Title II Food Security Program

PROMASA

Save the Children

MYAP 2006-2011

Endline Report

Jorge Matute, October 2011

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Executive Summary

Save the Children is a non-profit organization with no political or religious affiliations. It has been working in Guatemala since 1999, implementing health, education, and food- and nutrition-security programs aimed at achieving positive and lasting changes in the lives of vulnerable boys and girls.

It is a member and presides over the International Save the Children Alliance, a global network constituted by 28 organizations that implement programs in 110 countries around the world to ensure the welfare of 25 million girls and boys.

One of the programs being executed by Save the Children in Guatemala is the Maya Food Security Program (PROMASA), which is a Title II PL 480 Multi-Year Assistance Program (MYAP) funded by the United States Agency for International Development (USAID). This program responds to the objectives established by USAID's Food for Peace Office for Title II PL 480 programs, which is to reduce food insecurity in vulnerable populations and to respond to emergencies and natural disasters.

Within this framework, PROMASA undertakes activities that promote good practices in health and nutrition, livelihoods, natural resources, and risk management, and whose goal is to reduce food insecurity and chronic malnutrition in boys and girls from 0 to 3 years old in 123 communities within 6 municipalities of the Department of Quiché (San Gaspar Chajul, Santa María Cunén, San Juan Cotzal, Santa María Nebaj, Sacapulas, and San Miguel Uspantán), benefitting more than 11,600 families.

The Program, which started in 2006 and is set to end in 2011, has worked with local partners, among them, Cooperativa Todos Nebajenses (COTONEB), Génesis Empresarial, Kiej de los Bosques, and relevant municipalities. Other important partners that have contributed to implementing program activities include the Peace Corps, the School of Nutrition, and the School of Veterinary Medicine and Zootechnics at the Universidad de San Carlos. Coordination with government institutions such as SESAN, the Ministry of Agriculture, and the Ministry of Health has also been fundamental.

Since the program will soon end, a Final Evaluation was performed with two aims: To establish the reach of Program objectives and the extent to which they were achieved by measuring impact and process indicators– and to comply with donor requirements.

The process used to that end was a Statistical Sampling Survey, whose parameters are in line with FANTA II guidance and outlined in depth in its design document. The sample size is based on estimates of the chronic malnutrition rate (height [length] for age under two standard deviations) in children under 5 years old. This estimate was 1163 children living in 775 families, distributed in 31 communities (or clusters). A total of 807 interviews were performed, during which anthropometrical measurements of 1184 children were taken. The result of the sampling design determined a stratification that combined communities' geographical location and the Program's agricultural/livestock activity. In the 11 strata that were defined, a random sample was selected with selection probabilities proportional to size (PPS sampling) in 2 to 7 clusters or communities.

Data was gathered by means of an instrument agreed-on by the three organizations executing Title II programs in Guatemala: Catholic Relief Services (CRS), SHARE, and Save the Children. Quality was controlled both internally and externally during this phase. These controls helped to solve systematic errors during the interviews. It is also important to mention that a as a result of this accompaniment, translators were easily found whenever they were needed.

Except for the anthropometrical indicators from 1184 boys and girls, the rest of the health and nutrition and agricultural/livestock indicators were measured during the 807 interviews that were undertaken. Another exception is the commercial-activity indicators measured in a sub-sample of participants in that activity.

The data-processing and data-analysis phase started by entering all data into the computer, using a double-entry method and the EPI INFO software. In order to perform the statistical analysis, the EPI INFO CSAMPLE analysis model was used. This model contemplates a sampling design, stratification, and selection by clusters. Lastly, the weight that would be assigned to each observation was determined by means of its inverse probability selection, which assigns equal selection probability to all observations.

Following are the most relevant results of the evaluation:

A Comparative Table of Main Indicators
PROMASA, Save the Children
2007-2011

Area	Indicators	Baseline	Programmed GOAL LOA	Endline 2011
Anthropometry in children under 5 years old	Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age), WHO	78.2%	75.2%	70.3% (64.6, 76.0)
	Percentage of children under 5 years old with overall malnutrition (Z < -2SD weight/age), WHO	26.3%	20%	25.0% (21.0, 29.1)
	Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age), NCHS	71.6%	69%	63.0% (57.4, 68.5)
	Percentage of children under 5 years old with overall malnutrition (Z < -2SD weight/age), NCHS	34.2%	28%	30.5% (26.7, 34.2)
Family dietary diversity and family food scarcity	Average dietary diversity score	4.6 Food groups	6 Food groups	8.0 Food groups
Children's feeding practices	Percentage of infants under 6 months of age who were exclusively breastfed during the past 24 hours	65.6%	74%	80.1%
Danger signs in mothers', newborns', and children's health	Percentage of mothers and caregivers of children under 36 months of age who recognize at least two danger signs of childhood illnesses that indicate the need to seek health services	50.0%	75%	80.6%
Agricultural/livestock practices	Percentage of producers adopting at least two good agricultural practices	11.0%	30%	65.5%

This table shows the difference between the baseline indicator values and the values established for each indicator by the Final Evaluation of the Program. This difference determines the impact of the program. Examples of this are the 8.6% decrease in chronic malnutrition rates (length/height for age under less than two standard deviations) in children under five years old, according to the NCHS reference and the 7.9% decrease in those rates according to the WHO reference ($P<0.05$). The 3.7% decrease in overall malnutrition rates (weight for age under less than two standard deviations), according to the NCHS reference ($P<0.05$) is another such example. In addition to this, the table shows that proposed goals were achieved.

