementation logistics	Y	Y	Y	Y	Y
8.4 Offices and infrastructure	N	N	Y	N	N
8.5 Headquarters support	N	N	N	N	N

Note: N=no; Y=yes.

Sub-AB-CC 8.3: Pre-Implementation Logistics

Coordination and planning were made more costly by implementing multiple treatment arms.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), C (NFR+CSB), D (FFR+LNS), or E (FFR+MNP): Pre-implementation logistics would have been less costly if the program had been implemented as any single treatment arm. The reduced inputs would have been similar regardless of which treatment arm was implemented.

Sub-AB-CC 8.4: Offices and Infrastructure

Office and infrastructure needs were proportional to the number of staff members employed by the program.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The small increase in the additional number of field technicians needed to provide services to the 20 health convergence centers in arm C (NFR+CSB) would not affect the cost of managing offices and infrastructure.

C (NFR+CSB): Two additional field offices would be opened to accommodate additional staff, thus increasing the cost of this activity.

7.1.9 AB-CC 9 Systematic Information Management

Costs of systematic information management (AB-CC 9) would decrease if any single treatment arm were implemented. The lower costs would be due largely to the reduction in program complexity, but also because the beneficiary information management system was more involved for delivering LNS and MNP (**Table 7.11**). The differences are described by sub-AB-CC in more detail below.

Table 7.11 Differential costs to activities in AB-CC 9: Systematic information management, *PROCOMIDA*

Sub-AB-CC	A (FFR+CSB)	B (RFR+CSB)	C (NFR+CSB)	D (FFR+LNS)	E (FFR+MNP)
9.1 Commodity tracking system	Y	Y	Y	Y	Y
9.2 Beneficiary information management	N	N	Y	Y	Y
9.3 Coverage	N	N	N	N	N

Note: N=no; Y=yes.

Sub-AB-CC 9.1: Commodity Tracking System

The commodity tracking system tracked the availability of commodities. It was necessary to design separate components for each commodity and supplement.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB), B (RFR+CSB), D (FFR+LNS), or E (FFR+MNP): The design would have been less complicated, and therefore less costly, if only one family ration size and type of individual ration needed to be tracked.

C (NFR+CSB): The cost of designing the commodity tracking system would be even less costly than for the other arms, because only CSB would need to be tracked.

Sub-AB-CC 9.2: Beneficiary Information Management

Many aspects of managing beneficiary information did not differ across the treatment arms. However, an additional component was necessary to accommodate LNS and MNP, which were packaged in two different forms: (1) one for pregnant women and mothers with a child under 6 months of age and (2) one for children 6–23 months. Moreover, the two additional field offices for version C (NFR+CSB) would increase the number of data entry technicians and other personnel to manage beneficiary information.

How costs would differ from actual costs if a single version of the program were implemented:

A (FFR+CSB) or B (RFR+CSB): Costs would be lower, because the system would not need to accommodate the needs of the differential LNS and MNP packaging.

C (NFR+CSB): The system would not need to accommodate the differential LNS and MNP packaging. However, the additional personnel time necessary to manage beneficiary information in the database would lead to an overall increase in costs.

D (FFR+LNS) or E (FFR+MNP): The cost of developing the management system for LNS and MNP packaging would remain the same, and costs would increase to accommodate the larger number of beneficiaries receiving these supplements.

7.2 Identifying Differential Costs by Treatment Arm: *Tubaramure,* Burundi

The differences in the duration of eligibility for food rations affected the cost of program activities in two ways. First, it changed how long many activities directly related to food distribution needed to be organized. For example, if all children received food rations up to 18 months (as in the T18 arm), these activities would end 6 months earlier (compared with T24), because the cohort of beneficiaries that enrolled at the end of the recruitment period would complete their food ration eligibility 6 months earlier. If all beneficiaries received a TNFP program, these activities would start at the same time (as compared with T24), in order to begin distributing food to mothers of children under 6 months of age.[34]

Second, the duration of food distribution affected the number of beneficiaries who were eligible to receive food rations in any given month. For example, the cost of importing food commodities (including overland transportation to the central warehouse) was directly related to the quantity of food being imported. The activities that varied according to the number of beneficiaries who were eligible to receive food rations each month incurred higher monthly costs in treatment arms in which beneficiaries received food rations for a longer period of time.[35] Specifically, in the T24 arm, beneficiaries were eligible for 29 months[36] of food distributions; T24 beneficiaries, on average, enrolled in the program in time to participate in 27 distributions.[37] In the T18 arm, in which beneficiary eligibility ended 6 months earlier, beneficiaries were eligible for 23 months of distributions and, on average, were enrolled for 21 distributions. In the TNFP arm, beneficiaries were eligible for 24 months of distribution and, on average, were enrolled for 23.

[34] In the TNFP treatment arm, only pregnant women could register at the first enrollment event, and women with children under 6 months of age were able to enroll once the program was under way. This was different from the general enrollment *collines* and other treatment arms in which women with children under 6 months of age could register at the first enrollment event. In comparing the costs of treatment arms, we assume that if TNFP had been implemented everywhere, then mothers with children under 6 months of age would have been enrolled and received food rations at the first distribution as was done elsewhere.
[35] Even though each treatment arm enrolled similar numbers of beneficiaries, the duration of eligibility for food rations would affect the number of beneficiaries being served in any given month.
[36] This assumes enrollment at 4 months gestation and 5 months of eligibility during pregnancy.
[37] Based on analyses of the beneficiary database maintained by the *Tubaramure* monitoring and evaluation unit.

7.2.1 AB-CC 1: Supply and Logistics of Food Commodity Distribution

If the *Tubaramure* program were implemented in all general enrollment and treatment *collines* as any one of the three treatment arms, the cost of the supply and logistics of food commodity distribution would differ from the actual costs incurred by the *Tubaramure* program (**Table 7.12)**. Cost differences were a reflection of importing, storing, and coordinating the transportation of the commodities. They are described in more detail below.

Table 7.12 Differential costs to activities in AB-CC 1: Supply and logistics of food commodity distribution, *Tubaramure*

Sub-AB-CC	T24	T18	TNFP
1.1 Food commodity orders and imports			
1.1a Food commodity orders	N	N	N
1.1b Food commodity imports	Y	Y	Y
1.2 Food commodity management and storage	Y	Y	Y
1.3 Coordination of food commodity transportation and distribution	Y	Y	Y
1.4 Monetization	N	N	N

Note: Note: N=no; Y=yes.

Sub-AB-CC 1.1b: Food Commodity Imports

The cost of importing food differed by treatment arm because of differences in the number of beneficiaries who were eligible to received food rations at any given time and, thus, the overall amount of food being imported. This directly affected the surveyor's and clearing and forwarding agents' time and the cost of transporting these commodities to the warehouse.

How costs would differ from actual costs if a single version of the program were implemented:

T24: Larger amounts of the commodities would be imported to account for six additional months of distributions in the 15 T18 *collines* and four additional months in the 15 TNFP *collines*. This would lead to an increase in cost.

T18: Smaller amounts of the commodities would be imported, because beneficiaries in the 205 general enrollment and 15 T24 *collines* would be eligible for six fewer distributions. However, the 15 TNFP *collines* would require two additional distributions. Overall, costs would be lower.

TNFP: Smaller amounts of food commodities would be imported, because beneficiaries in the 205 general enrollment and 15 T24 *collines* would be eligible for four fewer distributions, and beneficiaries in the 15 T18 *collines* would be eligible for two fewer distributions. This would lead to lower costs.

Sub-AB-CC 1.2: Food Commodity Management and Storage

The costs of this activity differed based on the amount of time it was necessary to rent the warehouse throughout the duration of the program (6 months less in T18). Costs also differed across treatment arms as a result of the overall quantity of food managed and the amount of time needed to manage incoming food commodities and to conduct monthly inventories.

How costs would differ from actual costs if a single version of the program were implemented:

T24: There would be no difference in the cost of rent. However, there would be increased time spent managing and inventorying food commodities to accommodate the increase in food commodities needed for the six additional distribution months in the T18 *collines* and four additional in the TNFP *collines*.

T18: The cost to rent the warehouse would be lower, because food distributions would end 6 months earlier. Additionally, the cost of labor to manage and inventory food commodities would be less because beneficiaries would on average receive only 21 months of food distributions.

TNFP: There would be no difference in the cost of rent. However, the program would need to manage a smaller amount of food commodities because, on average, beneficiaries would register in time to receive 23 months of distributions.

Sub-AB-CC 1.3: Coordination of Food Commodity Transportation and Distribution

The cost of coordinating distributions, which included preparing the monthly food orders for the distribution sites, distribution waybills, and distribution reports, varied according to the number of beneficiaries eligible to receive food rations.

How costs would differ from actual costs if a single version of the program were implemented:

T24: Beneficiaries in the 15 *collines* selected for the T18 arm would participate for an additional 6 months, and each beneficiary in the 15 TNFP *collines* would, on average, participate for an additional 4 months. Thus, the costs of this activity would be higher.

T18: Beneficiaries in the 205 general enrollment and 15 T24 *collines* would be eligible for food rations for 6 months less, and beneficiaries in the 15 TNFP *collines* would be eligible for two additional months. Overall, the costs would be lower.

TNFP: Beneficiaries in the 205 general enrollment and 15 T24 *collines* could be eligible for food rations for 4 months less, and beneficiaries in the 15 T18 *collines* would be eligible for 2 months less. Overall, the costs would be lower.

7.2.2 AB-CC 2: Food Ration Distribution

If any one of the three treatment arms were implemented in all general enrollment and treatment *collines*, the costs incurred to AB-CC 2 (food ration distribution) would vary based on the number of beneficiaries being served at each distribution and the number of months that distribution sites were operating. Specifically, differing costs were a reflection of the differences in the management and repackaging of food rations, the transportation of food commodities to distribution sites, and the monitoring of eligible beneficiaries (**Table 7.13**). How they differed by arm is summarized below.

Table 7.13: Differential costs to activities in AB-CC 2: Food ration and supplement distribution, *Tubaramure*

Sub-AB-CC	T24	T18	TNFP
2.1 Community coordination	N	N	N
2.2 Repackaging and distribution of food rations			
2.2a Selection of distribution sites	N	N	N
2.2b Management of distribution	Y	Y	Y
2.2c Repackaging and distribution of food rations	Y	Y	Y
2.3 Transportation	N	Y	Y
2.4 Beneficiary enrollment			
2.4a Beneficiary cards	N	N	N
2.4b Beneficiary enrollment lists	N	N	N
2.4c Monitoring eligibility of beneficiaries	Y	Y	Y
2.5 Materials and supplies for food rations	N	N	N

Note: N=no; Y=yes.

Sub-AB-CC 2.2b: Management of Distribution

Regardless of the number of beneficiaries served at a distribution, the same activities were conducted to manage the distributions, and site managers were paid a set salary. Thus, the cost of this activity did not differ by the number of beneficiaries being served at a distribution. However, the cost of these activities differed by treatment arm, because food ration distributions ended 6 months earlier in the T18 arm.

How costs would differ from actual costs if a single version of the program were implemented:

T24: Distribution sites for the 15 *collines* that had been assigned to the T18 arm would need to remain open an additional 6 months. This would lead to higher costs.

T18: Distribution sites in the 205 general enrollment, 15 T24, and 15 TNFP *collines* would be able to close 6 months earlier, leading to lower costs.

TNFP: Distribution sites for the 15 *collines* that had been assigned to the T18 arm would need to remain open an additional 6 months. This would lead to higher costs.

Sub-AB-CC 2.2c: Repackaging and Distribution of Food Rations

Similar to the management of distributions (sub-AB-CC 2.2b), the cost of the activities needed to repackage the distributions did not differ according to the number of beneficiaries served at a distribution. Local assistants, who repackaged food commodities and organized the distribution activities on distribution days, were paid a flat rate, and the number needed did not differ based on the number of food rations distributed. However, the cost of these activities differed by treatment arm, because food ration distributions ended 6 months earlier in the T18 arm and started 1 month later in the TNFP arm.

How costs would differ from actual costs if a single version of the program were implemented:

Costs differed by treatment arm in the same way that they did for sub-AB-CC 2.2b.

Sub-AB-CC 2.3: Transportation

Organizing contracts for the transportation of food commodities would only be necessary in months when beneficiaries were receiving rations.

How costs would differ from actual costs if a single version of the program were implemented:

T24: The total amount of time that the program distributed rations would remain the same, and costs would remain the same.[38]

T18: Food distribution activities would end 6 months earlier, and costs would be lower.

TNFP: The total amount of time that the program distributed rations would remain the same, and costs would remain the same.

Sub-AB-CC 2.4c: Monitoring Eligibility of Beneficiaries

The beneficiary database was not automated for the first year and a half of the program, and even after it was automated, updating it was labor intensive. Thus, the amount of time invested in it varied according to the number of beneficiaries who were eligible for food rations. In treatment arms in which beneficiaries received food rations for shorter amounts of time, fewer beneficiaries were eligible for food rations at any given point.

How costs would differ from actual costs if a single version of the program were implemented:

T24: Beneficiaries in the 15 *collines* selected for the T18 arm would be eligible for food ration distributions for an additional 6 months, and those in the 15 TNFP *collines* would be eligible for an additional 4 months. Thus, the costs of this activity would be higher.

T18: Beneficiaries in the 205 general enrollment and 15 T24 *collines* would be eligible for food rations for 6 months less, and beneficiaries in the 15 TNFP *collines* would be eligible for two additional months. Overall, the costs would be less.

TNFP: Beneficiaries in the 205 general enrollment and 15 T24 *collines* would be eligible for food rations for 4 months less, and beneficiaries in the 15 T18 *collines* would be eligible for 2 months less. Overall, the costs would be less.

7.2.3 AB-CC 3: BCC Development and Execution

BCC development and execution (AB-CC 3) were conducted for beneficiaries in the general enrollment *collines* and all treatment arms from pregnancy until the child was 2 years old, regardless of how long beneficiaries were eligible to receive food rations. Therefore, the costs incurred to AB-CC 3 would not differ if the program were implemented as a single treatment arm.

7.2.4 AB-CC 4: Institutional Strengthening of Health Services

Activities for AB-CC 4 (the institutional strengthening of health services) did not differ according to treatment arm. Therefore, the costs incurred to AB-CC 4 would not differ if the program were implemented as a single treatment arm.

7.2.5 AB-CC 5: Monitoring and Evaluation

Most monitoring and evaluation activities (AB-CC 5) incurred similar costs in all treatment arms (**Table 7.14**), except for monitoring food ration sales in local markets (sub-AB-CC 5.2b).

[38] The additional 6 months of deliveries to the 15 T18 *collines* that were already part of established delivery routes would not notably increase the amount of labor required to organize these contracts.

Table 7.14 Differential costs to activities in AB-CC 5: Monitoring and evaluation, *Tubaramure*

Sub-AB-CC	T24	T18	TNFP
5.1 Planning	N	N	N
5.2 Monitoring			
5.2a Quarterly monitoring	N	N	N
5.2b Monitoring food ration utilization	Y	Y	Y
5.2c Additional monitoring	N	N	N
5.2d Monitoring trigger indicators	N	N	N
5.3 Evaluation			
5.3a Baseline survey	N	N	N
5.3b Midline survey	N	N	N
5.3c Endline survey	N	N	N

Note: N=no; Y=yes.

Sub-AB-CC 5.2b: Monitoring Food Ration Utilization

One component of this activity was hiring three end-use agents to monitor the sale of Title II food rations in local markets and the consumption of the rations in beneficiary households. The amount of travel required of these agents depended on the number of beneficiaries receiving rations. Additionally, in the T18 arm, their activities ended 6 months earlier.

How costs would differ from actual costs if a single version of the program were implemented:

T24: Travel costs would increase to accommodate the extra visits required to beneficiaries assigned to the 15 T18 and 15 TNFP *collines*. The three end-use agents would be employed for the duration of the program.

T18: Travel costs would decrease, because fewer food rations would be distributed and fewer beneficiary visits would need to be made. The work of the end-use agents would end 6 months earlier, and costs would decrease.

TNFP: Travel costs would decrease, because fewer food rations would be distributed and fewer beneficiary visits would need to be made. The work of the end-use agents would start at the same time as in the actual program.

7.2.6 AB-CC 6: Training and Supervision of Program Staff

Most activities associated with training and supervising program staff incurred similar costs for all treatment arms; however, the cost of supervising food distribution sites and end-use agents differed by treatment arm **(Table 7.15).** Food distribution staff would have been employed for a shorter time if the T18 or TNFP arms were implemented in all *collines*, but a similar number of food distribution staff members would have been hired overall, and supervisory activities would have been conducted for a shorter time.

Table 7.15 Differential costs to activities in AB-CC 6: Training and supervision of program staff, Tubaramure

Sub-AB-CC	T24	T18	TNFP
6.1 BCC training			
6.1a Training of field staff on BCC modules and specific-age cards	N	N	N
6.1b Training of consortium staff on BCC components	N	N	N
6.1c Supervision of BCC supervisors and *Tubaramure* health promoters	N	N	N
6.1d Training on agricultural methods	N	N	N
6.1e Recipe training	N	N	N
6.2 Monitoring and evaluation			
6.2a Indicator training	N	N	N
6.2b Supervision of field staff	N	N	N
6.3 Institutional strengthening	N	N	N
6.4 Food ration distribution training and supervision			
6.4a Supervision of food ration distribution sites	Y	Y	Y
6.4b Supervision of end-use agents	Y	Y	Y
6.4c Training of food ration distribution site managers	N	N	N

Note: N=no; Y=yes.

Sub-AB-CC 6.4a: Supervision of Food Ration Distribution Sites

The cost to supervision of food distribution sites differed by treatment arm. These activities ended 6 months earlier in the T18 arm.

How costs would differ from actual costs if a single version of the program were implemented:

T24: Costs would increase to accommodate the extra months of distribution for the 15 T18 *collines*.

T18: Food ration distributions would end 6 months earlier, and the costs of supervision would be lower for the 205 general enrollment, 15 T24, and 15 TNFP *collines.*

TNFP: Costs would increase to accommodate the extra months of distribution for the 15 TN18 *collines.*

Sub-AB-CC 6.4b: Supervision of End-Use Agents

The cost of supervising end-use agents differed by treatment arm. These activities ended 6 months earlier in the T18 arm.

How costs would differ from actual costs if a single version of the program were implemented:

The reasoning for how they would differ by treatment arm is identical to what was described for sub-AB-CC 6.4a.

7.2.7 AB-CC 7: Advocacy, Promotion, and Social Mobilization

Most activities in AB-CC 7, which included advocacy, promotion, and social mobilization, would have been implemented at a similar cost, regardless of the number of treatment arms (**Table 7.16**). However, the cost of gaining permission to perform the study would have differed.

Table 7.16: Differential costs to activities in AB-CC 7: Advocacy, promotion, and social mobilization, *Tubaramure*

Sub-AB-CC	T24	T18	TNFP
7.1 Host country agreement	N	N	N
7.2 Sensitization and local approval	N	N	N
7.3 Permission to perform study	Y	Y	Y
7.4 Meetings and workshops	N	N	N

Note: N=no; Y=yes.

Sub-AB-CC 7.3: Permission to Perform Study

Gaining permission to conduct the study was more time-intensive with three treatment arms, because of the need to describe the reasoning for each research arm.[39]

How costs would differ from actual costs if a single version of the program were implemented:

If any single version of the program were implemented, the cost of gaining permission to conduct the study would have been less.

7.2.8 AB-CC 8: Management, Planning, and Administration

The activities in AB-CC 8, which included management, planning, and administration, would have incurred similar costs, regardless of treatment arm.

[39] We assume that a similar impact evaluation with only one treatment arm would be conducted instead.

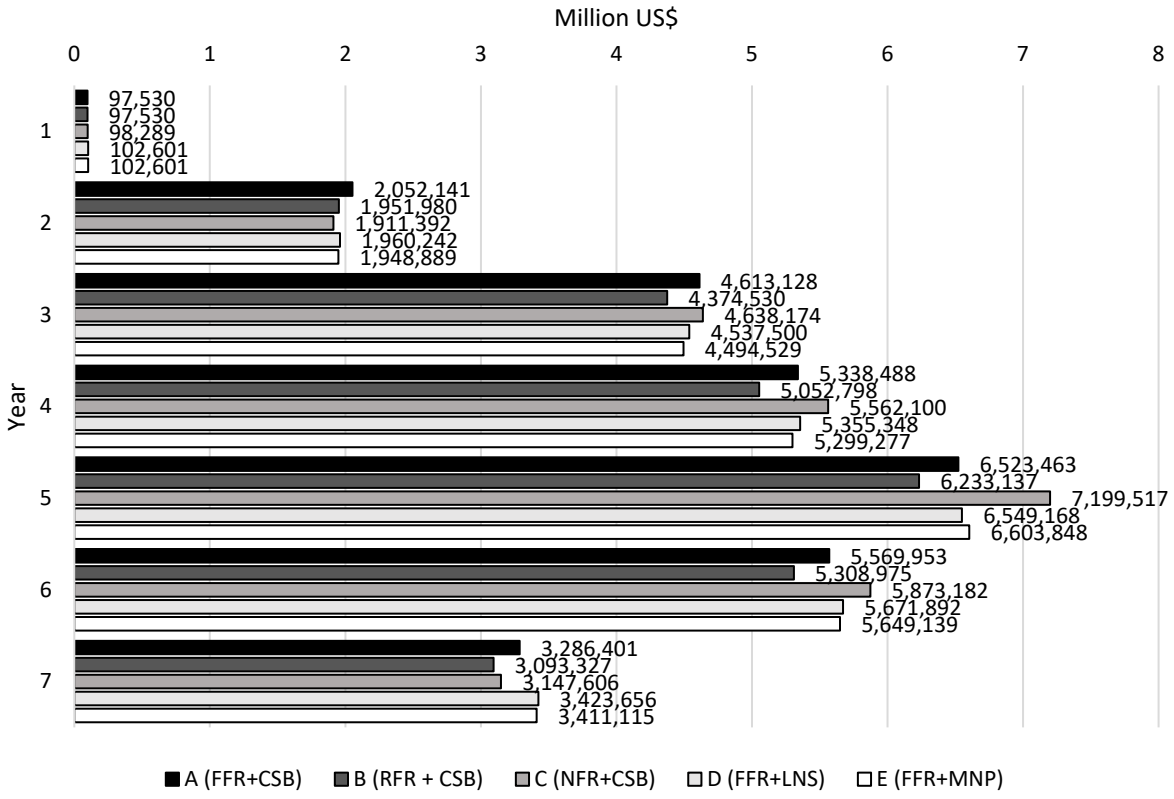
8. Program Activity Costs by Treatment Arm

8.1 Program Activity Costs by Treatment Arm: *PROCOMIDA*, Guatemala

If a single version of the *PROCOMIDA* program had been implemented to cover the same number of beneficiaries that was covered in the *PROCOMIDA* program, version C (NFR+CSB) of the program would have been the most expensive at US$28.4 million[40] (**Table 8.1**). The higher cost of this version was largely attributable to the lower uptake of the program and the subsequent need to expand the geographic coverage of the program to reach the same number of beneficiaries. The least expensive version of the program to implement would have been version B (RFR+CSB), which would have cost an estimated US$26.1 million (**Table 8.1**). The primary driving factor for the lower cost of this version was related to the smaller quantities of food that had to be managed and transported. The total costs of implementing any of the three versions of the program that distributed the FFR along with an individual ration differed by less than 0.5 percent of total costs and fell between versions C (NFR+CSB) and B (RFR+CSB) of the program in terms of total costs (Table 8.1).

During the first 2 years of the program, costs were similar across treatment arms (**Figure 8.1**). As the program continued and beneficiary enrollment grew, version C (NFR+CSB) was more expensive than the other four versions, and version B (RFR+CSB) was relatively less expensive during these peak program years.

Figure 8.1 Annual program activity costs by treatment arm, *PROCOMIDA*

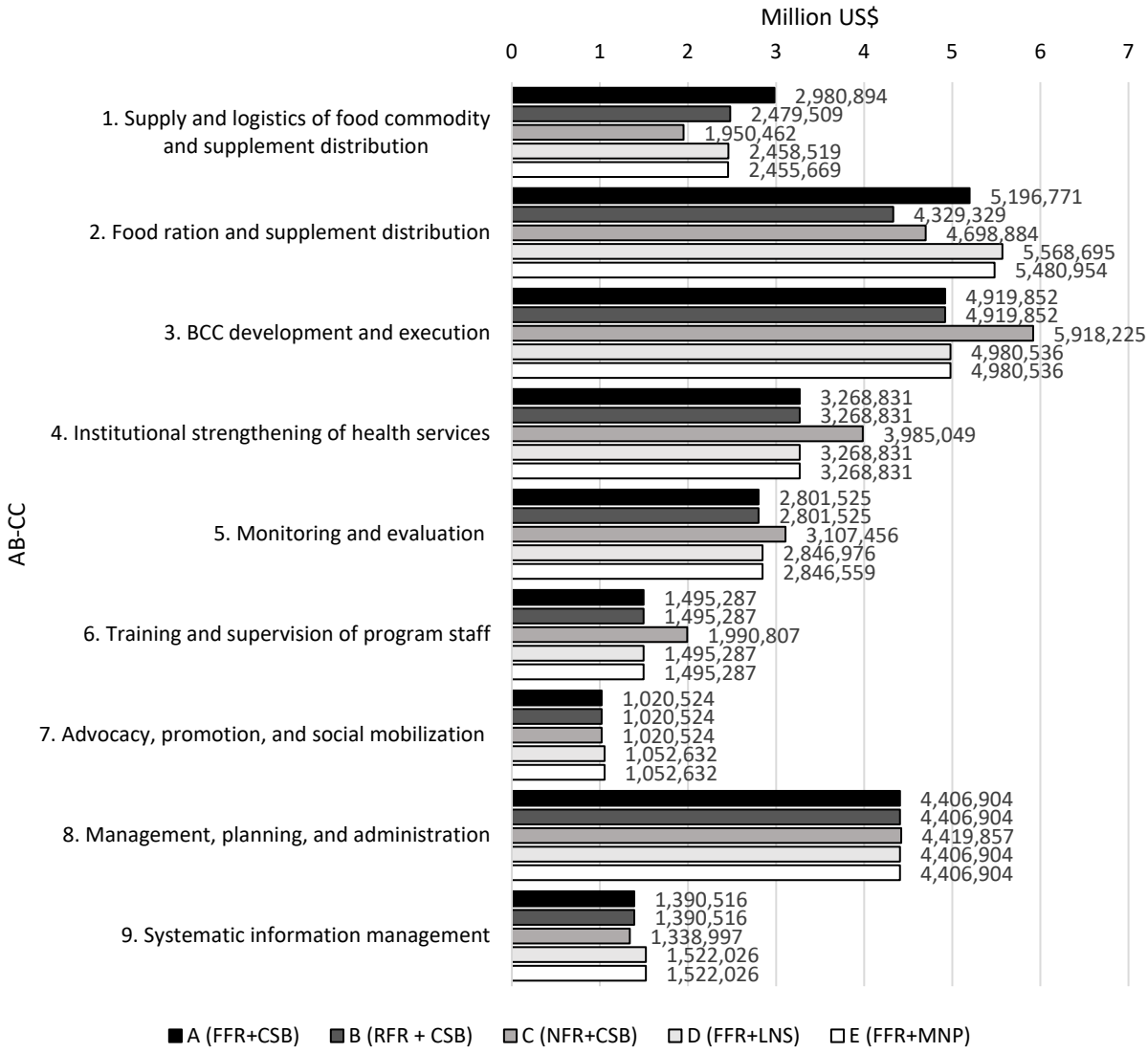


Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

[40] The costs reported throughout this chapter only reflect program activity costs and do not include the cost of food rations and supplements.

The five versions of the *PROCOMIDA* program would have incurred different costs in seven of the nine AB-CCs; differences in costs across versions for AB-CC 7 (advocacy, promotion, and social mobilization) and AB-CC 8 (management, planning, and administration) were trivial (**Figure 8.2**). The costs of AB-CC 1 (supply and logistics of food commodity and supplement distribution) and AB-CC 2 (food ration and supplement distribution) varied primarily according to the size of the family ration, with the versions distributing the FFR being the most expensive, followed by the RFR; NFR was least expensive. AB-CC 3 (BCC development and execution), AB-CC 4 (institutional strengthening of health services), AB-CC 5 (monitoring and evaluation), and AB-CC 6 (training and supervision of program staff) would have all been considerably more expensive in version C (NFR+CSB) due to the need to expand the geographic coverage of the program to reach the same number of beneficiaries. AB-CC 9 (systematic information management) was more expensive in versions D (FFR+LNS) and E (FFR+MNP).

Figure 8.2 Total cost of each AB-CC by treatment arm, *PROCOMIDA*



Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

In the five versions of *PROCOMIDA*, costs were distributed similarly across the majority of the different types of inputs, with the exceptions of personnel, transportation, and program staff travel costs (**Table 8.1**). The largest difference in terms of monetary costs across the versions would have been a difference of about US$1.4 million for personnel costs, which would have been the highest in version C (NFR+CSB) of the program and the lowest in version B (RFR+CSB) (**Table 8.1**). Proportionally, the largest differences in costs would have been for transportation and program staff travel costs. Across the five versions of the program, transportation costs would have varied by up to 49 percent (US$1.2 million) with the highest costs in version A (FFR+CSB) and the lowest in version C (NFR+CSB). Costs for program staff travel would have varied by up to 38 percent (US$857,200, with the highest costs in version C (NFR+CSB) and the lowest in version B (RFR+CSB).

Table 8.1 Total input costs by treatment arm, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Type of input	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
Recurrent										
Personnel	13,696,315	49.8	13,630,333	52.2	15,004,487	52.8	14,377,550	52.1	14,377,106	52.3
Materials and supplies	925,725	3.4	842,733	3.2	699,432	2.5	1,020,676	3.7	1,020,676	3.7
Media	14,144	<0.1	14,144	<0.1	14,144	<0.1	14,144	<0.1	14,144	<0.1
Transportation	3,608,895	13.1	2,761,882	10.6	2,426,010	8.5	2,901,190	10.5	2,810,599	10.2
Maintenance	171,060	0.6	169,493	0.6	173,048	0.6	171,687	0.6	171,687	0.6
Utilities	467,205	1.7	457,846	1.8	522,134	1.8	479,766	1.7	479,766	1.7
Rent	1,497,002	5.4	1,364,037	5.2	1,362,367	4.8	1,427,232	5.2	1,427,232	5.2
Travel for program staff	2,285,548	8.3	2,281,183	8.7	3,138,393	11.0	2,337,660	8.5	2,337,660	8.5
Trainings for staff and service providers	569,024	2.1	569,024	2.2	748,534	2.6	569,024	2.1	569,024	2.1
Sub-grants	1,004,653	3.7	1,000,086	3.8	987,527	3.5	1,004,653	3.6	1,004,653	3.6
Consultations	701,651	2.6	701,651	2.7	701,651	2.5	701,651	2.5	701,651	2.5
Miscellaneous	87,394	0.3	87,392	0.3	86,580	0.3	87,479	0.3	87,479	0.3
Capital										
Transportation	578,103	2.1	576,638	2.2	705,580	2.5	593,096	2.1	593,113	2.1
Equipment	1,748,754	6.4	1,530,475	5.9	1,712,717	6.0	1,784,256	6.5	1,784,256	6.5
Furniture	125,630	0.5	125,195	0.5	147,704	0.5	130,341	0.5	130,352	0.5
Total costs by input										
Recurrent	25,028,616	91.1	23,879,804	91.5	25,864,308	91.0	25,092,714	90.9	25,001,678	90.9
Capital	2,452,487	8.9	2,232,307	8.5	2,566,002	9.0	2,507,693	9.1	2,507,721	9.1
Total	27,481,104	100.0	26,112,112	100.0	28,430,309	100.0	27,600,407	100.0	27,509,399	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

8.1.1 AB-CC 1 Supply and Logistics of Food Commodity and Supplement Distribution

The total cost of implementing AB-CC 1 (supply and logistics of food commodity and supplement distribution) would have been the most expensive for version A (FFR+CSB) of the program at US$3.0 million (**Table 8.2**). Version C (NFR+CSB) would have been the least expensive at US$2.0 million. It would have cost approximately US$2.5 million to implement AB-CC 1 in versions B (RFR+CSB), D (FFR+LNS), and E (FFR+MNP).

All of the sub-AB-CCs that differed by treatment arm were consistently the most expensive in version A (FFR+CSB), and the least expensive in version C (NFR+CSB). The three sub-AB-CCs with the widest range of costs across the five program versions were transportation to the Cobán warehouse (sub-AB-CC 1.3a), food commodity storage in the Cobán warehouse (sub-AB-CC 1.3b), and transportation of food commodities from port to the in-transit warehouse (sub-AB-CC 1.2a). These differed between versions A (FFR+CSB) and C (NFR+CSB) by US$378,500, US$224,700, and US$159,800, respectively.

The differences in input costs were again largest between versions A (FFR+CSB) and C (NFR+CSB), but the distribution across input costs would have been similar across all five versions of the program (**Table 8.3**). The largest differences in absolute costs by type of input were for rent and recurrent transportation.

Table 8.2 Cost of activities by treatment arm for AB-CC 1: Supply and logistics of food commodity and supplement distribution, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Sub-AB-CC	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
1.1 Food commodity orders and imports										
1.1a Food commodity orders										
Start-up	5,638	0.2	5,638	0.2	4,063	0.2	5,638	0.2	5,638	0.2
Post-start-up	239,858	8.0	239,858	9.7	157,470	8.1	239,858	9.8	239,858	9.8
Total	245,496	8.2	245,496	9.9	161,533	8.3	245,496	10.0	245,496	10.0
1.1b Food commodity imports										
Start-up	12,477	0.4	12,477	0.5	12,477	0.6	12,477	0.5	12,477	0.5
Post-start-up	188,012	6.3	145,963	5.9	81,271	4.2	166,719	6.8	163,870	6.7
Total	200,488	6.7	158,440	6.4	93,748	4.8	179,196	7.3	176,346	7.2
1.2 Food commodity management and storage										
1.2a Transportation of food commodities from port to in-transit warehouse										
Start-up	2,495	<0.1	2,495	<0.1	2,495	<0.1	2,495	<0.1	2,495	<0.1
Post-start-up	251,042	8.4	201,361	8.1	91,252	4.7	179,839	7.3	179,839	7.3
Total	253,538	8.5	203,856	8.2	93,747	4.8	182,334	7.4	182,334	7.4
1.2b Food commodity storage in Zacapa warehouse										
Start-up	1,248	<0.1	1,248	<0.1	1,248	<0.1	1,248	<0.1	1,248	<0.1
Post-start-up	90,968	3.1	90,968	3.7	14,261	0.7	63,371	2.6	63,371	2.6
Total	92,216	3.1	92,216	3.7	15,508	0.8	64,619	2.6	64,619	2.6
1.3 Coordination of food commodity transportation and distribution										
1.3a Transportation to Cobán warehouse										
Start-up	1,226	<0.1	1,226	<0.1	1,226	<0.1	1,226	<0.1	1,226	<0.1
Post-start-up	863,216	29.0	633,555	25.6	484,686	24.8	645,333	26.2	645,333	26.3
Total	864,443	29.0	634,781	25.6	485,912	24.9	646,559	26.3	646,559	26.3
1.3b Food commodity storage in Cobán warehouse										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	1,106,277	37.1	926,283	37.4	881,577	45.2	921,878	37.5	921,878	37.5
Total	1,106,277	37.1	926,283	37.4	881,577	45.2	921,878	37.5	921,878	37.5
1.4 Monetization										
Start-up	2,495	<0.1	2,495	<0.1	2,495	<0.1	2,495	<0.1	2,495	<0.1
Post-start-up	215,941	7.2	215,942	8.7	215,941	11.1	215,941	8.8	215,941	8.8
Total	218,437	7.3	218,437	8.8	218,437	11.2	218,437	8.9	218,437	8.9
Total										
Start-up	25,579	0.9	25,579	1.0	24,004	1.2	25,579	1.0	25,579	1.0
Post-start-up	2,955,314	99.1	2,453,929	99.0	1,926,458	98.8	2,432,940	99.0	2,430,090	99.0
Total	2,980,894	100.0	2,479,509	100.0	1,950,462	100.0	2,458,519	100.0	2,455,669	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

Table 8.3 Input costs by treatment arm for AB-CC 1: Supply and logistics of food commodity and supplement distribution, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Type of input	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
Recurrent										
Personnel	519,959	17.4	492,549	19.9	378,329	19.4	510,295	20.8	510,268	20.8
Materials and supplies	89,501	3.0	72,437	2.9	70,247	3.6	72,749	3.0	72,749	3.0
Media	-	-	-	-	-	-	-	-	-	-
Transportation	1,388,412	46.6	1,061,568	42.8	710,295	36.4	1,024,230	41.7	1,021,381	41.6
Maintenance	10,400	0.3	10,407	0.4	9,839	0.5	10,173	0.4	10,173	0.4
Utilities	29,230	1.0	25,991	1.0	25,047	1.3	26,371	1.1	26,371	1.1
Rent	575,627	19.3	459,878	18.5	403,503	20.7	461,395	18.8	461,395	18.8
Travel for program staff	65,256	2.2	64,914	2.6	60,088	3.1	64,841	2.6	64,841	2.6
Trainings for staff and service providers	-	-	-	-	-	-	-	-	-	-
Sub-grants	179,437	6.0	179,437	7.2	179,437	9.2	179,437	7.3	179,437	7.3
Consultations	-	-	-	-	-	-	-	-	-	-
Miscellaneous	144	<0.1	85	<0.1	140	<0.1	210	<0.1	210	<0.1
Capital										
Transportation	23,661	0.8	23,479	0.9	22,046	1.1	23,361	1.0	23,378	1.0
Equipment	93,707	3.1	83,219	3.4	85,820	4.4	79,981	3.3	79,981	3.3
Furniture	5,617	0.2	5,543	0.2	5,754	0.3	5,599	0.2	5,610	0.2
Total costs by input										
Recurrent	2,857,909	95.9	2,367,267	95.5	1,836,842	94.2	2,349,578	95.6	2,346,701	95.6
Capital	122,985	4.1	112,242	4.5	113,620	5.8	108,941	4.4	108,968	4.4
Total	2,980,894	100.0	2,479,509	100.0	1,950,462	100.0	2,458,519	100.0	2,455,669	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

8.1.2 AB-CC 2: Food Ration and Supplement Distribution

The total cost of implementing AB-CC 2 (food ration and supplement distribution) would have been most expensive in versions A (FFR+CSB), D (FFR+LNS) and E (FFR+MNP), which would have been US$5.2 millsion, US$5.6 million, and US$5.5 million, respectively (**Table 8.4**). AB-CC 2 would have been less expensive in versions B (RFR+CSB) and C (NFR+CSB) of the program, which were US$4.3 million and US$4.7 million, respectively.

The higher cost of version A (FFR+CSB) would be due to the higher cost of transporting larger volumes of food commodities. The higher costs for versions D (FFR+LNS) and E (FFR+MNP) would have been due to the provision of the LNS and MNP (sub-AB-CC 2.6), which was US$624,500 and would have only incurred costs for these two versions. Repackaging and organization of rations and supplements (sub-AB-CC 2.2) would have been most expensive for the versions of the program that distributed a FFR, and the cost of this sub-AB-CC in versions D (FFR+LNS) and E (FFR+MNP) of the program was the most expensive—US$628,800 more expensive than in version C (NFR+CSB).

The largest differences in the absolute costs by type of input were for personnel and recurrent transportation (**Table 8.5**).

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Table 8.4 Input costs by treatment arm for AB-CC 2: Food ration and supplement distribution, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Sub-AB-CC	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
2.1 Community coordination										
Start-up	211,821	4.1	211,821	4.9	228,814	4.9	243,264	4.4	243,264	4.4
Post-start-up	166,993	3.2	166,993	3.8	277,537	5.9	243,064	4.4	243,064	4.4
Total	378,814	7.3	378,814	8.7	506,351	10.8	486,328	8.7	486,328	8.9
2.2 Repackaging and organization of rations										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	1,370,095	26.4	1,019,445	23.5	758,843	16.1	1,387,614	24.9	1,387,614	25.3
Total	1,370,095	26.4	1,019,445	23.5	758,843	16.1	1,387,614	24.9	1,387,614	25.3
2.3 Transportation										
2.3a Designing transportation routes										
Start-up	92,013	1.8	92,013	2.1	94,774	2.0	92,013	1.7	92,013	1.7
Post-start-up	10,361	0.2	10,361	0.2	10,670	0.2	10,361	0.2	10,361	0.2
Total	102,374	2.0	102,374	2.4	105,444	2.2	102,374	1.8	102,374	1.8
2.3b Transportation contracts										
Start-up	25,869	0.5	25,869	0.6	25,869	0.6	25,869	0.5	25,869	0.5
Post-start-up	39,907	0.8	39,907	0.9	39,907	0.8	39,907	0.7	39,907	0.7
Total	65,777	1.3	65,777	1.5	65,777	1.4	65,777	1.2	65,777	1.2
2.3c Transportation to distribution sites										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	1,539,983	29.6	1,025,372	23.6	938,001	20.0	1,152,897	20.7	1,065,156	19.4
Total	1,539,983	29.6	1,025,372	23.6	938,001	20.0	1,152,897	20.7	1,065,156	19.4
2.4 Beneficiary enrollment										
2.4a Beneficiary cards										
Start-up	15,225	0.3	15,225	0.4	15,225	0.3	15,225	0.3	15,225	0.3
Post-start-up	16,287	0.3	16,287	0.4	16,287	0.3	16,287	0.3	16,287	0.3
Total	31,512	0.6	31,512	0.7	31,512	0.7	31,512	0.6	31,512	0.6
2.4b Beneficiary enrollment lists										
Start-up	200,479	3.9	200,479	4.6	200,479	4.3	200,479	3.6	200,479	3.7
Post-start-up	68,398	1.3	68,398	1.6	68,398	1.5	68,398	1.2	68,398	1.2
Total	268,877	5.2	268,877	6.2	268,877	5.7	268,877	4.8	268,877	4.9
2.5 Materials and supplies for food rations										
2.5a Cloth bag design, development, and production										
Start-up	28,345	0.5	28,345	0.7	28,345	0.6	28,345	0.5	28,345	0.5
Post-start-up	9,165	0.2	9,165	0.2	8,826	0.2	9,165	0.2	9,165	0.2
Total	37,511	0.7	37,511	0.9	37,172	0.8	37,511	0.7	37,511	0.7
2.5b Food ration bag design, development, and production										
Start-up	50,736	1.0	48,557	1.1	44,642	1.0	50,736	0.9	50,736	0.9

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Sub-AB-CC	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
Post-start-up	22,185	0.4	22,185	0.5	22,510	0.5	21,113	0.4	21,113	0.4
Total	72,921	1.4	70,742	1.6	67,152	1.4	71,849	1.3	71,849	1.3
2.5c LNS and MNP supplement bag design										
Start-up	-	-	-	-	-	-	10,553	0.2	10,553	0.2
Post-start-up	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	10,553	0.2	10,553	0.2
2.6 LNS and MNP implementation										
Start-up	-	-	-	-	-	-	439,254	7.9	439,254	8.0
Post-start-up	-	-	-	-	-	-	185,243	3.3	185,243	3.4
Total	-	-	-	-	-	-	624,497	11.2	624,497	11.4
2.7 Distribution of food rations to beneficiaries										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	1,328,907	25.6	1,328,907	30.6	1,919,756	40.9	1,328,907	23.9	1,328,907	23.9
Total	1,328,907	25.6	1,328,907	30.6	1,919,756	40.9	1,328,907	23.9	1,328,907	23.9
Total										
Start-up	624,489	12.0	622,310	14.4	638,149	13.6	1,105,739	19.9	1,105,739	20.2
Post-start-up	4,572,282	88.0	3,707,020	85.6	4,060,735	86.4	4,462,956	80.1	4,375,215	79.8
Total	5,196,771	100.0	4,329,329	100.0	4,698,884	100.0	5,568,695	100.0	5,480,954	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

Table 8.5 Input costs by treatment arm for AB-CC 2: Food ration and supplement distribution, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Type of input	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
Recurrent										
Personnel	1,872,662	36.0	1,834,256	42.4	2,329,628	49.6	2,418,864	43.4	2,418,864	43.4
Materials and supplies	354,423	6.8	288,494	6.7	115,014	2.4	402,688	7.2	402,688	7.2
Media	-	-	-	-	-	-	-	-	-	-
Transportation	1,456,548	28.0	936,378	21.6	844,916	18.0	1,105,641	19.9	1,017,900	18.6
Maintenance	18,444	0.4	16,869	0.4	18,553	0.4	20,814	0.4	20,814	0.4
Utilities	37,840	0.7	31,720	0.7	42,581	0.9	44,620	0.8	44,620	0.8
Rent	160,264	3.1	143,049	3.3	159,926	3.4	187,440	3.4	187,440	3.4
Travel for program staff	346,083	6.7	342,060	7.9	528,146	11.2	385,738	6.9	385,738	7.0
Trainings for staff and service providers	-	-	-	-	-	-	-	-	-	-
Sub-grants	22,835	0.4	18,268	0.4	5,709	<0.1	22,835	0.4	22,835	0.4
Consultations	-	-	-	-	-	-	-	-	-	-
Miscellaneous	144	<0.1	143	<0.1	140	<0.1	210	<0.1	210	<0.1
Capital										
Transportation	88,879	1.7	87,596	2.0	113,798	2.4	100,304	1.8	100,304	1.8
Equipment	827,484	15.9	619,692	14.3	526,532	11.2	866,928	15.6	866,928	15.6
Furniture	11,165	0.2	10,805	0.2	13,941	0.3	12,614	0.2	12,614	0.2
Total costs by input										
Recurrent	4,269,242	82.2	3,611,237	83.4	4,044,612	86.1	4,588,849	82.4	4,501,108	82.1
Capital	927,528	17.8	718,092	16.6	654,271	13.9	979,846	17.6	979,846	17.9
Total	5,196,771	100.0	4,329,329	100.0	4,698,884	100.0	5,568,695	100.0	5,480,954	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations or supplements.

8.1.3 AB-CC 3: BCC Development and Execution

The cost of implementing AB-CC 3 (BCC development and execution) would have been most expensive in version C (NFR+CSB) of the program at US$ 5.9 million and least expensive in versions A (FFR+CSB) and B (RFR+CSB) at US$4.9 million USD (**Table 8.8**). The largest differences in costs were attributable to the delivery of BCC lessons (sub-AB-CC 3.3c) and demonstrating the monthly recipes (sub-AB-CC 3.3d), which would have been US$415,100 and US$444,200 more expensive, respectively, in version C (NFR+CSB) than in the other four versions. The increased cost of both of these activities was attributable to the increased geographic scope of the program.

The largest differences in the absolute costs by type of input were for personnel and travel for program staff (**Table 8.7)**.

Table 8.6 Cost of activities by treatment arm for AB-CC 3: BCC development and execution, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Sub-AB-CC	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
3.1 Development of BCC strategy										
3.1a Formative research										
Start-up	259,178	5.3	259,178	5.3	259,178	4.4	319,862	6.4	319,862	6.4
Post-start-up	-	-	-	-	-	-	-	-	-	-
Total	259,178	5.3	259,178	5.3	259,178	4.4	319,862	6.4	319,862	6.4
3.1b Development of key messages										
Start-up	94,477	1.9	94,477	1.9	94,477	1.6	94,477	1.9	94,477	1.9
Post-start-up	-	-	-	-	-	-	-	-	-	-
Total	94,477	1.9	94,477	1.9	94,477	1.6	94,477	1.9	94,477	1.9
3.2 Development of BCC materials										
3.2a Development of lessons										
Start-up	179,508	3.6	179,508	3.6	179,508	3.0	179,508	3.6	179,508	3.6
Post-start-up	80,647	1.6	80,647	1.6	80,647	1.4	80,647	1.6	80,647	1.6
Total	260,155	5.3	260,155	5.3	260,155	4.4	260,155	5.2	260,155	5.2
3.2b Development and production of flip charts										
Start-up	249,817	5.1	249,817	5.1	265,629	4.5	249,817	5.0	249,817	5.0
Post-start-up	57,097	1.2	57,097	1.2	94,669	1.6	57,097	1.1	57,097	1.1
Total	306,913	6.2	306,913	6.2	360,298	6.1	306,913	6.2	306,913	6.2
3.2c Radio spots										
Start-up	11,929	0.2	11,929	0.2	11,929	0.2	11,929	0.2	11,929	0.2
Post-start-up	20,649	0.4	20,649	0.4	20,649	0.3	20,649	0.4	20,649	0.4
Total	32,579	0.7	32,579	0.7	32,579	0.6	32,579	0.7	32,579	0.7
3.2d Poster production										
Start-up	5,836	<0.1	5,836	<0.1	5,836	<0.1	5,836	<0.1	5,836	<0.1
Post-start-up	39,903	0.8	39,903	0.8	39,903	0.7	39,903	0.8	39,903	0.8
Total	45,739	0.9	45,739	0.9	45,739	0.8	45,739	0.9	45,739	0.9
3.2e Publicity sign development and production										
Start-up	113,850	2.3	113,850	2.3	113,850	1.9	113,850	2.3	113,850	2.3
Post-start-up	31,652	0.6	31,652	0.6	31,652	0.5	31,652	0.6	31,652	0.6
Total	145,502	3.0	145,502	3.0	145,502	2.5	145,502	2.9	145,502	2.9
3.2f BCC reports										
Start-up	74,377	1.5	74,377	1.5	74,377	1.3	74,377	1.5	74,377	1.5
Post-start-up	23,321	0.5	23,321	0.5	23,321	0.4	23,321	0.5	23,321	0.5
Total	97,698	2.0	97,698	2.0	97,698	1.7	97,698	2.0	97,698	2.0
3.3 Establishment of groups for the delivery of BCC lessons										
3.3a Selection, training, and role of leader mothers										
Start-up	-	-	-	-	-	-	-	-	-	-

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Sub-AB-CC	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
Post-start-up	70,462	1.4	70,462	1.4	90,206	1.5	70,462	1.4	70,462	1.4
Total	70,462	1.4	70,462	1.4	90,206	1.5	70,462	1.4	70,462	1.4
3.3b Design the typical workday										
Start-up	205,584	4.2	205,584	4.2	205,584	3.5	205,584	4.1	205,584	4.1
Post-start-up	114,371	2.3	114,371	2.3	114,371	1.9	114,371	2.3	114,371	2.3
Total	319,955	6.5	319,955	6.5	319,955	5.4	319,955	6.4	319,955	6.4
3.3c Delivering BCC lessons										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	1,062,300	21.6	1,062,300	21.6	1,477,372	25.0	1,062,300	21.3	1,062,300	21.3
Total	1,062,300	21.6	1,062,300	21.6	1,477,372	25.0	1,062,300	21.3	1,062,300	21.3
3.3d Demonstrating monthly recipe to leader mothers										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	1,034,052	21.0	1,034,052	21.0	1,478,253	25.0	1,034,052	20.8	1,034,052	20.8
Total	1,034,052	21.0	1,034,052	21.0	1,478,253	25.0	1,034,052	20.8	1,034,052	20.8
3.3e Making home visits to beneficiaries										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	439,031	8.9	439,031	8.9	478,751	8.1	439,031	8.8	439,031	8.8
Total	439,031	8.9	439,031	8.9	478,751	8.1	439,031	8.8	439,031	8.8
3.4 Recipe development and *Crece Bien*										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	631,487	12.8	631,487	12.8	631,487	10.7	631,487	12.7	631,487	12.7
Total	631,487	12.8	631,487	12.8	631,487	10.7	631,487	12.7	631,487	12.7
3.5 Model gardens										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	120,322	2.4	120,322	2.4	146,574	2.5	120,322	2.4	120,322	2.4
Total	120,322	2.4	120,322	2.4	146,574	2.5	120,322	2.4	120,322	2.4
Total										
Start-up	1,194,556	24.3	1,194,556	24.3	1,210,368	20.5	1,255,240	25.2	1,255,240	25.2
Post-start-up	3,725,296	75.7	3,725,296	75.7	4,707,857	79.5	3,725,296	74.8	3,725,296	74.8
Total	4,919,852	100.0	4,919,852	100.0	5,918,225	100.0	4,980,536	100.0	4,980,536	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 8.7 Input costs by treatment arm for AB-CC 3: BCC development and execution, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Type of input	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
Recurrent										
Personnel	3,195,544	65.0	3,195,544	65.0	3,635,046	61.4	3,195,544	64.2	3,195,544	64.2
Materials and supplies	45,995	0.9	45,995	0.9	51,009	0.9	106,679	2.1	106,679	2.1
Media	14,144	0.3	14,144	0.3	14,144	0.2	14,144	0.3	14,144	0.3
Transportation	220,777	4.5	220,777	4.5	252,372	4.3	220,777	4.4	220,777	4.4
Maintenance	25,548	0.5	25,548	0.5	25,865	0.4	25,548	0.5	25,548	0.5
Utilities	54,639	1.1	54,639	1.1	62,548	1.1	54,639	1.1	54,639	1.1
Rent	123,480	2.5	123,480	2.5	128,618	2.2	123,480	2.5	123,480	2.5
Travel for program staff	595,226	12.1	595,226	12.1	903,551	15.3	595,226	12.0	595,226	12.0
Trainings for staff and service providers	31,962	0.6	31,962	0.6	31,962	0.5	31,962	0.6	31,962	0.6
Sub-grants	-	-	-	-	-	-	-	-	-	-
Consultations	146,354	3.0	146,354	3.0	146,354	2.5	146,354	2.9	146,354	2.9
Miscellaneous	217	<0.1	217	<0.1	217	<0.1	217	<0.1	217	<0.1
Capital										
Transportation	192,974	3.9	192,974	3.9	231,905	3.9	192,974	3.9	192,974	3.9
Equipment	258,367	5.3	258,367	5.3	417,012	7.0	258,367	5.2	258,367	5.2
Furniture	14,624	0.3	14,624	0.3	17,622	0.3	14,624	0.3	14,624	0.3
Total costs by input										
Recurrent	4,453,886	90.5	4,453,886	90.5	5,251,686	88.7	4,514,571	90.6	4,514,571	90.6
Capital	465,965	9.5	465,965	9.5	666,539	11.3	465,965	9.4	465,965	9.4
Total	4,919,852	100.0	4,919,852	100.0	5,918,225	100.0	4,980,536	100.0	4,980,536	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.1.4 AB-CC 4: Institutional Strengthening of Health Services

The cost of implementing AB-CC 4 (institutional strengthening of health services) would have been between US$3.3 and US$4.0 million, with the highest costs in version C (NFR+CSB) and the lowest in the other four versions, which would not have differed from each other.

Each of the sub-AB-CCs would have been most expensive in version C (NRF+CSB). The largest differences would have been attributable to monitoring beneficiaries' adoption of the BCC lessons (sub-AB-CC4.3d), investment plan management (sub-AB-CC 4.2g), and training the FCs in the program's BCC lessons (sub-AB-CCs 4.2e), which would have been US$135,500, US$106,300, and US$95,700 more expensive, respectively, in version C (NFR+CSB). These increased costs would again be related to the need to expand the geographic coverage of the program to reach the same number of beneficiaries.

The distribution of input costs was relatively similar across treatment arms (**Table 8.9**). The largest differences in the absolute costs by type of input were for travel for program staff and personnel.

Table 8.8 Cost of activities by treatment arm for AB-CC 4: Institutional strengthening of health services, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Sub-AB-CC	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
4.1 Improved communication										
4.1a Assess communication barriers between vulnerable populations and PSSs										
Start-up	4,192	0.1	4,192	0.1	4,192	0.1	4,192	0.1	4,192	<.1
Post-start-up	193,507	5.9	193,507	5.9	241,334	6.0	193,507	5.9	193,507	5.9
Total	197,698	6.0	197,698	6.0	245,526	6.1	197,698	6.0	197,698	6.0
4.1b Conduct quarterly meetings at health convergence centers										
Start-up	2,499	0.1	2,499	0.1	2,499	0.1	2,499	0.1	2,499	0.1
Post-start-up	137,294	4.2	137,294	4.2	163,824	4.1	137,294	4.2	137,294	4.2
Total	139,793	4.3	139,793	4.3	166,323	4.1	139,793	4.3	139,793	4.3
4.2 Trainings and provision of equipment										
4.2a Institutional assessment										
Start-up	3,137	0.1	3,137	0.1	3,137	0.1	3,137	0.1	3,137	0.1
Post-start-up	2,267	0.1	2,267	0.1	2,281	0.1	2,267	0.1	2,267	0.1
Total	5,404	0.2	5,404	0.2	5,418	0.1	5,404	0.2	5,404	0.2
4.2b General PSS assessment										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	36,176	1.1	36,176	1.1	41,576	1.0	36,176	1.1	36,176	1.1
Total	36,176	1.1	36,176	1.1	41,576	1.0	36,176	1.1	36,176	1.1
4.2c Standardization of weight and height										
Start-up	12,374	0.4	12,374	0.4	12,374	0.3	12,374	0.4	12,374	0.4
Post-start-up	157,105	4.8	157,105	4.8	244,305	6.0	157,105	4.8	157,105	4.8
Total	169,479	5.2	169,479	5.2	256,679	6.4	169,479	5.2	169,479	5.2
4.2d Train EBSs in BCC lessons										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	197,412	6.0	197,412	6.0	234,469	5.9	197,412	6.0	197,412	6.0
Total	197,412	6.0	197,412	6.0	234,469	5.9	197,412	6.0	197,412	6.0
4.2e Train FCs in BCC lessons										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	284,485	8.7	284,485	8.7	380,170	9.5	284,485	8.7	284,485	8.7
Total	284,485	8.7	284,485	8.7	380,170	9.5	284,485	8.7	284,485	8.7
4.2f Aid PSS educators and leader mothers										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	92,944	2.8	92,944	2.8	121,997	3.1	92,944	2.8	92,944	2.8
Total	92,944	2.8	92,944	2.8	121,997	3.1	92,944	2.8	92,944	2.8
4.2g Investment plan management										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	296,197	9.1	296,197	9.1	402,572	10.1	296,197	9.1	296,197	9.1

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Sub-AB-CC	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
Total	296,197	9.1	296,197	9.1	402,572	10.1	296,197	9.1	296,197	9.1
4.2h PSS educators' monitoring of beneficiaries and leader mothers										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	17,178	0.5	17,178	0.5	32,518	0.8	17,178	0.5	17,178	0.5
Total	17,178	0.5	17,178	0.5	32,518	0.8	17,178	0.5	17,178	0.5
4.3 Supervision and monitoring										
4.3a Monitoring achievements of health convergence centers' institutional strengthening plan										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	228,173	7.0	228,173	7.0	278,456	7.0	228,173	7.0	228,173	7.0
Total	228,173	7.0	228,173	7.0	278,456	7.0	228,173	7.0	228,173	7.0
4.3b Monitoring height and weight growth										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	185,702	5.7	185,702	5.7	234,052	5.9	185,702	5.7	185,702	5.7
Total	185,702	5.7	185,702	5.7	234,052	5.9	185,702	5.7	185,702	5.7
4.3c Follow-up and support of malnourished children										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	91,959	2.8	91,959	2.8	130,033	3.3	91,959	2.8	91,959	2.8
Total	91,959	2.8	91,959	2.8	130,033	3.3	91,959	2.8	91,959	2.8
4.3d Monitoring implementation of BCC lessons by beneficiaries										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	231,701	7.1	231,701	7.1	367,195	9.2	231,701	7.1	231,701	7.1
Total	231,701	7.1	231,701	7.1	367,195	9.2	231,701	7.1	231,701	7.1
4.3e Adhering to cooperative agreements										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	1,094,529	33.5	1,094,529	33.5	1,097,272	27.5	1,094,529	33.5	1,094,529	33.5
Total	1,094,529	33.5	1,094,529	33.5	1,097,272	27.5	1,094,529	33.5	1,094,529	33.5
Total										
Start-up	22,202	0.7	22,202	0.7	22,202	0.6	22,202	0.7	22,202	0.7
Post-start-up	3,246,630	99.3	3,246,630	99.3	3,962,847	99.4	3,246,630	99.3	3,246,630	99.3
Total	3,268,831	100.0	3,268,831	100.0	3,985,049	100.0	3,268,831	100.0	3,268,831	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 8.9 Input costs by treatment arm for AB-CC 4: Institutional strengthening of health services, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Type of input	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
Recurrent										
Personnel	1,370,002	41.9	1,370,002	41.9	1,769,395	44.4	1,370,002	41.9	1,370,002	41.9
Materials and supplies	35,834	1.1	35,834	1.1	46,605	1.2	35,834	1.1	35,834	1.1
Media	-	-	-	-	-	-	-	-	-	-
Transportation	139,720	4.3	139,720	4.3	172,079	4.3	139,720	4.3	139,720	4.3
Maintenance	12,845	0.4	12,845	0.4	13,653	0.3	12,845	0.4	12,845	0.4
Utilities	47,111	1.4	47,111	1.4	64,327	1.6	47,111	1.4	47,111	1.4
Rent	74,440	2.3	74,440	2.3	85,857	2.2	74,440	2.3	74,440	2.3
Travel for program staff	209,549	6.4	209,549	6.4	341,565	8.6	209,549	6.4	209,549	6.4
Trainings for staff and service providers	168,646	5.2	168,646	5.2	168,646	4.2	168,646	5.2	168,646	5.2
Sub-grants	802,381	24.5	802,381	24.5	802,381	20.1	802,381	24.5	802,381	24.5
Consultations	-	-	-	-	-	-	-	-	-	-
Miscellaneous	669	<0.1	669	<0.1	669	<0.1	669	<0.1	669	<0.1
Capital										
Transportation	86,393	2.6	86,393	2.6	115,391	2.9	86,393	2.6	86,393	2.6
Equipment	308,630	9.4	308,630	9.4	385,778	9.7	308,630	9.4	308,630	9.4
Furniture	12,611	0.4	12,611	0.4	18,703	0.5	12,611	0.4	12,611	0.4
Total costs by input										
Recurrent	2,861,197	87.5	2,861,197	87.5	3,465,178	87.0	2,861,197	87.5	2,861,197	87.5
Capital	407,634	12.5	407,634	12.5	519,871	13.0	407,634	12.5	407,634	12.5
Total	3,268,831	100.0	3,268,831	100.0	3,985,049	100.0	3,268,831	100.0	3,268,831	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.1.5 AB-CC 5: Monitoring and Evaluation

The cost of AB-CC 5 (monitoring and evaluation) would have been US$3.1 million in version C (NFR+CSB) of the program (**Table 8.10**). The same AB-CC would have been US$2.8 million in the other four versions.

All but one of the sub-AB-CCs would have been most expensive in version C (NFR+CSB). The exception is the evaluation of PSS data (sub-AB-CC 5.2g), which was US$45,000 and only necessary in the versions implementing LNS and MNP. The largest differences in the overall cost of AB-CC 5 were attributable to the cost of monitoring the typical workday of *PROCOMIDA* technicians (sub-AB-CC 5.2b), which would have been US$195,000 more expensive in version C (NFR+CSB) than in the other four versions. The next largest differences were attributable to the midline evaluation (sub-AB-CC 5.3b) and home visits by monitoring and evaluation technicians (sub-AB-CC 5.2c), which would have been US$22,000 and US$19,200 more expensive, respectively, in version C (NFR+CSB).

The distribution of input costs was relatively similar across treatment arms (**Table 8.11**). The largest differences in the absolute costs by type of input were for travel for program staff and personnel.

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Table 8.10 Cost of activities by treatment arm for AB-CC 5: Monitoring and evaluation, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Sub-AB-CC	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
5.1 Planning										
Start-up	14,525	0.5%	14,525	0.5%	14,525	0.5%	14,525	0.5%	14,525	0.5%
Post-start-up	277,649	9.9%	277,649	9.9%	296,611	9.5%	277,649	9.8%	277,649	9.8%
Total	292,174	10.4%	292,174	10.4%	311,136	10.0%	292,174	10.3%	292,174	10.3%
5.2 Monitoring										
5.2a Discussing results										
Start-up										
Post-start-up	213,138	7.6	213,138	7.6	219,925	7.1	213,138	7.5	213,138	7.5
Total	213,138	7.6	213,138	7.6	219,925	7.1	213,138	7.5	213,138	7.5
5.2b Monitoring the typical workday of the *PROCOMIDA* technicians										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	541,812	19.3	541,812	19.3	736,821	23.7	541,812	19.0	541,812	19.0
Total	541,812	19.3	541,812	19.3	736,821	23.7	541,812	19.0	541,812	19.0
5.2c Home visits by monitoring and evaluation technicians										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	99,192	3.5	99,192	3.5	118,401	3.8	99,192	3.5	99,192	3.5
Total	99,192	3.5	99,192	3.5	118,401	3.8	99,192	3.5	99,192	3.5
5.2d Monitoring of leader mother visits to BMs' homes										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	25,159	0.9	25,159	0.9	28,840	0.9	25,159	0.9	25,159	0.9
Total	25,159	0.9	25,159	0.9	28,840	0.9	25,159	0.9	25,159	0.9
5.2e Additional interviews with key informants on program activities										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	33,998	1.2	33,998	1.2	49,974	1.6	33,998	1.2	33,998	1.2
Total	33,998	1.2	33,998	1.2	49,974	1.6	33,998	1.2	33,998	1.2
5.2f Monitoring and follow-up of training										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	36,754	1.3	36,754	1.3	41,414	1.3	36,754	1.3	36,754	1.3
Total	36,754	1.3	36,754	1.3	41,414	1.3	36,754	1.3	36,754	1.3
5.2g Evaluation of PSS data										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	-	-	-	-	-	-	45,451	1.6	45,034	1.6
Total	-	-	-	-	-	-	45,451	1.6	45,034	1.6
5.2h Monitoring activities at unspecified times										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	124,466	4.4	124,466	4.4	138,390	4.5	124,466	4.4	124,466	4.4
Total	124,466	4.4	124,466	4.4	138,390	4.5	124,466	4.4	124,466	4.4

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Sub-AB-CC	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
5.2i Annual monitoring										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	315,917	11.3	315,917	11.3	316,380	10.2	315,917	11.1	315,917	11.1
Total	315,917	11.3	315,917	11.3	316,380	10.2	315,917	11.1	315,917	11.1
5.3 Evaluation										
5.3a Baseline survey										
Start-up	381,536	13.6	381,536	13.6	385,711	12.4	381,536	13.4	381,536	13.4
Post-start-up	-	-	-	-	-	-	-	-	-	-
Total	381,536	13.6	381,536	13.6	385,711	12.4	381,536	13.4	381,536	13.4
5.3b Midline survey										
Start-up	425,097	15.2	425,097	15.2	447,127	14.4	425,097	14.9	425,097	14.9
Post-start-up	-	-	-	-	-	-	-	-	-	-
Total	425,097	15.2	425,097	15.2	447,127	14.4	425,097	14.9	425,097	14.9
5.3c Endline survey										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	312,283	11.1	312,283	11.1	313,336	10.1	312,283	11.0	312,283	11.0
Total	312,283	11.1	312,283	11.1	313,336	10.1	312,283	11.0	312,283	11.0
Total										
Start-up	821,158	29.3	821,158	29.3	847,363	27.3	821,158	28.8	821,158	28.8
Post-start-up	1,980,367	70.7	1,980,367	70.7	2,260,092	72.7	2,025,818	71.2	2,025,401	71.2
Total	2,801,525	100.0	2,801,525	100.0	3,107,456	100.0	2,846,976	100.0	2,846,559	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 8.11 Input costs by treatment arm for AB-CC 5: Monitoring and evaluation, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Type of input	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
Recurrent										
Personnel	1,669,319	59.6	1,669,319	59.6	1,844,220	59.3	1,702,444	59.8	1,702,027	59.8
Materials and supplies	29,410	1.0	29,410	1.0	34,684	1.1	30,081	1.1	30,081	1.1
Media	-	-	-	-	-	-	-	-	-	-
Transportation	136,982	4.9	136,982	4.9	154,575	5.0	140,516	4.9	140,516	4.9
Maintenance	10,807	0.4	10,807	0.4	11,049	0.4	10,919	0.4	10,919	0.4
Utilities	33,012	1.2	33,012	1.2	41,474	1.3	33,642	1.2	33,642	1.2
Rent	84,690	3.0	84,690	3.0	90,436	2.9	88,212	3.1	88,212	3.1
Travel for program staff	163,357	5.8	163,357	5.8	235,917	7.6	165,351	5.8	165,351	5.8
Trainings for staff and service providers	13,353	0.5	13,353	0.5	13,353	0.4	13,353	0.5	13,353	0.5
Sub-grants	-	-	-	-	-	-	-	-	-	-
Consultations	555,297	19.8	555,297	19.8	555,297	17.9	555,297	19.5	555,297	19.5
Miscellaneous	2,830	0.1	2,830	0.1	2,830	0.1	2,831	0.1	2,831	0.1
Capital										
Transportation	54,142	1.9	54,142	1.9	67,034	2.2	54,949	1.9	54,949	1.9
Equipment	39,163	1.4	39,163	1.4	45,052	1.4	40,137	1.4	40,137	1.4
Furniture	9,164	0.3	9,164	0.3	11,535	0.4	9,245	0.3	9,245	0.3
Total costs by input										
Recurrent	2,699,056	96.3	2,699,056	96.3	2,983,835	96.0	2,742,646	96.3	2,742,229	96.3
Capital	102,469	3.7	102,469	3.7	123,621	4.0	104,330	3.7	104,330	3.7
Total	2,801,525	100.0	2,801,525	100.0	3,107,456	100.0	2,846,976	100.0	2,846,559	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.1.6 AB-CC 6: Training and Supervision of Program Staff

The cost of AB-CC 6 (training and supervision of program staff) would have been most expensive at US$2.0 million in version C (NFR+CSB) (**Table 8.12**). In the four other versions of *PROCOMIDA*, AB-CC 6 would have cost US$1.5 million.

For every sub-AB-CC, version C (NFR+CBS) was more expensive than the other four. The largest differences in cost by sub-AB-CC were for BCC staff trainings (sub-AB-CC 6.1) and nonviolent communication training (sub-AB-CC 6.5).

The distribution of input costs was relatively similar across treatment arms (**Table 8.13**). The largest differences in the absolute costs by type of input were attributable to the trainings for staff and service providers and personnel categories.

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Table 8.12 Cost of activities by treatment arm for AB-CC 6: Training and supervision of program staff, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Sub-AB-CC	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
6.1 BCC staff training										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	1,132,395	75.7	1,132,395	75.7	1,541,082	77.4	1,132,395	75.7	1,132,395	75.7
Total	1,132,395	75.7	1,132,395	75.7	1,541,082	77.4	1,132,395	75.7	1,132,395	75.7
6.2 Monitoring and evaluation staff training										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	74,271	5.0	74,271	5.0	98,904	5.0	74,271	5.0	74,271	5.0
Total	74,271	5.0	74,271	5.0	98,904	5.0	74,271	5.0	74,271	5.0
6.3 Institutional strengthening staff training										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	48,898	3.3	48,898	3.3	49,947	2.5	48,898	3.3	48,898	3.3
Total	48,898	3.3	48,898	3.3	49,947	2.5	48,898	3.3	48,898	3.3
6.4 Systematic information management staff training										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	90,136	6.0	90,136	6.0	110,799	5.6	90,136	6.0	90,136	6.0
Total	90,136	6.0	90,136	6.0	110,799	5.6	90,136	6.0	90,136	6.0
6.5 Nonviolent communication training										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	149,587	10.0	149,587	10.0	190,075	9.5	149,587	10.0	149,587	10.0
Total	149,587	10.0	149,587	10.0	190,075	9.5	149,587	10.0	149,587	10.0
Total										
Start-up	-	-	-	-	-	-	-	-	-	-
Post-start-up	1,495,287	100.0	1,495,287	100.0	1,990,807	100.0	1,495,287	100.0	1,495,287	100.0
Total	1,495,287	100.0	1,495,287	100.0	1,990,807	100.0	1,495,287	100.0	1,495,287	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 8.13 Input costs by treatment arm for AB-CC 6: Training and supervision of program staff, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Type of input	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
Recurrent										
Personnel	610,136	40.8	610,136	40.8	790,639	39.7	610,136	40.8	610,136	40.8
Materials and supplies	48,893	3.3	48,893	3.3	52,413	2.6	48,893	3.3	48,893	3.3
Media	-	-	-	-	-	-	-	-	-	-
Transportation	52,808	3.5	52,808	3.5	61,594	3.1	52,808	3.5	52,808	3.5
Maintenance	8,425	0.6	8,425	0.6	8,699	0.4	8,425	0.6	8,425	0.6
Utilities	20,241	1.4	20,241	1.4	26,045	1.3	20,241	1.4	20,241	1.4
Rent	48,669	3.3	48,669	3.3	52,385	2.6	48,669	3.3	48,669	3.3
Travel for program staff	280,948	18.8	280,948	18.8	358,670	18.0	280,948	18.8	280,948	18.8
Trainings for staff and service providers	346,798	23.2	346,798	23.2	526,307	26.4	346,798	23.2	346,798	23.2
Sub-grants	-	-	-	-	-	-	-	-	-	-
Consultations	-	-	-	-	-	-	-	-	-	-
Miscellaneous	62	<0.1	62	<0.1	62	<0.1	62	<0.1	62	<0.1
Capital										
Transportation	34,926	2.3	34,926	2.3	45,930	2.3	34,926	2.3	34,926	2.3
Equipment	38,351	2.6	38,351	2.6	60,926	3.1	38,351	2.6	38,351	2.6
Furniture	5,031	0.3	5,031	0.3	7,138	0.4	5,031	0.3	5,031	0.3
Total costs by input										
Recurrent	1,416,979	94.8	1,416,979	94.8	1,876,813	94.3	1,416,979	94.8	1,416,979	94.8
Capital	78,309	5.2	78,309	5.2	113,994	5.7	78,309	5.2	78,309	5.2
Total	1,495,287	100.0	1,495,287	100.0	1,990,807	100.0	1,495,287	100.0	1,495,287	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.1.7 AB-CC 7: Advocacy, Promotion, and Social Mobilization

The total cost of implementing AB-CC 7 (advocacy, promotion, and social mobilization) would have been similar in all five versions of *PROCOMIDA* at about US$1.0 million (**Table 8.14**). AB-CC 7 would have been only US$32,100 (or 3.2 percent) more expensive in versions D (FFR+LNS) and E (FFR+MNP).

Negotiating the HCA (sub-AB-CC 7.1) and obtaining permission to perform the study (sub-AB-CC 7.3) were US$13,800 and US$18,300 more expensive, respectively, in versions D (FFR+LNS) and E (FFR+MNP).

The only differences in absolute costs by type of input were in personnel costs, which were slightly higher for versions D (FFR+LNS) and E (FFR+MNP) of the program (**Table 8.15**).

Table 8.14 Cost of activities by treatment arm for AB-CC 7: Advocacy, promotion, and social mobilization, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Sub-AB-CC	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
7.1 Host country agreement										
Start-up	81,882	8.0	81,882	8.0	81,882	8.0	87,187	8.3	87,187	8.3
Post-start-up	72,804	7.1	72,804	7.1	72,804	7.1	81,332	7.7	81,332	7.7
Total	154,687	15.2	154,687	15.2	154,687	15.2	168,519	16.0	168,519	16.0
7.2 Sensitization and local approval										
Start-up	110,402	10.8	110,402	10.8	110,402	10.8	110,402	10.5	110,402	10.5
Post-start-up	264,413	25.9	264,413	25.9	264,413	25.9	264,413	25.1	264,413	25.1
Total	374,816	36.7	374,816	36.7	374,816	36.7	374,816	35.6	374,816	35.6
7.3 Permission to perform study										
Start-up	83,350	8.2	83,350	8.2	83,350	8.2	87,900	8.4	87,900	8.4
Post-start-up	108,800	10.7	108,800	10.7	108,800	10.7	122,525	11.6	122,525	11.6
Total	192,149	18.8	192,149	18.8	192,149	18.8	210,425	20.0	210,425	20.0
7.4 Meetings and workshops										
Start-up	15,060	1.5	15,060	1.5	15,060	1.5	15,060	1.4	15,060	1.4
Post-start-up	283,812	27.8	283,812	27.8	283,812	27.8	283,812	27.0	283,812	27.0
Total	298,872	29.3	298,872	29.3	298,872	29.3	298,872	28.4	298,872	28.4
Total										
Start-up	290,695	28.5	290,695	28.5	290,695	28.5	300,550	28.6	300,550	28.6
Post-start-up	729,829	71.5	729,829	71.5	729,829	71.5	752,082	71.4	752,082	71.4
Total	1,020,524	100.0	1,020,524	100.0	1,020,524	100.0	1,052,632	100.0	1,052,632	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 8.15 Input costs by treatment arm for AB-CC 7: Advocacy, promotion, and social mobilization, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Type of input	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
Recurrent										
Personnel	669,720	65.6	669,720	65.6	669,720	65.6	701,828	66.7	701,828	66.7
Materials and supplies	78,784	7.7	78,784	7.7	78,784	7.7	78,784	7.5	78,784	7.5
Media	-	-	-	-	-	-	-	-	-	-
Transportation	65,343	6.4	65,343	6.4	65,343	6.4	65,343	6.2	65,343	6.2
Maintenance	8,135	0.8	8,135	0.8	8,135	0.8	8,135	0.8	8,135	0.8
Utilities	8,996	0.9	8,996	0.9	8,996	0.9	8,996	0.9	8,996	0.9
Rent	25,192	2.5	25,192	2.5	25,192	2.5	25,192	2.4	25,192	2.4
Travel for program staff	68,736	6.7	68,736	6.7	68,736	6.7	68,736	6.5	68,736	6.5
Trainings for staff and service providers	8,266	0.8	8,266	0.8	8,266	0.8	8,266	0.8	8,266	0.8
Sub-grants	-	-	-	-	-	-	-	-	-	-
Consultations	-	-	-	-	-	-	-	-	-	-
Miscellaneous	33,104	3.2	33,104	3.2	33,104	3.2	33,104	3.1	33,104	3.1
Capital										
Transportation	24,091	2.4	24,091	2.4	24,091	2.4	24,091	2.3	24,091	2.3
Equipment	26,180	2.6	26,180	2.6	26,180	2.6	26,180	2.5	26,180	2.5
Furniture	3,978	0.4	3,978	0.4	3,978	0.4	3,978	0.4	3,978	0.4
Total costs by input										
Recurrent	966,275	94.7	966,275	94.7	966,275	94.7	998,383	94.8	998,383	94.8
Capital	54,249	5.3	54,249	5.3	54,249	5.3	54,249	5.2	54,249	5.2
Total	1,020,524	100.0	1,020,524	100.0	1,020,524	100.0	1,052,632	100.0	1,052,632	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.1.8 AB-CC 8: Management, Planning, and Administration

The total cost of implementing AB-CC 8 (management, planning, and administration) would have been nearly equal in all five versions of *PROCOMIDA* at US$4.4 million (**Table 8.16**). Only the cost of planning and administering offices and infrastructure (sub-AB-CC 8.4) differed across treatment arms, and it was only US$13,000 more expensive in arm C (NFR+CSB). The largest difference in absolute costs by type of input was for personnel (**Table 8.17**).

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Table 8.16 Cost of activities by treatment arm for AB-CC 8: Management planning, and administration, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Sub-AB-CC	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
8.1 Human resources										
Start-up	35,727	0.8	35,727	0.8	35,727	0.8	35,727	0.8	35,727	0.8
Post-start-up	930,163	21.1	930,163	21.1	930,163	21.0	930,163	21.1	930,163	21.1
Total	965,890	21.9	965,890	21.9	965,890	21.9	965,890	21.9	965,890	21.9
8.2 Procurement										
Start-up	31,720	0.7	31,720	0.7	31,720	0.7	31,720	0.7	31,720	0.7
Post-start-up	1,588,124	36.0	1,588,124	36.0	1,588,124	35.9	1,588,124	36.0	1,588,124	36.0
Total	1,619,844	36.8	1,619,844	36.8	1,619,844	36.6	1,619,844	36.8	1,619,844	36.8
8.3 Pre-implementation logistics										
Start-up	7,759	0.2	7,759	0.2	7,759	0.2	7,759	0.2	7,759	0.2
Post-start-up	-	-	-	-	-	-	-	-	-	-
Total	7,759	0.2	7,759	0.2	7,759	0.2	7,759	0.2	7,759	0.2
8.4 Offices and infrastructure										
Start-up	38,033	0.9	38,033	0.9	38,033	0.9	38,033	0.9	38,033	0.9
Post-start-up	948,729	21.5	948,729	21.5	961,682	21.8	948,729	21.5	948,729	21.5
Total	986,762	22.4	986,762	22.4	999,715	22.6	986,762	22.4	986,762	22.4
8.5 Headquarters support										
Start-up	41,448	0.9	41,448	0.9	41,448	0.9	41,448	0.9	41,448	0.9
Post-start-up	785,202	17.8	785,202	17.8	785,202	17.8	785,202	17.8	785,202	17.8
Total	826,650	18.8	826,650	18.8	826,650	18.7	826,650	18.8	826,650	18.8
Total										
Start-up	154,687	3.5	154,687	3.5	154,687	3.5	154,687	3.5	154,687	3.5
Post-start-up	4,252,217	96.5	4,252,217	96.5	4,265,170	96.5	4,252,217	96.5	4,252,217	96.5
Total	4,406,904	100.0	4,406,904	100.0	4,419,857	100.0	4,406,904	100.0	4,406,904	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 8.17 Input costs by treatment arm for AB-CC 8: Management planning, and administration, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Type of input	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
Recurrent										
Personnel	3,058,884	69.4	3,058,884	69.4	3,068,101	69.4	3,058,884	69.4	3,058,884	69.4
Materials and supplies	198,569	4.5	198,569	4.5	199,103	4.5	198,569	4.5	198,569	4.5
Media	-	-	-	-	-	-	-	-	-	-
Transportation	61,205	1.4	61,205	1.4	61,389	1.4	61,205	1.4	61,205	1.4
Maintenance	49,274	1.1	49,274	1.1	49,419	1.1	49,274	1.1	49,274	1.1
Utilities	166,352	3.8	166,352	3.8	167,069	3.8	166,352	3.8	166,352	3.8
Rent	252,650	5.7	252,650	5.7	254,435	5.8	252,650	5.7	252,650	5.7
Travel for program staff	399,497	9.1	399,497	9.1	400,247	9.1	399,497	9.1	399,497	9.1
Trainings for staff and service providers	-	-	-	-	-	-	-	-	-	-
Sub-grants	-	-	-	-	-	-	-	-	-	-
Consultations	-	-	-	-	-	-	-	-	-	-
Miscellaneous	50,200	1.1	50,200	1.1	49,420	1.1	50,200	1.1	50,200	1.1
Capital										
Transportation	38,302	0.9	38,302	0.9	38,424	0.9	38,302	0.9	38,302	0.9
Equipment	84,261	1.9	84,261	1.9	84,470	1.9	84,261	1.9	84,261	1.9
Furniture	47,710	1.1	47,710	1.1	47,782	1.1	47,710	1.1	47,710	1.1
Total costs by input										
Recurrent	4,236,631	96.1	4,236,631	96.1	4,249,181	96.1	4,236,631	96.1	4,236,631	96.1
Capital	170,273	3.9	170,273	3.9	170,677	3.9	170,273	3.9	170,273	3.9
Total	4,406,904	100.0	4,406,904	100.0	4,419,857	100.0	4,406,904	100.0	4,406,904	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.1.9 AB-CC 9: Systematic Information Management

The total cost of implementing AB-CC 9 (systematic information management) would have been most expensive at US$1.5 million in the versions of the program that delivered LNS and MNP along with the FFR (**Table 8.18**). Versions A (FFR+CSB) and B (RFR+CSB) would have been slightly less expensive at US$1.4 million, and version C (NFR+CSB) would have been least expensive at US$1.3 million.

The cost of managing beneficiary information (sub-AB-CC 9.2) would have been US$131,500 more expensive in versions D (LNS+FFR) and E (MNP+FFR), than in the versions that delivered CSB. The commodity tracking system (sub-AB-CC 9.1) would have been US$51,500 less expensive in version C (NFR+CSB), because it did not have to track rice, beans, and oil.

The largest differences in absolute costs by type of input were for personnel and program staff travel (**Table 8.19**).

Table 8.18 Cost of activities by treatment arm for AB-CC 9: Systematic information management, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Sub-AB-CC	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
9.1 Commodity tracking system										
Start-up	161,346	11.6	161,346	11.6	141,926	10.6	161,346	10.6	161,346	10.6
Post-start-up	83,322	6.0	83,322	6.0	51,224	3.8	83,322	5.5	83,322	5.5
Total	244,668	17.6	244,668	17.6	193,150	14.4	244,668	16.1	244,668	16.1
9.2 Beneficiary information management										
Start-up	794,629	57.1	794,629	57.1	794,629	59.3	866,124	56.9	866,124	56.9
Post-start-up	146,733	10.6	146,733	10.6	146,733	11.0	206,749	13.6	206,749	13.6
Total	941,363	67.7	941,363	67.7	941,363	70.3	1,072,873	70.5	1,072,873	70.5
9.3 Coverage										
Start-up	139,600	10.0	139,600	10.0	139,600	10.4	139,600	9.2	139,600	9.2
Post-start-up	64,884	4.7	64,884	4.7	64,884	4.8	64,884	4.3	64,884	4.3
Total	204,485	14.7	204,485	14.7	204,485	15.3	204,485	13.4	204,485	13.4
Total										
Start-up	1,095,576	78.8	1,095,576	78.8	1,076,156	80.4	1,167,070	76.7	1,167,070	76.7
Post-start-up	294,940	21.2	294,940	21.2	262,842	19.6	354,955	23.3	354,955	23.3
Total	1,390,516	100.0	1,390,516	100.0	1,338,997	100.0	1,522,026	100.0	1,522,026	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 8.19 Input costs by treatment arm for AB-CC 9: Systematic information management, *PROCOMIDA*

	A (FFR+CSB)		B (RFR+CSB)		C (NFR+CSB)		D (FFR+LNS)		E (FFR+MNP)	
Type of input	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs	US$	% of arm costs
Recurrent										
Personnel	730,089	52.5	730,089	52.5	519,362	38.8	809,553	53.2	809,553	53.2
Materials and supplies	44,316	3.2	44,316	3.2	51,574	3.9	46,398	3.0	46,398	3.0
Media	-	-	-	-	-	-	-	-	-	-
Transportation	87,101	6.3	87,101	6.3	103,447	7.7	90,951	6.0	90,951	6.0
Maintenance	27,184	2.0	27,184	2.0	27,836	2.1	25,555	1.7	25,555	1.7
Utilities	69,784	5.0	69,784	5.0	84,048	6.3	77,793	5.1	77,793	5.1
Rent	151,990	10.9	151,990	10.9	162,015	12.1	165,755	10.9	165,755	10.9
Travel for program staff	156,897	11.3	156,897	11.3	241,474	18.0	167,775	11.0	167,775	11.0
Trainings for staff and service providers	-	-	-	-	-	-	-	-	-	-
Sub-grants	-	-	-	-	-	-	-	-	-	-
Consultations	-	-	-	-	-	-	-	-	-	-
Miscellaneous	82	<0.1	82	<0.1	82	<0.1	99	<0.1	99	<0.1
Capital										
Transportation	34,733	2.5	34,733	2.5	46,961	3.5	37,794	2.5	37,794	2.5
Equipment	72,612	5.2	72,612	5.2	80,947	6.0	81,423	5.3	81,423	5.3
Furniture	15,729	1.1	15,729	1.1	21,251	1.6	18,929	1.2	18,929	1.2
Total costs by input										
Recurrent	1,267,442	91.1	1,267,442	91.1	1,189,838	88.9	1,383,880	90.9	1,383,880	90.9
Capital	123,074	8.9	123,074	8.9	149,159	11.1	138,146	9.1	138,146	9.1
Total	1,390,516	100.0	1,390,516	100.0	1,338,997	100.0	1,522,026	100.0	1,522,026	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.1.10 Cost of Food Rations and Supplements

Though not incurred directly by the implementing NGO, there were also costs to supplying and shipping the food commodities and supplements.[41]

Household ration. *PROCOMIDA* beneficiaries in arms A (FFR+CSB), D (FFR+LNS), and E (FFR+MNP) received a full monthly household food ration composed of rice (6 kg), beans (4 kg), and vegetable oil (1.85 kg). In arm B (RFR+CSB), quantities were 3 kg, 3 kg, and 0.925 kg for beans, rice, and vegetable oil, respectively. In arm C (NFR+CSB), beneficiaries did not receive beans, rice, or vegetable oil. Rice cost US$0.542/kg, beans cost US$0.637/kg, and oil cost US$1.080/kg; shipping was US$0.075/kg for all commodities (USAID 2016). The total monthly cost of the FFR, including the international shipping costs, was US$8.68 compared with US$5.05 for the RFR (**Table 8.20**).

Table 8.20 Monthly cost[a] of family ration by treatment arm, *PROCOMIDA*

Commodity	Full family ration (Arms A, D, and E) (US$)[b]	Reduced family ration (Arm B) (US$)	No family ration (Arm C) (US$)
Rice	3.70	1.85	0.00
Pinto beans	2.85	2.13	0.00
Vegetable oil	2.14	1.07	0.00
Total	8.68	5.05	0.00

[a] Costs reflect the cost of the ration and international shipping.
[b] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Individual ration or supplement. Beneficiaries in arms A (FFR+CSB), B (RFR+CSB), and C (NFR+CSB) received CSB as the individual ration. A metric ton of CSB costs on average US$520.05 (i.e., US$0.520 USD/kg or US$2.080 for a 4-kg monthly supply of individual ration per beneficiary) (USAID 2016). Transportation via ocean freight was US$0.075 per kg (i.e., US$0.300 for a monthly supply), which brought the cost of a monthly supply of CSB to US$2.38 (**Table 8.21**). A 1-month supply of LNS (for all beneficiary groups) cost 1.800 EUR, and the cost of shipping was 0.597 EUR per monthly supply. The total cost for a monthly supply of LNS was thus 2.40 EUR or US$2.64. The cost of the MNP supplement provided to pregnant women and lactating mothers with a child under 6 months of age was different from the cost of what was provided to children 6–23 months of age. A 1-month supply of MNP for a pregnant woman or lactating mothers with a child under 6 months of age was US$2.490, and the cost of shipping was US$0.176, for a total of US$2.67. A 1-month supply for a child 6–23 months of age was slightly less at US$1.938, including the cost of shipping (US$0.176), the total cost was US$2.11.

Table 8.21 Monthly cost of individual ration or supplement, *PROCOMIDA*

Target group	CSB (Arms A, B, and C) (US$)[b]	LNS (Arm D) (US$)	MNP (Arm E) (US$)
Pregnant or lactating woman with a child <6 months	2.38	2.64	2.67
Child 6-23 months	2.38	2.64	2.11

[a] Costs reflect the cost of the ration and international shipping.
[b] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Total ration. For households with a pregnant woman or with a lactating mother with a child under 6 months of age, the total monthly cost of both the household ration and the individual ration or supplement was highest in arm the E (FFR+MNP) arm at US$11.35 USD, and only slightly less expensive for arm D

[41] FFP purchased the food commodities and had them shipped to Puerto Barrios, Guatemala. Though the implementing NGOs did not make these payments directly, they managed these funds, which were part of the award (not in addition to it). IFPRI (using funds from the FANTA research grant) purchased the micronutrient supplements and paid the shipping costs.

(FFR+LNS) at US$11.32 USD and arm A (FFR+CSB) at US$11.06 USD. Providing a smaller family ration or NFR reduced the costs of the entire ration for arms B (RFR+CSB) and C (NFR+CSB), which would make them considerably less expensive at US$7.43 and US$2.38, respectively. In arm E (FFR+MNP), the cost of the monthly individual supplement provided to children 6–23 months of age was less than the cost of what was provided to mothers; this meant that the total monthly cost of the ration and supplement provided to children in arm E (FFR+MNP) was US$10.80—less expensive than either of the other two arms that provided the FFR (**Table 8.22**).

Table 8.22 Total monthly cost of ration and supplement by treatment arm, *PROCOMIDA*

	A (FFR+CSB) (US$)[a]	B (RFR+CSB) (US$)	C (NFR+CSB) (US$)	D (FFR+LNS) (US$)	E (FFR+MNP) (US$)
Family ration	8.68	5.05	-	8.68	8.68
Individual ration or supplement for pregnant women with children <6 months	2.38	2.38	2.38	2.64	2.67
Individual ration or supplement for children 6-23 months	2.38	2.38	2.38	2.64	2.11
Total for households with a pregnant woman or with a lactating mother with a child <6 months	11.06	7.43	2.38	11.32	11.35[b]
Total for households with a child 6-23 months	11.06	7.43	2.38	11.32	10.80[b]

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.
[b] Reflects rounding.

8.1.11 Cost per Beneficiary

The total cost per beneficiary combined the cost of both the program activities and the food rations. The *PROCOMIDA* beneficiary database was used to calculate the number of beneficiary-months that program services were delivered. Throughout the duration of the program, program services were delivered for 1,050,166 beneficiary-months (**Table 8.23**). Thus, the monthly cost of program activities would have been most expensive in version C (NFR+CSB) of the program at US$27.16 per beneficiary (**Table 8.24**). The three versions of the program that provided the FFR would have been approximately US$1 less at US$26.22 for version A (FFR+CSB), US$26.13 for version D (FFR+LNS), and US$26.10 for version E (FFR+MNP). Version B (RFR+CSB) would have been the least expensive at US$25.15 per beneficiary per month.

Table 8.23 Program participation numbers, *PROCOMIDA*

Year	Beneficiary-months of program participation
2009	-
2010	60,442
2011	168,716
2012	219,413
2013	284,546
2014	248,285
2015	68,764
Total	1,050,166

Table 8.24 Monthly cost of program activities per beneficiary by treatment arm, *PROCOMIDA*

	A (FFR+CSB)	B (RFR+CSB)	C (NFR+CSB)	D (FFR+LNS)	E (FFR+MNP)
Total cost of program activities (US$)[a]	27,534,804	26,410,504	28,526,268	27,440,709	27,413,832
Total number of beneficiary-months	1,050,166	1,050,166	1,050,166	1,050,166	1,050,166
Monthly cost of program activities per beneficiary (US$)	26.22	25.15	27.16	26.13	26.10

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.
Note: The values include only the cost of program activities and do not include the cost of food rations.

The total cost of the food ration and supplement would have been most expensive in version D (FFR+LNS) (US$328.23) of the program and only slightly less expensive in versions A (FFR+CSB) (US$320.82) and E (FFR+MNP) (US$319.14) (**Table 8.25**). The largest difference in the total cost of the rations and supplements was related to the size of the family ration. The total cost of food rations in version B (RFR+CSB) would have been about two-thirds the cost of the most expensive version, at US$215.57, and version C (NFR+CSB) was considerably less expensive at US$69.05.

The total combined cost of the food rations, supplements, and program activities per beneficiary for 29 months of program participation would have been most expensive in version D (FFR+LNS) at US$1,086.00, and only slightly less expensive in versions A (FFR+CSB) and E (FFR+MNP) at US$1,081.18 and US$1,076.16, respectively. Providing a smaller family ration would reduce the cost of both the family rations and the delivery of the program, and would have been US$944.89 per beneficiary if version B (RFR+CSB) was implemented. The need to expand the geographic scope of version C (NFR+CSB) would have increased the cost of program activities; however, after accounting for the reduced cost of the ration, it would have been the least expensive version of *PROCOMIDA* at US$856.78 per beneficiary.[42]

[42] LNS and MNP were purchased in smaller volumes relative to the other products, and we briefly consider alternative cost scenarios. Overall, the cost of both products has remained relatively stable in recent years, largely because of relatively small scale production and limited competition in the market for these products (UNICEF 2016). One hypothetical scenario is that the cost of these products would drop dramatically if a large manufacturer were to begin producing LNS and MNP (Lybbert 2011). Under this scenario, we estimate a generous 30 percent reduction in the cost of procuring each product. In the case of LNS, a monthly supply for the mother or child would be US$1.84. This means that the cost of the food rations and supplements for the duration of the program would be US$305.29 in version D (FFR+LNS), and the cost of the complete program would be US$1,063.06. In the case of MNP, a monthly supply would be US$1.87 for mothers and US$1.48 for children. This means that the cost of the food rations and supplements for the duration of the program would be US$298.93 in version E (FFR+MNP), and the cost of the complete program would be US$1,055.95.
Another factor to consider is that LNS is often made available for research projects at a lower cost than what is charged for normal production. In a scenario for which LNS is sold for 5 EUR per kg (instead of 3 EUR per kg), the cost of a monthly supply of the supplement for the mother or child would be US$3.96. In this higher cost scenario, the cost of the food rations and supplements for the duration of the program would be US$366.51 per beneficiary in version D (FFR+LNS), and the total cost of the program would be US$1,123.53.

Table 8.25 Program costs per beneficiary by treatment arm, *PROCOMIDA*

	A (FFR+CSB)	B (RFR+CSB)	C (NFR+CSB)	D (FFR+LNS)	E (FFR+MNP)
Months that each program component was received (#)					
Ration for pregnant woman or mother of child <6 months[a]	11	11	11	11	11
Ration for child 6-23 months	18	18	18	18	18
Family ration	29	29	29	29	29
Duration of program participation (including BCC and health services)	29	29	29	29	29
Cost of food rations and supplements per beneficiary for the duration of the program (US$)[b, c]					
Pregnant woman or mother of a child <6 months	26.19	26.19	26.19	29.00	29.33
Child 6-23 months	42.86	42.86	42.86	47.46	38.05
Family	251.77	141.47	0.00	251.77	251.77
Cost of food rations and supplements per beneficiary for the duration of the program (US$)[b]	320.82	215.57	69.05	328.23	319.14
Cost of program activities per beneficiary for the duration of the program (US$)[b]	760.36	729.32	787.74	757.77	757.02
Combined cost of food rations, supplements, and program activities (US$)[b]	1,081.18	944.89	856.78	1,086.00	1,076.16

[a] Calculated from the beneficiary database.
[b] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.
[c] Monthly values come from Table 8.21.

8.1.12 Program Benefits

PROCOMIDA resulted in a significantly lower prevalence of stunting at 24 months of age of 11.2 and 6.7 percentage points in versions A (FFR+CSB) and E (FFR+MNP), respectively. None of the other versions of the program led to a lower prevalence of stunting at 24 months compared with the control group. Due to the similar costs of versions A (FFR+CSB) and E (FFR+MNP), version A (FFR+CSB) was estimated to be more cost-effective for reducing stunting than version E (FFR+MNP). However, these results need to be considered in light of some of the potential negative impacts of version A of the program on maternal and child anemia and on maternal weight at 24 months postpartum that were not found in version E of the program (**Table 8.26**).

In addition to the positive effects on stunting, the *PROCOMIDA* program led to some positive changes in maternal knowledge and adoption of some optimal infant and young child feeding practices. For example, in all versions of the program, the proportion of children who were exclusively breastfed at 4 and 6 months of age was higher than in the control group (Heckert et al. 2016). In addition, in versions A (FFR+CSB) and E (FFR+MNP) of the program, positive program impacts were found on the proportion of children who received minimally diverse diets and minimally acceptable diets at 24 months and in version E (FFR+MNP) on the proportion of children who had also received the minimum number of meals recommended (Table 8.26). At the household level, positive changes were also seen in the cleanliness of the houses and in reducing household hunger in versions A (FFR+CSB) and E of the program. Specifically, at 24 months, the exterior of houses in version A (FFR+CSB) and the interior of houses in version E (FFR+MNP) of the program were more likely to be clean than in the control group. In addition, both versions A (FFR+CSB) and E (FFR+MNP) of the program reduced household hunger (Table 8.26).

Table 8.26 Program costs and effects by treatment arm, *PROCOMIDA*

	A (FFR+CSB)	B (RFR+CSB)	C (NFR+CSB)	D (FFR+LNS)	E (FFR+MNP)
Linear growth					
Cost per beneficiary (US$)[a]	**1,081.18**	944.89	856.78	1,086.00	1,076.16
Impact on stunting (pp)[b]	-11.2*	--	--	--	-6.7*
Cost per beneficiary per pp reduction in stunting (US$)	96.53	--	--	--	160.62[c]
Other program impacts [b]					
Child (24 months)					
Anemia, pp	6.3*	--	--	--	--
Minimum meal frequency, pp	--	--	--	--	5.9*
Minimum dietary diversity, pp	9.5*	--	--	--	7.9*
Minimal acceptable diet, pp	8.0*	--	--	--	12.3*
Child clean	3.8*	--	--	--	4.8*
Mother (24 months postpartum)					
Anemia, pp	8.1*	3.8*	--	--	--
Weight, kg	1.2*	1.2*	1.1*		
Household					
Exterior clean (measured when the child was 24 months)	7.2*	--	--	--	--
Interior clean (measured when the child was 24 months)	--	--	--	--	7.6*
Household hunger (measured when the child was 12 months)	-4.0*	--	--	--	-4.0*

Note: pp=percentage point.

[a] All monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

[b] Impact estimates from linear mixed models that take into account all time points and the same control variables as were included in the estimates reported in Heckert et al. 2016.

[c] In the alternative scenario, presented in the footnote earlier in this section, in which the cost of MNP was 30 percent less expensive, the cost per beneficiary per pp reduction in stunting would be US$158.67.

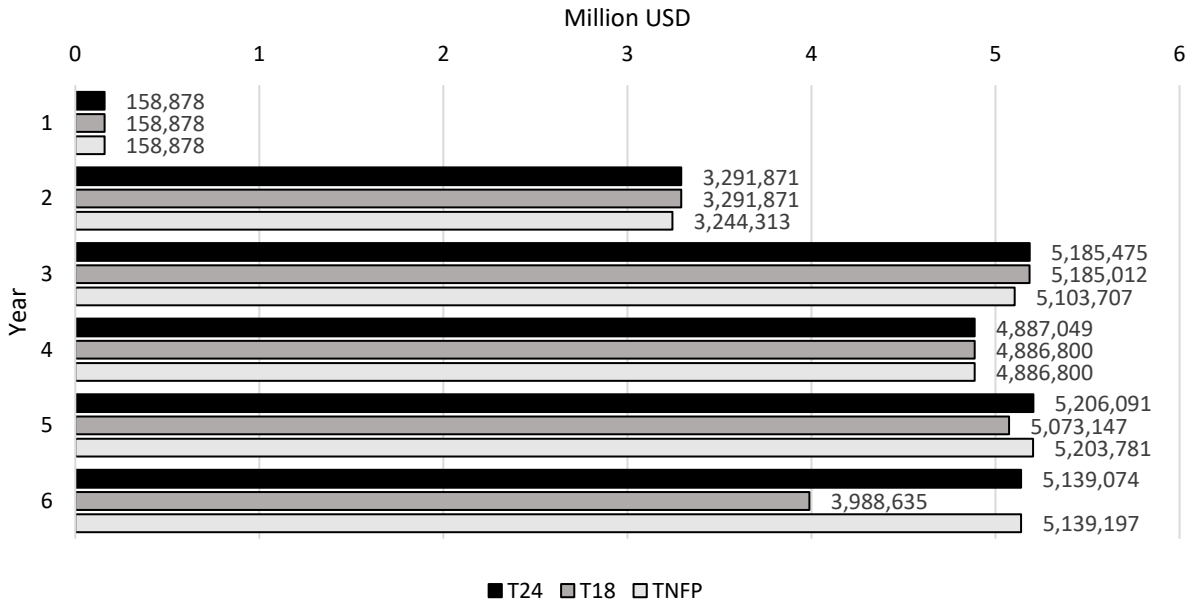
*Program impact significantly different from 0 (P<0.05).

-- No significant effect was found.

8.2 Program Activity Costs by Treatment Arm: *Tubaramure*, Burundi

If the *Tubaramure* program had been implemented in all 205 general enrollment and 45 research *collines*, as either the T24, T18, or TNFP version, the total cost of the program would have been US$23.9, US$22.6, or US$23.7 million, respectively. The T24 version would have been the most costly option, but it was only slightly more expensive than TNFP. Annual program activity costs would have also differed among different versions of the program (**Figure 8.3**). From Year 1 to Year 4, the T24 and T18 versions would have incurred similar annual costs. However, as beneficiaries graduated from food distribution eligibility, the annual cost of T18 in Year 5 and Year 6 was lower than the T24 costs. The cost of implementing TNFP would have been less than the T24 version in every year after Year 1; however, the differences between the T24 and TNFP versions were small.

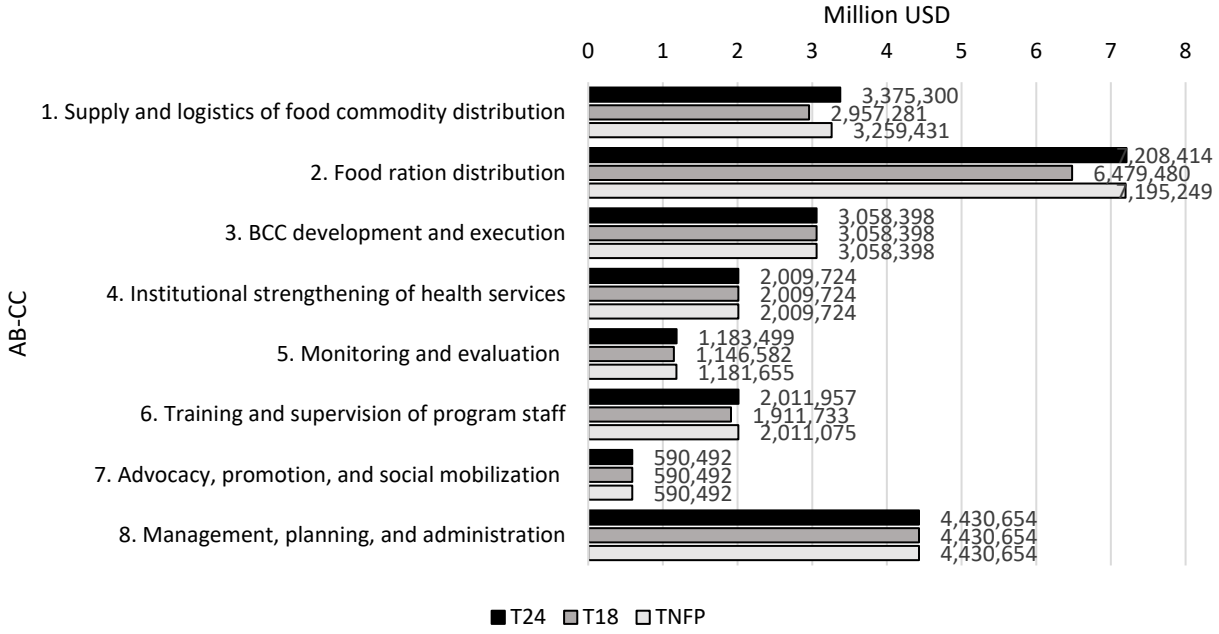
Figure 8.3 Annual program activity costs by treatment arm, *Tubaramure*



Note: The values include only the cost of program activities and do not include the cost of food rations.

The three versions of the program would have incurred different costs in four of the eight AB-CCs (**Figure 8.4)**. The largest differences in costs are attributable to AB-CCs 1 and 2, which account for both the logistics and distribution of food rations. The cost of these two AB-CCs combined would have been notably less expensive for T18 than T24 (US$1.1 million); their combined costs for TNFP would have been only slightly less expensive (US$0.1 million). The differences in the costs of AB-CC 5 (monitoring and evaluation) and AB-CC 6 (training and supervision of program staff) would have been relatively small, and in both cases, T18 would have been the least expensive, followed by TNFP.

Figure 8.4 Total cost of each AB-CC by treatment arm, *Tubaramure*



Note: The values include only the cost of program activities and do not include the cost of food rations.

Across all three possible versions of the program, costs were similarly distributed across the different types of inputs (**Table 8.27).** Personnel costs were the most costly type of input and would have been responsible for 66.5 percent of total costs in the T24 version of the program, 66.1 percent in the T18 version, and 66.7 percent in the TNFP version. In absolute costs, the difference in personnel cost across the treatment arms was greatest between the T24 and T18 arms (US$0.9 million). Recurrent transportation costs were the second most costly type of input, and would have been responsible for 9.6 percent of total costs in the T24 version, 9.3 percent in the T18 version, and 9.3 percent in the TNFP version. The difference in recurrent transportation costs was only US$0.2 million between the least expensive (T18) and most expensive (T24) versions of the program. The following sections show how the cost of each AB-CC would change if the program had been implemented as T24, T18, or TNFP.

Table 8.27 Total input costs by treatment arm, *Tubarmure*

	T24		T18		TNFP	
Type of input	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
Recurrent						
Personnel	15,862,816	66.5	14,935,654	66.1	15,836,079	66.7
Materials and supplies	1,104,815	4.6	1,057,995	4.7	1,104,497	4.7
Media	1,457	<0.1	1,457	<0.1	1,457	<0.1
Transportation	2,293,433	9.6	2,089,421	9.3	2,204,668	9.3
Maintenance	616,400	2.6	571,960	2.5	614,277	2.6
Utilities	124,446	0.5	118,938	0.5	123,531	0.5
Rent	404,432	1.7	392,669	1.7	402,091	1.7
Travel for program staff	350,411	1.5	320,079	1.4	349,016	1.5
Trainings for staff and service providers	440,978	1.8	440,978	2.0	440,939	1.9
Sub-grants	-	-	-	-	-	-
Consultations	184,540	0.8	182,449	0.8	184,110	0.8
Miscellaneous	264,701	1.1	269,647	1.2	264,516	1.1
Capital						
Transportation	492,891	2.1	480,354	2.1	485,066	2.0
Equipment	1,684,617	7.1	1,683,330	7.5	1,684,396	7.1
Furniture	42,500	0.2	39,414	0.2	42,034	0.2
Total costs by input						
Recurrent	21,648,430	90.7	20,381,246	90.2	21,525,180	90.7
Capital	2,220,008	9.3	2,203,098	9.8	2,211,496	9.3
Total	23,868,438	100.0	22,584,344	100.0	23,736,677	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Note: The values include only the cost of program activities and do not include the cost of food rations.

8.2.1 AB-CC 1: Supply and Logistics of Food Commodity Distribution Costs

The total cost of implementing AB-CC 1 (supply and logistics of food commodity distribution) would have been most expensive at US$3.4 million if a T24 version of the program had been implemented in all 250 *collines* (**Table 8.28**). TNFP would have been the second most expensive at US$3.3 million, and T18 the least expensive at US$3.0 million.

Differences in costs between the T24 and T18 versions of the program (the most and least expensive versions, respectively) were US$0.1 million for sub-AB-CC 1.1b (food commodity imports), US$0.2 million for sub-AB-CC 1.2 (management and storage), and US$0.1 million for sub-AB-CC 1.3 (coordination of transportation and distribution). The start-up costs of AB-CC 1 would have been identical across all three potential versions of the program.

The distribution of input costs would have been similar across all three versions of the program (**Table 8.29**). The largest differences in absolute costs by type of input were for personnel and recurrent transportation.

Table 8.28 Cost of activities by treatment arm for AB-CC 1: Supply and logistics of food distribution, *Tubaramure*

	T24		T18		TNFP	
Sub-AB-CC	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
1.1 Food commodity orders and imports						
1.1a Food commodity orders						
Start-up	15,309	0.5	15,309	0.5	15,309	0.5
Post-start-up	124,439	3.7	124,439	4.3	124,439	4.0
Total	139,748	4.1	139,748	4.8	139,748	4.5
1.1b Food commodity imports						
Start-up	18,458	0.5	18,458	0.6	18,458	0.6
Post-start-up	636,165	18.8	535,852	18.1	613,798	18.8
Total	654,623	19.4	554,310	18.7	632,256	19.4
1.2 Food commodity management and storage						
Start-up	11,175	0.3	11,175	0.4	11,175	0.3
Post-start-up	1,071,649	31.7	877,531	29.7	1,046,890	32.1
Total	1,082,824	32.1	888,707	30.1	1,058,065	32.5
1.3 Coordination of food commodity transportation and distribution						
Start-up	7,346	0.2	7,346	0.2	7,346	0.2
Post-start-up	1,203,438	35.7	1,079,850	36.5	1,134,696	34.8
Total	1,210,785	35.9	1,087,196	36.8	1,142,042	35.0
1.4 Monetization						
Start-up	39,922	1.2	39,922	1.3	39,922	1.2
Post-start-up	247,398	7.3	247,398	8.3	247,398	7.6
Total	287,320	8.5	287,320	9.7	287,320	8.8
Total						
Start-up	92,211	2.7	92,211	3.1	92,211	2.8
Post-start-up	3,283,089	97.3	2,865,070	96.9	3,167,221	97.2
Total	3,375,300	100.0	2,957,281	100.0	3,259,431	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.
Note: The values include only the cost of program activities and do not include the cost of food rations.

Table 8.29 Input costs by treatment arm for AB-CC 1: Supply and logistics of food distribution, *Tubaramure*

	T24		T18		TNFP	
Type of input	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
Recurrent						
Personnel	1,394,299	41.3	1,206,123	40.8	1,378,049	42.3
Materials and supplies	49,646	1.5	21,565	0.7	49,573	1.5
Media	4	<0.1	4	<0.1	4	<0.1
Transportation	1,526,180	45.2	1,377,655	46.6	1,438,580	44.1
Maintenance	49,994	1.5	33,248	1.1	49,400	1.5
Utilities	9,933	0.3	6,735	0.2	9,292	0.3
Rent	133,589	4.0	123,453	4.2	132,193	4.1
Travel for program staff	34,988	1.0	23,540	0.8	34,495	1.1
Trainings for staff and service providers	55,520	1.6	55,520	1.9	55,485	1.7
Sub-grants	-	-	-	-	-	-
Consultations	4,921	0.1	3,655	0.1	4,488	0.1
Miscellaneous	(8,112) [b]	-0.2	(4,676) [b]	-0.2	(8,252) [b]	-0.3
Capital						
Transport	57,782	1.7	45,801	1.5	50,104	1.5
Equipment	53,634	1.6	52,875	1.8	53,516	1.6
Furniture	12,923	0.4	11,783	0.4	12,504	0.4
Total costs by input						
Recurrent	3,250,961	96.3	2,846,822	96.3	3,143,307	96.4
Capital	124,339	3.7	110,459	3.7	116,124	3.6
Total	3,375,300	100.0	2,957,281	100.0	3,259,431	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

[b] The negative values appear to reflect adjustments related to banking transactions.

Note: The values include only the cost of program activities and do not include the cost of food rations.

8.2.2 AB-CC 2: Food Ration Distribution Costs

If the T24 version had been implemented in all 250 *collines*, the total cost of implementing AB-CC 2 (food ration distribution) would have been US$7.2 million (**Table 8.30**). Costs would have been similar for the TNFP version of the program but would have only been US$6.5 million for the T18 version of the program.

Costs differed in four sub AB-CCs: 2.2b (management of distribution), 2.2c (repackaging and distribution of rations), 2.3 (transportation), and 2.4c (monitoring eligibility of beneficiaries). In all cases, the difference in costs of the T24 and TNFP versions were small. The differences between the costs of T24 and T18 were notably larger (the largest difference was US$0.6 million for sub-AB-CC 2.2c). Start-up costs would have been the same in all three versions of the program.

Similar to AB-CC 1, the distribution of input costs would not have varied across different versions of the program (**Table 8.31**). The largest difference in costs was between the T24 and T18 versions of the program for personnel (US$0.7 million).

Table 8.30 Cost of activities by treatment arm for AB-CC 2: Food ration distribution, *Tubaramure*

	T24		T18		TNFP	
Sub-AB-CC	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
2.1 Community coordination						
Start-up	10,284	0.2	10,284	0.2	10,284	0.2
Post-start-up	48,319	0.8	48,319	0.8	48,319	0.8
Total	58,603	0.9	58,603	1.0	58,603	0.9
2.2 Repackaging and distribution of food rations						
2.2a Selection of distribution sites						
Start-up	19,615	0.3	19,615	0.3	19,615	0.3
Post-start-up	-	-	-	-	-	-
Total	19,615	0.3	19,615	0.3	19,615	0.3
2.2b Management of distribution						
Start-up	9,091	0.1	9,091	0.1	9,091	0.1
Post-start-up	790,164	11.0	677,080	10.4	788,338	11.0
Total	799,255	11.1	686,171	10.6	797,430	11.1
2.2c Repackaging and distribution of rations						
Start-up	-	-	-	-	-	-
Post-start-up	5,676,033	78.7	5,105,391	78.8	5,675,820	78.9
Total	5,676,033	78.7	5,105,391	78.8	5,675,820	78.9
2.3 Transportation						
Start-up	24,341	0.3	24,341	0.4	24,341	0.3
Post-start-up	61,615	0.9	53,051	0.8	61,615	0.9
Total	85,957	1.2	77,392	1.2	85,957	1.2
2.4 Beneficiary enrollment						
2.4a Beneficiary cards						
Start-up	7,723	0.1	7,723	0.1	7,723	0.1
Post-start-up	2,725	<0.1	2,725	<0.1	2,725	<0.1
Total	10,448	0.1	10,448	0.1	10,448	0.1
2.4b Beneficiary enrollment lists						
Start-up	-	-	-	-	-	-
Post-start-up	305,383	4.2	305,383	4.7	305,383	4.2
Total	305,383	4.2	305,383	4.7	305,383	4.2
2.4c Monitoring eligibility of beneficiaries						
Start-up	-	-	-	-	-	-
Post-start-up	222,962	3.1	186,318	2.9	211,835	2.9
Total	222,962	3.1	186,318	2.9	211,835	2.9

	T24		T18		TNFP	
Sub-AB-CC	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
2.5 Materials and supplies for food rations						
Start-up	16,972	0.2	16,972	0.3	16,972	0.2
Post-start-up	13,187	0.2	13,187	0.2	13,187	0.2
Total	30,159	0.4	30,159	0.5	30,159	0.4
Total						
Start-up	88,028	1.2	88,028	1.4	88,028	1.2
Post-start-up	7,120,386	98.8	6,391,453	98.6	7,107,221	98.8
Total	7,208,414	100.0	6,479,480	100.0	7,195,249	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.
Note: The values include only the cost of program activities and do not include the cost of food rations.

Table 8.31 Input costs by treatment arm for AB-CC 2: Food ration distribution, *Tubaramure*

	T24		T18		TNFP	
Type of input	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
Recurrent						
Personnel	6,574,590	91.2	5,881,189	90.8	6,564,101	91.2
Materials and supplies	53,310	0.7	46,223	0.7	53,191	0.7
Media	-	-	-	-	-	-
Transportation	104,742	1.5	89,517	1.4	104,191	1.4
Maintenance	114,227	1.6	105,849	1.6	113,497	1.6
Utilities	5,871	0.1	5,114	0.1	5,755	0.1
Rent	59,928	0.8	59,512	0.9	59,235	0.8
Travel for program staff	28,766	0.4	26,884	0.4	28,628	0.4
Trainings for staff and service providers	99	<0.1	99	<0.1	98	<0.1
Sub-grants	-	-	-	-	-	-
Consultations	658	<0.1	352	<0.1	658	<0.1
Miscellaneous	(2,276)[b]	<0.1	(1,721)[b]	<0.1	(2,305)[b]	<0.1
Capital						
Transport	92,375	1.3	91,832	1.4	92,229	1.3
Equipment	169,465	2.4	169,311	2.6	169,360	2.4
Furniture	6,658	0.1	5,321	0.1	6,610	0.1
Total costs by input						
Recurrent	6,939,915	96.3	6,213,017	95.9	6,927,050	96.3
Capital	268,499	3.7	266,464	4.1	268,199	3.7
Total	7,208,414	100.0	6,479,480	100.0	7,195,249	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.
[b] The negative values appear to reflect adjustments related to banking transactions.
Note: The values include only the cost of program activities and do not include the cost of food rations.

8.2.3 AB-CC 3: Behavior Change Communication Development and Execution Costs

AB-CC 3 (BCC development and execution) did not differ across the three treatment arms. Total costs are summarized in **Table 8.32** and total input costs in **Table 8.33**.

Table 8.32 Cost of activities by treatment arm for AB-CC 3: BCC development and execution, *Tubaramure*

	T24		T18		TNFP	
Sub-AB-CC	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
3.1 Formative research						
Start-up	57,778	1.9	57,778	2.0	57,778	1.9
Post-start-up	-	-	-	-	-	-
Total	57,778	1.9	57,778	2.0	57,778	1.9
3.2 Development of BCC materials						
3.2a Development of BCC modules, lesson plans, and specific-age card						
Start-up	888,264	29.0	888,264	29.0	888,264	29.0
Post-start-up	431,630	14.1	431,630	14.1	431,630	14.1
Total	1,319,894	43.2	1,319,894	43.2	1,319,894	43.2
3.2b Development and production of radio dramas						
Start-up	12,521	0.4	12,521	0.4	12,521	0.4
Post-start-up	94,486	3.1	94,486	3.1	94,486	3.1
Total	107,008	3.5	107,008	3.5	107,008	3.5
3.2c Development and production of poster materials						
Start-up	-	-	-	-	-	-
Post-start-up	58,392	1.9	58,392	1.9	58,392	1.9
Total	58,392	1.9	58,392	1.9	58,392	1.9
3.3 Beneficiary and leader mother care groups						
3.3a Training of leader mothers in leader mother care groups						
Start-up	-	-	-	-	-	-
Post-start-up	800,254	26.2	800,254	26.2	800,254	26.2
Total	800,254	26.2	800,254	26.2	800,254	26.2
3.3b Registration and formation of beneficiary groups and selection of leader mothers						
Start-up	61,881	2.0	61,881	2.0	61,881	2.0
Post-start-up	10,886	0.4	10,886	0.4	10,886	0.4
Total	72,767	2.4	72,767	2.4	72,767	2.4
3.3c Training of beneficiaries in care groups						
Start-up	-	-	-	-	-	-
Post-start-up	66,491	2.2	66,491	2.2	66,491	2.2
Total	66,491	2.2	66,491	2.2	66,491	2.2
3.3d Supervision of beneficiaries by *Tubaramure* health promoters						
Start-up	-	-	-	-	-	-
Post-start-up	227,879	7.5	227,879	7.5	227,879	7.5
Total	227,879	7.5	227,879	7.5	227,879	7.5
3.3e Home visits conducted by *Tubaramure* leader mothers						
Start-up	-	-	-	-	-	-
Post-start-up	35,603	1.2	35,603	1.2	35,603	1.2
Total	35,603	1.2	35,603	1.2	35,603	1.2
3.4 Recipe development						
Start-up	33,265	1.1	33,265	1.1	33,265	1.1
Post-start-up	4,556	0.1	4,556	0.1	4,556	0.1
Total	37,821	1.2	37,821	1.2	37,821	1.2
3.5 Agricultural development						
3.5a Development of agricultural materials						
Start-up	2,262	0.1	2,262	0.1	2,262	0.1
Post-start-up	-	-	-	-	-	-
Total	2,262	0.1	2,262	0.1	2,262	0.1

	T24		T18		TNFP	
Sub-AB-CC	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
3.5b Vegetable seed, fruit tree, and chicken distribution						
Start-up	-	-	-	-	-	-
Post-start-up	246,864	8.1	246,864	8.1	246,864	8.1
Total	246,864	8.1	246,864	8.1	246,864	8.1
3.6 Savings and internal lending communities						
Start-up	-	-	-	-	-	-
Post-start-up	25,635	0.8	25,635	0.8	25,635	0.8
Total	25,635	0.8	25,635	0.8	25,635	0.8
Total						
Start-up	1,055,722	34.5	1,055,722	34.5	1,055,722	34.5
Post-start-up	2,002,676	65.5	2,002,676	65.5	2,002,676	65.5
Total	3,058,398	100.0	3,058,398	100.0	3,058,398	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 8.33 Input costs by treatment arm for AB-CC 3: BCC development and execution, *Tubaramure*

	T24		T18		TNFP	
Type of input	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
Recurrent						
Personnel	1,214,288	39.7	1,214,288	39.7	1,214,288	39.7
Materials and supplies	387,230	12.7	387,230	12.7	387,230	12.7
Media	1,442	<0.1	1,442	<0.1	1,442	<0.1
Transportation	49,727	1.6	49,727	1.6	49,727	1.6
Maintenance	33,707	1.1	33,707	1.1	33,707	1.1
Utilities	4,935	0.2	4,935	0.2	4,935	0.2
Rent	10,687	0.3	10,687	0.3	10,687	0.3
Travel for program staff	16,340	0.5	16,340	0.5	16,340	0.5
Training for staff and service providers	124,422	4.1	124,422	4.1	124,422	4.1
Sub-grants	-	-	-	-	-	-
Consultations	1,817	0.1	1,817	0.1	1,817	0.1
Miscellaneous	3,528	0.1	3,528	0.1	3,528	0.1
Capital						
Transport	60,559	2.0	60,559	2.0	60,559	2.0
Equipment	1,148,161	37.5	1,148,161	37.5	1,148,161	37.5
Furniture	1,555	0.1	1,555	0.1	1,555	0.1
Total costs by input						
Recurrent	1,848,123	60.4	1,848,123	60.4	1,848,123	60.4
Capital	1,210,275	39.6	1,210,275	39.6	1,210,275	39.6
Total	3,058,398	100.0	3,058,398	100.0	3,058,398	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.2.4 AB-CC 4: Institutional Strengthening of Health Services Costs

AB-CC 4 (institutional strengthening of health services) did not differ across treatment arms. Total costs are summarized in **Table 8.34** and total input costs in **Table 8.35**.

Table 8.34 Cost of activities by treatment arm for AB-CC 4: Institutional strengthening of health services, *Tubaramure*

	T24		T18		TNFP	
Sub-AB-CC	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
4.1 Improved communication						
4.1a Strengthen communication between communities and health centers						
Start-up	14,589	0.7	14,589	0.7	14,589	0.7
Post-start-up	140,215	7.0	140,215	7.0	140,215	7.0
Total	154,805	7.7	154,805	7.7	154,805	7.7
4.1b Provincial-level support for IMC activities						
Start-up	39,228	1.9	39,228	1.9	39,228	1.9
Post-start-up	151,840	7.5	151,840	7.5	151,840	7.5
Total	191,069	9.5	191,069	9.5	191,069	9.5
4.2 Trainings and provision of equipment						
4.2a IMC support for PHAs and DHAs						
Start-up	51,918	2.6	51,918	2.6	51,918	2.6
Post-start-up	15,619	0.8	15,619	0.8	15,619	0.8
Total	67,538	3.3	67,538	3.3	67,538	3.3
4.2b IMC provision of materials and equipment						
Start-up	107	<0.1	107	<0.1	107	<0.1
Post-start-up	235,320	11.7	235,320	11.7	235,320	11.7
Total	235,427	11.7	235,427	11.7	235,427	11.7
4.2c IMC support for provincial health technicians, CHWs, and THPs						
Start-up	4,125	0.2	4,125	0.2	4,125	0.2
Post-start-up	211,681	10.5	211,681	10.5	211,681	10.5
Total	215,806	10.7	215,806	10.7	215,806	10.7
4.2d IMC support for nurses and paramedics						
Start-up	8,478	0.4	8,478	0.4	8,478	0.4
Post-start-up	119,982	5.9	119,982	6.0	119,982	5.9
Total	128,460	6.4	128,460	6.4	128,460	6.4
4.3 Supervision and monitoring						
4.3a IMC monthly supervisions						
Start-up	1,009	0.1	1,009	0.1	1,009	0.1
Post-start-up	483,277	24.0	483,277	24.0	483,277	24.0
Total	484,286	24.1	484,286	24.1	484,286	24.1
4.3b Joint supervisions with the Ministry of Health						
Start-up	4,516	0.2	4,516	0.2	4,516	0.2
Post-start-up	70,563	3.5	70,563	3.5	70,563	3.5
Total	75,079	3.7	75,079	3.7	75,079	3.7
4.4 Finance and administration support						
Start-up	-	-	-	-	-	-
Post-start-up	457,255	22.8	457,255	22.8	457,255	22.8
Total	457,255	22.8	457,255	22.8	457,255	22.8
Total						
Start-up	123,970	6.2	123,970	6.2	123,970	6.2
Post-start-up	1,885,754	93.8	1,885,754	93.8	1,885,754	93.8
Total	2,009,724	100.0	2,009,724	100.0	2,009,724	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 8.35 Input costs by treatment arm for AB-CC 4: Institutional strengthening of health services, *Tubaramure*

	T24		T18		TNFP	
Type of input	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
Recurrent						
Personnel	973,185	48.4	973,185	48.4	973,185	48.4
Materials and supplies	349,628	17.4	349,628	17.4	349,628	17.4
Media	-	-	-	-	-	-
Transportation	53,618	2.7	53,618	2.7	53,618	2.7
Maintenance	30,447	1.5	30,447	1.5	30,447	1.5
Utilities	30,993	1.5	30,993	1.5	30,993	1.5
Rent	46,001	2.3	46,001	2.3	46,001	2.3
Travel for program staff	5,169	0.3	5,169	0.3	5,169	0.3
Trainings for staff and service providers	42,107	2.1	42,107	2.1	42,107	2.1
Sub-grants	-	-	-	-	-	-
Consultations	1,181	0.1	1,181	0.1	1,181	0.1
Miscellaneous	198,276	9.9	198,276	9.9	198,276	9.9
Capital						
Transport	60,923	3.0	60,923	3.0	60,923	3.0
Equipment	215,574	10.7	215,574	10.7	215,574	10.7
Furniture	2,623	0.1	2,623	0.1	2,623	0.1
Total costs by input						
Recurrent	1,730,604	86.1	1,730,604	86.1	1,730,604	86.1
Capital	279,120	13.9	279,120	13.9	279,120	13.9
Total	2,009,724	100.0	2,009,724	100.0	2,009,724	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.2.5 AB-CC 5: Monitoring and Evaluation Costs

The total cost of implementing AB-CC 5 (monitoring and evaluation) would have been virtually the same if any of the program versions had been implemented in all 250 *collines* (**Table 8.36**). As would be expected, the small differences in the overall cost of the program were all due to differences in the cost of implementing sub-AB-CC 5.2b (food ration utilization). AB-CC 5's start-up costs would not have differed across the three versions of the program.

The distribution of input costs was similar across treatment arms (**Table 8.37**).

Table 8.36 Cost of activities by treatment arm for AB-CC 5: Monitoring and evaluation, *Tubaramure*

	T24		T18		TNFP	
Sub-AB-CC	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
5.1 Planning						
Start-up	17,505	1.5	17,505	1.6	17,505	1.5
Post-start-up	102,686	8.7	102,686	9.4	102,686	8.7
Total	120,192	10.2	120,192	11.1	120,192	10.2
5.2 Monitoring						
5.2a Quarterly monitoring						
Start-up	8,452	0.7	8,452	0.7	8,452	0.7
Post-start-up	195,404	16.5	195,404	17.0	195,404	16.5
Total	203,856	17.2	203,856	17.7	203,856	17.3
5.2b Monitoring food ration utilization						
Start-up	-	-	-	-	-	-
Post-start-up	259,796	22.0	222,762	19.4	257,952	21.8
Total	259,796	22.0	222,762	19.4	257,952	21.8
5.2c Additional monitoring						
Start-up	12,441	1.1	12,441	1.1	12,441	1.1
Post-start-up	90,425	7.6	90,425	7.9	90,425	7.7
Total	102,867	8.7	102,867	9.0	102,867	8.7
5.2d Monitoring trigger indicators						
Start-up	17,415	1.5	17,415	1.5	17,415	1.5
Post-start-up	211,914	17.9	211,914	18.5	211,914	17.9
Total	229,329	19.4	229,329	20.0	229,329	19.4
5.3 Evaluation						
5.3a Baseline survey						
Start-up	105,611	8.9	105,611	9.2	105,611	8.9
Post-start-up	-	-	-	-	-	-
Total	105,611	8.9	105,611	9.2	105,611	8.9
5.3b Midline survey						
Start-up	19,297	1.6	19,297	1.7	19,297	1.6
Post-start-up	17,339	1.5	17,339	1.5	17,339	1.5
Total	36,636	3.1	36,636	3.2	36,636	3.1
5.3c Endline survey						
Start-up	-	-	-	-	-	-
Post-start-up	125,213	10.6	125,213	10.9	125,213	10.6
Total	125,213	10.6	125,213	10.9	125,213	10.6
Total						
Start-up	180,722	15.3	180,722	15.8	180,722	15.3
Post-start-up	1,002,777	84.7	965,860	84.2	1,000,933	84.7
Total	1,183,499	100.0	1,146,582	100.0	1,181,655	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 8.37 Input costs by treatment arm for AB-CC 5: Monitoring and evaluation, *Tubaramure*

	T24		T18		TNFP	
Type of input	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
Recurrent						
Personnel	621,878	52.5	620,787	54.1	621,878	52.6
Materials and supplies	33,136	2.8	28,900	2.5	33,134	2.8
Media	-	-	-	-	-	-
Transportation	128,237	10.8	110,625	9.6	128,134	10.8
Maintenance	69,843	5.9	62,512	5.5	69,242	5.9
Utilities	8,081	0.7	7,478	0.7	7,937	0.7
Rent	7,599	0.6	7,182	0.6	7,371	0.6
Travel for program staff	61,988	5.2	56,831	5.0	61,223	5.2
Trainings for staff and service providers	80,175	6.8	80,175	7.0	80,173	6.8
Sub-grants	-	-	-	-	-	-
Consultations	166,317	14.1	166,124	14.5	166,326	14.1
Miscellaneous	838	0.1	798	0.1	823	0.1
Capital						
Transport	336	<0.1	329	<0.1	336	<0.1
Equipment	4,270	0.4	4,066	0.4	4,275	0.4
Furniture	799	0.1	774	0.1	802	0.1
Total costs by input						
Recurrent	1,178,094	99.5	1,141,413	99.5	1,176,242	99.5
Capital	5,405	0.5	5,169	0.5	5,413	0.5
Total	1,183,499	100.0	1,146,582	100.0	1,181,655	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.2.6 AB-CC 6: Training and Supervision of Program Staff Costs

The total cost of training and supervising program staff (AB-CC 6) would have been most expensive in the T24 version of the program, at US$2.0 million (**Table 8.38**). It would have cost virtually the same if TNFP had been implemented everywhere; AB-CC 6 would have cost US$100,000 less if the T18 version had been implemented.

The differences in the overall cost of the program were due to differences in the cost of implementing sub-AB-CC 6.4a (supervision of food ration distribution sites) and 6.4b (supervision of end-use agents). Start-up costs would not have differed across the three versions of the program.

The distribution of input costs was similar across treatment arms (**Table 8.39**). The largest differences in the absolute costs by type of input were for personnel and recurrent transportation costs.

Table 8.38 Cost of activities by treatment arm for AB-CC 6: Training and supervision of program staff, *Tubaramure*

	T24		T18		TNFP	
Sub-AB-CC	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
6.1 BCC training						
6.1a Training field staff on BCC modules and specific-age cards						
Start-up	68,255	3.4	68,255	3.6	68,255	3.4
Post-start-up	207,203	10.3	207,203	10.8	207,203	10.3
Total	275,458	13.7	275,458	14.4	275,458	13.7
6.1b Training of consortium staff on BCC components						
Start-up	48,094	2.4	48,094	2.5	48,094	2.4
Post-start-up	-	-	-	-	-	-
Total	48,094	0.8	48,094	2.5	48,094	2.4
6.1c Supervision of BCC supervisors and THPs						
Start-up	5,490	0.3	5,490	0.3	5,490	0.3
Post-start-up	760,171	37.8	760,171	39.8	760,171	37.8
Total	765,660	38.1	765,660	40.1	765,660	38.1
6.1d Training on agricultural methods						
Start-up	15,352	0.8	15,352	0.8	15,352	0.8
Post-start-up	-	-	-	-	-	-
Total	15,352	0.8	15,352	0.8	15,352	0.8
6.1e Recipe training						
Start-up	16,294	0.8	16,294	0.9	16,294	0.8
Post-start-up	-	-	-	-	-	-
Total	16,294	0.8	16,294	0.9	16,294	0.8
6.2 Monitoring and evaluation training and supervision						
6.2a Indicator training						
Start-up	10,001	0.5	10,001	0.5	10,001	0.5
Post-start-up	-	-	-	-	-	-
Total	10,001	0.5	10,001	0.5	10,001	0.5
6.2b Supervision of field staff						
Start-up	33,864	1.7	33,864	1.8	33,864	1.7
Post-start-up	241,806	12.0	241,806	12.6	241,806	12.0
Total	275,670	13.7	275,670	14.4	275,670	13.7
6.3 Institutional strengthening						
Start-up	5,109	0.3	5,109	0.3	5,109	0.3
Post-start-up	9,288	0.5	9,288	0.5	9,288	0.5
Total	14,397	0.7	14,397	0.8	14,397	0.7
6.4 Food ration distribution training and supervision						
6.4a Supervision of food ration distribution sites						
Start-up	-	-	-	-	-	-

	T24		T18		TNFP	
Sub-AB-CC	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
Post-start-up	356,864	17.7	286,383	15.0	355,981	17.7
Total	356,864	17.7	286,383	15.0	355,981	17.7
6.4b Supervision of end-use agents						
Start-up	-	-	-	-	-	-
Post-start-up	148,894	7.4	119,150	6.2	148,894	7.4
Total	148,894	7.4	119,150	6.2	148,894	7.4
6.4c Training of food distribution site managers						
Start-up	24,118	1.2	24,118	1.3	24,118	1.2
Post-start-up	61,154	3.0	61,154	3.2	61,154	3.0
Total	85,271	4.2	85,271	4.5	85,271	4.2
Total						
Start-up	226,578	11.3	226,578	11.9	226,578	11.3
Post-start-up	1,785,379	88.7	1,685,155	88.1	1,784,496	88.7
Total	2,011,957	100.0	1,911,733	100.0	2,011,075	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 8.39 Input costs by treatment arm for AB-CC 6: Training and supervision of program staff, *Tubaramure*

	T24		T18		TNFP	
Type of input	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
Recurrent						
Personnel	1,265,983	62.9	1,221,488	63.9	1,265,983	63.0
Materials and supplies	46,767	2.3	39,351	2.1	46,643	2.3
Media	-	-	-	-	-	-
Transportation	151,500	7.5	128,849	6.7	150,988	7.5
Maintenance	123,558	6.1	111,572	5.8	123,361	6.1
Utilities	16,935	0.8	15,985	0.8	16,921	0.8
Rent	42,653	2.1	41,858	2.2	42,628	2.1
Travel for program staff	87,038	4.3	75,194	3.9	87,038	4.3
Trainings for staff and service providers	108,512	5.4	108,512	5.7	108,512	5.4
Sub-grants	-	-	-	-	-	-
Consultations	1,275	0.1	949	<0.1	1,269	0.1
Miscellaneous	1,442	0.1	2,437	0.1	1,441	0.1
Capital						
Transport	127,340	6.3	127,334	6.7	127,340	6.3
Equipment	32,582	1.6	32,412	1.7	32,579	1.6
Furniture	6,374	0.3	5,791	0.3	6,372	0.3
Total costs by input						
Recurrent	1,845,662	91.7	1,746,196	91.3	1,844,784	91.7
Capital	166,296	8.3	165,537	8.7	166,291	8.3
Total	2,011,957	100.0	1,911,733	100.0	2,011,075	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.2.7 AB-CC 7: Advocacy, Promotion, and Social Mobilization

AB-CC 7 (advocacy, promotion, and social mobilization) would have been slightly less expensive than the actual program (see section 6.2.7) if any single treatment arm were implemented throughout the program area (**Table 8.40**). The small savings would have been due to a lower cost of obtaining permission to conduct the study. The cost of AB-CC 7 (US$0.6 million) would have been the same for all three versions of the program. The lower costs were attributable to differences in personnel costs (**Table 8.41)**.

Table 8.40 Cost of activities by treatment arm for AB-CC 7: Advocacy, promotion, and social mobilization, *Tubaramure*

Sub-AB-CC	T24		T18		TNFP	
	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
7.1 Host country agreement						
Start-up	4,191	0.7	4,191	0.8	4,191	0.7
Post-start-up	-	-	-	-	-	-
Total	4,191	0.7	4,191	0.8	4,191	0.7
7.2 Sensitization and local approval						
Start-up	53,253	9.0	53,253	9.0	53,253	9.0
Post-start-up	201,709	34.2	201,709	34.2	201,709	34.2
Total	254,962	8.6	254,962	43.2	254,962	43.2
7.3 Permission to perform study						
Start-up	2,921	0.5	2,921	0.5	2,921	0.5
Post-start-up	-	-	-	-	-	-
Total	2,921	0.5	2,921	0.5	2,921	0.5
7.4 Meetings and workshops						
Start-up	50,635	8.6	50,635	8.6	50,635	8.6
Post-start-up	277,782	47.0	277,782	47.0	277,782	47.0
Total	328,417	55.6	328,417	55.6	328,417	55.6
Total						
Start-up	111,001	18.8	111,001	18.8	111,001	18.8
Post-start-up	479,491	81.2	479,491	81.2	479,491	81.2
Total	590,492	100.0	590,492	100.0	590,492	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 8.41 Input costs by treatment arm for AB-CC 7: Advocacy, promotion, and social mobilization, *Tubaramure*

	T24		T18		TNFP	
Type of input	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
Recurrent						
Personnel	469,609	79.5	469,609	79.5	469,609	79.5
Materials and supplies	8,945	1.5	8,945	1.5	8,945	1.5
Media	-	-	-	-	-	-
Transportation	41,610	7.0	41,610	7.0	41,610	7.0
Maintenance	16,302	2.8	16,302	2.8	16,302	2.8
Utilities	2,494	0.4	2,494	0.4	2,494	0.4
Rent	7,997	1.4	7,997	1.4	7,997	1.4
Travel for program staff	13,970	2.4	13,970	2.4	13,970	2.4
Trainings for staff and service providers	11,763	2.0	11,763	2.0	11,763	2.0
Sub-grants	-	-	-	-	-	-
Consultations	315	0.1	315	0.1	315	0.1
Miscellaneous	446	0.1	446	0.1	446	0.1
Capital						
Transport	12,598	2.1	12,598	2.1	12,598	2.1
Equipment	2,848	0.5	2,848	0.5	2,848	0.5
Furniture	1,595	0.3	1,595	0.3	1,595	0.3
Total costs by input						
Recurrent	573,452	97.1	573,452	97.1	573,452	97.1
Capital	17,040	2.9	17,040	2.9	17,040	2.9
Total	590,492	100.0	590,492	100.0	590,492	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.2.8 AB-CC 8: Management, Planning, and Administration Costs

AB-CC 8 (management, planning, and administration) did not differ across the three treatment arms. Total costs are summarized in **Table 8.42** and total input costs in **Table 8.43**.

Table 8.42 Cost of activities by treatment arm for AB-CC 8: Management, planning, and administration, *Tubaramure*

	T24		T18		TNFP	
Sub-AB-CC	US$ [a]	% of arm costs	US$ [a]	% of arm costs	US$ [a]	% of arm costs
8.1 Recruitment						
Start-up	78,695	1.8	78,695	1.8	78,695	1.8
Post-start-up	-	-	-	-	-	-
Total	78,695	1.8	78,695	1.8	78,695	1.8
8.2 Procurement						
Start-up	40,200	0.9	40,200	0.9	40,200	0.9
Post-start-up	18,563	0.4	18,563	0.4	18,563	0.4
Total	58,763	1.3	58,763	1.3	58,763	1.3
8.3 Program logistics						
Start-up	31,878	0.7	31,878	0.7	31,878	0.7
Post-start-up	-	-	-	-	-	-
Total	31,878	0.7	31,878	0.7	31,878	0.7
8.4 Offices and infrastructure						
8.4a Support services for all consortium members						
Start-up	117,995	2.7	117,995	2.7	117,995	2.7
Post-start-up	376,552	8.5	376,552	8.5	376,552	8.5
Total	494,547	11.2	494,547	11.2	494,547	11.2
8.4b Meetings						
Start-up	-	-	-	-	-	-
Post-start-up	1,296,922	29.3	1,296,922	29.3	1,296,922	29.3
Total	1,296,922	29.3	1,296,922	29.3	1,296,922	29.3
8.5 Headquarters support						
Start-up	-	-	-	-	-	-
Post-start-up	775,368	17.5	775,368	17.5	775,368	17.5
Total	775,368	17.5	775,368	17.5	775,368	17.5
8.6 Finance support						
Start-up	242,368	5.5	242,368	5.5	242,368	5.5
Post-start-up	1,452,113	32.8	1,452,113	32.8	1,452,113	32.8
Total	1,694,480	38.2	1,694,480	38.2	1,694,480	38.2
Total						
Start-up	511,135	11.5	511,135	11.5	511,135	11.5
Post-start-up	3,919,518	88.5	3,919,518	88.5	3,919,518	88.5
Total	4,430,654	100.0	4,430,654	100.0	4,430,654	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

Table 8.43 Input costs by treatment arm for AB-CC 8: Management, planning, and administration, *Tubaramure*

	T24		T18		TNFP	
Type of input	US$[a]	% of arm costs	US$	% of arm costs	US$	% of arm costs
Recurrent						
Personnel	3,348,986	75.6	3,348,986	75.6	3,348,986	75.6
Materials and supplies	176,154	4.0	176,154	4.0	176,154	4.0
Media	-	-	-	-	-	-
Transportation	237,830	5.4	237,830	5.4	237,830	5.4
Maintenance	178,323	4.0	178,323	4.0	178,323	4.0
Utilities	45,204	1.0	45,204	1.0	45,204	1.0
Rent	95,978	2.2	95,978	2.2	95,978	2.2
Travel for program staff	102,151	2.3	102,151	2.3	102,151	2.3
Trainings for staff and service providers	18,380	0.4	18,380	0.4	18,380	0.4
Sub-grants	-	-	-	-	-	-
Consultations	8,055	0.2	8,055	0.2	8,055	0.2
Miscellaneous	70,558	1.6	70,558	1.6	70,558	1.6
Capital						
Transport	80,978	1.8	80,978	1.8	80,978	1.8
Equipment	58,083	1.3	58,083	1.3	58,083	1.3
Furniture	9,973	0.2	9,973	0.2	9,973	0.2
Total costs by input						
Recurrent	4,281,619	96.6	4,281,619	96.6	4,281,619	96.6
Capital	149,035	3.4	149,035	3.4	149,035	3.4
Total	4,430,654	100.0	4,430,654	100.0	4,430,654	100.0

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.2.9 Cost of Food Rations

Though not incurred directly by the implementing consortium of NGOs, there was also a cost to acquiring and shipping the food commodities.[43] The total cost of each monthly food ration included the cost of both an individual ration and a household ration. Pregnant women and mothers of children under 6 months of age received twice the quantity of CSB and oil that was allocated to children 6–23 months of age (Table 3.5). The size of the family ration was the same among all beneficiaries.

A metric ton of CSB was on average US$520.05, or US$0.520 per kg, and oil was US$1.080 per kg; in both cases, transportation via ocean freight was estimated at US$0.090 per kg (USAID 2016). The total cost of an individual monthly ration provided to pregnant women and mothers of children under 6 months of age was US$4.36 (**Table 8.44**). The total cost of the individual monthly ration allocated to children 6–23 months of age was US$2.18, and the household ration was US$8.72.

Table 8.44 Monthly cost of individual and family ration, *Tubaramure*

	CSB	Oil	Total
Target group	US$[a]	US$	US$
Pregnant women or mothers with children <6 months	3.66	0.70	4.36
Child 6-23 months	1.83	0.35	2.18
Family	7.32	1.40	8.72

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.2.10 Cost per Beneficiary

The total cost per beneficiary combined both the cost of program activities and of the food rations. The *Tubaramure* food ration distribution database was used to calculate the number of beneficiary-months[44] that program services were delivered. Throughout the duration of the program, program services were delivered for 1,427,134 beneficiary-months (**Table 8.45**). Thus, the monthly cost of program activities would have been US$16.72 in a T24 version, US$15.82 in a T18 version, and US$16.63 in a TNFP version (**Table 8.46**).

Table 8.45 Program participation numbers, *Tubaramure*

Year	Beneficiary-months of program participation
2009	-
2010	221,920
2011	505,678
2012	493,262
2013	170,872
2014	35,403
Total	1,427,134

[43] FFP purchased the commodities and had them shipped to Dar es Salaam, Tanzania. Though the implementing NGOs did not make these payments directly, they managed these funds, which were part of the award (not in addition to it). \

[44] Beneficiary-months are used, because new beneficiaries enrolled and existing beneficiaries graduated on a monthly basis. Additionally, in the first and final years of the program, *Tubaramure* did not operate for the entire year. Providing services to one mother-child dyad for 1 year is equal to 12 beneficiary-months.

Table 8.46 Monthly cost of program activities per beneficiary by treatment arm, *Tubaramure*

	T24	T18	TNFP
Total cost of program activities (US$)[a]	23,868,438	22,584,344	23,736,677
Total number of beneficiary-months	1,427,134	1,427,134	1,427,134
Monthly cost of program activities per beneficiary (US$)	16.72	15.82	16.63

[a] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.
Note: The values include only the cost of program activities and do not include the cost of food rations.

The total cost of program activities per beneficiary (monthly cost of program activities per beneficiary times the average duration of program participation) would have been highest in a T24 version of the program (US$451.57). The TNFP version would have been slightly less expensive (US$449.07), and the T18 version would have been the least costly (US$427.27) (**Table 8.47**). Similarly, the total cost of food rations would have been most expensive in the T24 version of the program (US$314.06), followed by the TNFP version (US$261.72), and the T18 version (US$248.63). The total combined cost of the food ration and program activities for the complete program to an individual in the T24 version of the program if it had been implemented in all 250 *collines* would have been US$765.63. The total cost per beneficiary for the TNFP version would have been less expensive, at US$710.79. T18 would have been the least expensive version of the program, at US$675.91.

Table 8.47 Program costs per beneficiary by treatment arm, *Tubaramure*

	T24	T18	TNFP
Months that each program component was received (#)			
Ration for pregnant women or mothers of children <6 months [a]	9	9	5
Ration for child 6-23 months [a]	18	12	18
Family ration [a]	27	21	23
Duration of program participation (including BCC and health services) [b]	27	27	27
Cost of food ration per beneficiary for the duration of the program (US$)[c]			
Pregnant women or mothers of children <6 months (4.36 US$ per month)	39.26	39.26	21.81
Child 6-23 months (US$2.18 per month)	39.26	26.17	39.26
Family (US$8.72 per month)	235.55	183.20	200.65
Cost of food rations per beneficiary for the duration of the program (US$)	314.06	248.63	261.72
Cost of program activities per beneficiary for the duration of the program (US$)[c]	451.57	427.27	449.07
Combined cost of food ration and program activities (US$)[c]	765.63	675.91	710.79

[a] Calculated using the *Tubaramure* food ration beneficiary database.
[b] There were no available data on the timing of enrollment for beneficiaries in the TNFP arm, because they began participating in care groups and were eligible for health services before they were eligible for food rations. All versions of the program aimed to enroll beneficiary women during pregnancy.
[c] Monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

8.2.11 Program Benefits

A significant program impact on stunting was found in the T24 and T18 arms, but not in the TNFP arm. Given the cost per beneficiary, the cost-effectiveness of the program with respect to linear growth was estimated at US$108 and US$130 per beneficiary per percentage point reduction in stunting in the T24 and T18 arms, respectively (**Table 8.48**). In addition to the impact on growth, the *Tubaramure* investment (which ranged from US$676 to US$766 per beneficiary in the T18 and T24 arms) led to positive impacts on a large number of outcomes at the child, maternal, and household levels. As shown in Table 8.48, the program improved child Hb and development, increased some aspects of health care seeking, reduced child morbidity, and improved infant and young child feeding practices. In mothers, the program was found to reduce anemia, increase dietary diversity, and improve prenatal care seeking. *Tubaramure* also improved maternal knowledge in a number of health and nutrition-related domains, improved household

food security and hand washing practices, and decreased the proportion of households not treating their drinking water.

In addition to the effects listed in Table 8.48, the program was shown to have a lasting impact in households that had graduated from the program (Leroy et al. 2016). For instance, after *Tubaramure* ended, it continued to protect children from the overall increase in child morbidity observed from baseline to follow-up, and it had positive post-program effects on household access to food and on household and mothers' dietary diversity.

Table 8.48 Program costs and effects by treatment arm, *Tubaramure*

	T24	T18	TNFP
Linear growth			
Cost per beneficiary (US$)[a]	765.63	675.91	710.79
Impact on stunting (pp)[b]	7.1*	5.2*	--
Cost per beneficiary per pp reduction in stunting (US$)	107.84	129.98	--
Other program impacts[c]			
Child (0-23.9 months)			
Hb, g/dl	0.34±0.20*	0.56±0.18*	--
Motor milestones (12-23.9 months)	--	--	1.00±0.51*
Language milestones (4-23.9 months))	0.64±0.27*	0.39±0.23*	--
Received treatment for fever, pp	15.30±5.92*	--	10.34±5.75*
Illness past 2 weeks, pp	-12.37±6.49*	-8.69±3.24*	-6.99±4.09*
Consumption of iron-rich foods (6-23.9 months), pp	39.60±4.49*	27.61±4.32*	37.16±4.39*
Minimum meal frequency (6-23.9 months), pp	--	13.80±4.28*	25.69±5.18*
Minimum dietary diversity (6-23.9 months), pp	6.87±4.03*	11.74±4.66*	9.19±4.28*
Minimal acceptable diet (6-23.9 months), pp	--	11.27±2.98*	13.47±3.67*
Mother			
Anemia, pp[d]	-7.55±4.36*	--	--
Dietary diversity, groups out of 9	0.31±0.12*	0.47±0.12*	0.40±0.13*
Total number of prenatal visits	0.18±0.10*	0.31±0.10*	--
Had at least 4 prenatal visits, pp	14.85±5.20*	19.06±5.30*	11.86±4.98*
Pregnancy month at 1st prenatal visit	-0.27±0.15*	-0.35±0.13*	-0.25±0.14*
Knowledge[e]			
Average number of hand-washing practices mentioned, pp	0.23±0.09*	0.26±0.09*	0.38±0.08*
Knows ash as appropriate hand-washing product, pp	9.99±2.89*	7.26±2.75*	13.07±3.07*
Believes liquids can be introduced before 6 months, pp	-8.75±2.14*	-6.09±1.99*	-5.96±2.69*
Believes foods can be introduced before 6 months, pp	-2.17±0.85*	-1.97±0.72*	-2.63±0.75*
Knows correct feeding frequency for child 6-9 months	--	9.80±4.45*	18.74±5.29*
Knows correct feeding frequency for child 12-23 months	--	6.38±3.67*	--
Knows yellow/orange fruits & vegetables as source of vitamin A, pp	12.78±5.71*	10.63±5.38*	15.12±5.79*
Knows CSB as source of iron, pp	5.94±2.44*	3.81±1.28*	8.05±1.66*
Believes sick child (<6 months) should be fed less breastmilk, pp	-7.20±2.93*	-6.29±2.73*	-6.43±2.92*
Believes sick child (>6 months) should be fed less food, pp	-7.03±3.13*	-5.78±2.61*	-7.90±3.79*
Household			
Severely food insecure, pp	-17.84±4.41*	-9.17±3.23*	-11.81±3.43*
Wash hands with soap after defecation, pp	5.97±2.77*	4.34±1.79*	4.80±2.34*
Do not treat drinking water, pp	--	-3.85±1.69*	-4.64±2.12*

Note: pp=percentage point.

[a] All monetary values have been adjusted to 2015 US$ according to steps outlined in Chapter 2.

[b] Impact estimates for stunting were taken from the second *Tubaramure* impact evaluation report (Leroy et al. 2017).

[c] Impact estimates for indicators other than stunting were taken from the first *Tubaramure* impact evaluation report (Leroy et al. 2014).

[d] The overall program impact is shown in this table. Further analyses revealed that the impact on mothers was limited to those who had given birth in the past 3 months. Effects were -29.0±17.2 in the T24 arm (P<0.05), -40.5±13.1 in the T18 arm (P<0.05), and -28.5±14.7 in the TNFP arm (P<0.05) (Leroy et al. 2016).

[e] A large number of knowledge indicators were collected. Only a subset of those that the program had a positive impact on are presented.

* Program impact significantly different from 0 (P<0.05).

-- No significant effect was found.

9. Summary

The two PM2A programs—*PROCOMIDA* in Guatemala and *Tubaramure* in Burundi—had three main program components: food distributions, which included both a household ration and an individual ration (food); a health, hygiene, and nutrition BCC strategy (care); and a strategy to strengthen health systems and promote the use of their services (health). In both programs, the food component of the program was systematically varied to test specific research questions, and clusters of beneficiaries were randomly assigned to receive one of the variations of the food component. Although the design of the food component varied within each program, the implementation of the care and health components were intended to be the same across the different treatment arms. For *PROCOMIDA*, the size of the family ration varied (i.e., full, reduced, or none) among those receiving CSB as the individual ration, and the type of individual ration or supplement varied (i.e., CSB, LNS, or MNP) among those receiving the FFR. For *Tubaramure*, the duration that beneficiaries were eligible for food rations varied: pregnancy to 24 months (T24), pregnancy to 18 months (T18), and birth of the child to 24 months (TNFP). The intention of testing these different variations of the food component was to determine the most effective, and cost-effective, PM2A program variations in Guatemala and Burundi.

In this cost study, we used the ABC-I method and collected detailed data on the allocation of labor and supplies over the course of program start-up, implementation, and closeout. Using the ABC-I method, program costs were allocated across different program activities. Activities for each year were designated as either start-up or post-start-up activities, and costs were also divided among different types of inputs (both recurrent and capital). Additionally, data on how costs were allocated to each of the treatment arms (i.e., five treatment arms for *PROCOMIDA* and three for *Tubaramure*) were used to calculate the hypothetical cost of each program if a single version of *PROCOMIDA* and a single version of *Tubaramur*e had been implemented throughout the program area. This information was then used to calculate the cost per beneficiary for each version of the program and compare how the returns to the program investments differed across treatment arms. The returns to each alternative program version were first presented as a cost-effectiveness ratio (e.g., the cost per beneficiary per percentage point reduction in stunting). Then, because PM2A was an integrated program with multiple objectives related to outcomes along various program pathways on different types of beneficiaries (i.e., children, mothers, and households), a single metric could not account for the range of program benefits. Therefore, we compared the overall scope of program impacts to account for multiple outcomes without a common metric. Herein we summarize these findings.

9.1 Summary of Activities

Program activities for each of the PM2A programs were divided into AB-CCs. Additionally, each of the AB-CCs was divided into sub-AB-CCs, which together were mutually exclusive and exhaustive of all program activities. The *PROCOMIDA* and *Tubaramure* programs had eight AB-CCs in common. The first two covered implementation of food ration distributions (excluding the costs of the food and supplements): (1) supplies and logistics for food distributions and (2) food commodities and supplement distribution. The sub-AB-CCs of AB-CC 1 included activities related to ordering, importing, storing, and transporting food commodities from their point of delivery to a central location for the program; this activity also included the monetization of commodities. Activities in AB-CC 2 were all the steps involved in getting food commodities from the centralized storage points into the hands of beneficiaries.

The second two AB-CCs covered the other two core program components: (3) BCC development and execution and (4) institutional strengthening of health services. Activities in AB-CC 3 included developing the BCC strategy and materials, delivering the BCC lessons, providing recipe demonstrations, and implementing demonstration gardens; for *Tubaramure* it also included the establishment of savings groups. The sub-AB-CCs in AB-CC 4 covered improving communication between local health facilities

and community members, training health workers, providing necessary equipment, and monitoring health service activities.

The remaining AB-CCs included the activities to support, monitor, and manage the first four. These were (5) monitoring and evaluation; (6) training and supervision of program staff; (7) advocacy, promotion, and social mobilization, which included local approvals to implement the program and perform the associated study, as well as conduct-related meetings and workshops; and (8) management, planning, and administration. *PROCOMIDA* also had an additional AB-CC: (9) systematic information management, which covered the development of database management systems to track information related to beneficiaries and commodities.

9.2 Distribution of Program Activity Costs

From 2009 to 2015, the total cost of implementing *PROCOMIDA* was US$27.7 million, and from 2009 to 2014, the total cost of implementing *Tubaramure* was US$23.6 million. These values did not include the additional costs of the donated food commodities and shipping them by freight to the port of entry, which were incurred directly by FFP.

The combined cost of distributing food rations and the supply and logistics of coordinating food commodities (AB-CCs 1 and 2) was the most costly aspect of program activities for both programs. Combined, these accounted for 30.0 percent of *PROCOMIDA*'s total costs and 44.0 percent of *Tubaramure*'s total costs. The next most costly activities were the development and execution of the BCC strategies (AB-CC 3), which accounted for 17.1 percent of *PROCOMIDA* and 12.9 percent of *Tubaramure* program activity costs; and management, planning, and administration activities (AB-CC 8), which accounted for 15.9 percent of *PROCOMIDA* and 18.8 percent of *Tubaramure* program activity costs. None of the other AB-CCs were more than 10 percent of total program activity costs.

Both of the programs relied heavily on human resources to design, implement, and monitor the different aspects of the programs. This is reflected in how input costs were distributed. For both programs, the largest share of inputs was attributable to personnel costs—49.8 percent for *PROCOMIDA* and 66.8 percent for *Tubaramure*. The second largest share of costs was for recurrent transportation costs, which were 12.5 percent of *PROCOMIDA* and 9.3 percent of *Tubaramure*. The activities that incurred substantial recurrent transportation costs included the transportation of food commodities and the transportation of program staff to implement and monitor program activities. In each program, capital costs were less than 10 percent of total costs, and recurrent costs accounted for the vast majority of costs.

9.3 Start-Up Costs

Using the ABC-I method, we were also able to identify the share of costs that was incurred by start-up activities. In the *PROCOMIDA* program, start-up costs were 17.3 percent of total costs. The *PROCOMIDA* AB-CCs that incurred a large share of start-up costs included food ration and supplement distribution, BCC development and execution, monitoring and evaluation, and systematic information management. In the *Tubaramure* program, 10.1 percent of costs were start-up costs, and the BCC development and execution and the management, planning, and administration AB-CCs incurred the largest share of start-up costs.

It is important to distinguish start-up costs to have an idea of what program activity costs would not be incurred again if the program were to continue operating over a longer period. Developing the BCC strategy and related materials accounted for the largest share of start-up costs, and *PROCOMIDA*'s databases for managing beneficiary enrollment information and commodity distributions incurred the next largest share of start-up costs. These investments could still be used by the programs if they continued delivering services in the same communities or expanded into nearby regions. Additionally, the programs incurred location-specific start-up costs, such as community coordination and designing transportation routes. These costs would not need to be incurred again if the program continued delivering services in

the same communities, though additional costs would be incurred if the program began implementing in new communities.

9.4 Costs per Treatment Arm and the Return to Program Investments

We also calculated the hypothetical cost of the program for each *PROCOMIDA* treatment arm if it had been implemented as the standard *PROCOMIDA* program and did the same for each treatment arm in *Tubaramure*. We then used this information to calculate the cost per beneficiary for each alternative treatment arm.

In the *PROCOMIDA* program, the combined cost per beneficiary of program activities and food rations was similar in the three versions of the program that delivered the FFR: US%1,081.18 for version A (FFR+CSB) (US$320.82 for food rations, US$760.36 for program activities), US$1,086.00 for version D (FFR+LNS) (US$328.23 for food rations, US$757.77 for program activities), and US$1,076.16 for version E (FFR+MNP) (US$319.14 for food rations, US$757.02 for program activities). The versions of the program with either a smaller family ration or NFR were less expensive: US$944.89 per beneficiary for version B (RFR+CSB) (US$215.57 for food rations, US$729.32 for program activities) and US$856.78 per beneficiary for version C (NFR+CSB) (US$69.05 for food rations, US$787.74 for program activities).

The cost per beneficiary per percentage point reduction in stunting was US$96.53 for version A (FFR+CSB) and US$160.62 for version E (FFR+MNP); versions B, C, and D did not significantly reduce stunting. Although version A of *PROCOMIDA* was the most cost-effective for reducing the prevalence of stunting, there were also potential negative program impacts found in this version related to maternal and child anemia and to maternal body mass index.

In addition to the positive program impacts on reducing the prevalence of stunting in versions A (FFR+CSB) and E (FFR+MNP) of the program, there were some positive impacts on other important outcomes across the treatment arms; however, the heaviest concentration of positive program impacts was in versions A (FFR+CSB) and E (FFR+MNP).

In the *Tubaramure* program, the combined costs of program activities and the food rations per beneficiary would have been most expensive in the T24 version of the program (US$765.63—US$314.06 for food rations, US$451.57 for program activities). The TNFP and T18 versions would have been US$710.79 (US$261.72 for food rations, US$449.07 for program activities) and US$675.91 (US$248.63 for food rations, US$427.27 for program activities) per beneficiary, respectively. Although T24 was the most expensive version of the program, it also demonstrated the most substantial returns for program investments. The cost per beneficiary per percentage point reduction in stunting was US$107.84 for T24 and US$129.98 for T18; TNFP did not significantly reduce stunting.

In the impact evaluation, all three versions of the program demonstrated a wide range of benefits for children, mothers, and households. Notably, the T24 treatment arm had a significant impact on child Hb levels, the number of language milestones achieved, maternal anemia, maternal dietary diversity, and severe household food insecurity. The T18 treatment arm had significant impacts on four of these five indicators—child Hb levels, the number of language milestones achieved, maternal dietary diversity, and severe household food insecurity—but not on the dietary diversity of mothers. The TNFP treatment arm only had impacts on two of these indicators—maternal dietary diversity and severe household food insecurity—and also had an impact on the number of motor milestones achieved.

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