Another factor that must be underscored is the significant difference in the overall malnutrition rates among the population of boys and girls under 36 months old and the population of boys and girls from 36 to less than 60 months old ($P<0.05$). In this case, rates were higher in the older group (73.4%) versus the younger group (57.9%). These values correspond to estimates developed according to NCHS references, and it is worth noting that this difference remained the same when estimates according to WHO references were developed.

In regard to dietary diversity, results show that it surpassed the baseline value. From a consumption of an average of 4.6 food groups, the value increased to an average of 8.01 food groups. This exceeded the proposed goal of 6 groups ($P<0.05$). The food group most eaten by all families is cereals and the food group that is less eaten is fish and seafood (2.9%), as well as dairy products (29.5%). The average number of Months of Adequate Household Food Provisioning was 10.5 months, which is higher than the baseline value, but slightly underneath the goal of 11 months.

Another positive result is the improvement in exclusive breastfeeding practices, which showed a significant change ($P<0.05$) with respect to the baseline, changing from 65.6% to 80.1%. This result surpassed the established goal.

In regard to recognizing the danger signs in pregnant women, newborns, and children, results show that the percentage of women who acquired this knowledge amply exceeded the established goal.

At present, 84.5% of women recognize danger signs during pregnancy; 69.9% recognize danger signs in newborns, and 80.6% recognize danger signs in children. Among the women who mentioned recognizing some danger sign, either during pregnancy or in newborns and children, around 50% of them stated that they had experienced at least one sign during their pregnancy or with one of their children. The significance of this is that nearly all of them (over 95%) sought qualified personnel to help them (a hospital, a health center/post, or a private clinic).

Good agricultural and good livestock practices also improved. Results show that they are over the baseline and that they also surpassed established goals ($P<0.05$). 65.5% of producers stated that they had adopted at least two good agricultural practices and 81.3% of them stated that they have adopted good livestock practices. These results show a significant positive difference in malnutrition rates among the population receiving aid from the Program's agricultural and livestock components (significantly lower rates [$P<0.05$]) compared to the population who did not receive such aid.

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Glossary

COCODES	Spanish acronym for Community Development Councils
CRS	Catholic Relief Services
ENSMI	Spanish acronym for National Mother-Child Health Survey
FANTA	Food and Nutrition Technical Assistance
MoH	Ministry of Health
MYAP	Multi-Year Assistance Program
NCHS	National Center for Health Statistics
Odds Ratio	A statistical chance ratio that measures the connection between illness and exposure to a certain factor
WHO	World Health Organization
PPS sampling	Probability Proportional to Size Sampling
PVO	Private Voluntary Organization
SAM	Spanish acronym for Improved Food Security
SHARE	SHARE of Guatemala
USAID	United States Agency for International Development

I Introduction

The Maya Food Security Program (PROMASA), implemented by Save the Children in 123 communities within 6 municipalities located in Quiché, is now in its last year of execution. In order to establish the reach and the achievement of its goals, a Final Evaluation was performed, seeking to measure the impact and process indicators for Health and Nutrition, Livelihoods, Natural Resources, and Risk Management components.

The execution of these components helped to reduce food insecurity and chronic malnutrition in boys and girls from 0 to 3 years old in 123 communities located in 6 municipalities in the Department of Quiché (San Gaspar Chajul, Santa María Cunén, San Juan Cotzal, Santa María Nebaj, Sacapulas, and San Miguel Uspantán), benefitting more than 11,600 families.

This Final Evaluation has been performed in order to comply with one of the commitments of the FFP-A-00-07-00001-00 Agreement executed by Save the Children and the United States Agency for International Development (USAID), which establishes that a report verifying compliance with program indicators must be presented. To that end, Save the Children contracted the services of JMatute-CIENSA as an external consultant.

I.1 Contextual Framework[1]

Guatemala is presently facing significant challenges in order to attain its social and economic development. Illiteracy, malnutrition, and mother-child death rates are among the highest in Latin America, except for Haiti.

A civil war that lasted thirty-six years and a historical legacy of social, political, and economic exclusion of the indigenous population (41%) are factors that have resulted in the lack of health services, economic opportunities, and education among most rural inhabitants. These circumstances have hampered the country's development.

[1] Information provided by Save the Children Guatemala

Save the Children USA is a non-profit organization with no political or religious affiliations. It has been working in Guatemala since 1999, implementing health, education, food- and nutrition-security, and emergency-response programs aimed at achieving positive and lasting changes in the lives of vulnerable boys and girls.

At present, it is a member and presides over the International Save the Children Alliance, a global network constituted by 28 organizations that implement programs in 110 countries around the world to ensure the welfare of 25 million girls and boys.

One of the programs being executed by Save the Children in Guatemala is the Maya Food Security Program (PROMASA), which is a Multi-Year Assistance Program (MYAP) within the Title II PL 480 Program funded by the United States Agency for International Development (USAID). This program responds to the objectives established by USAID's Food for Peace Office for Title II PL 480 programs, which is to reduce food insecurity in vulnerable populations and to respond to emergencies and natural disasters.

Within this framework, PROMASA undertakes activities that promote good practices in health and nutrition, livelihoods, natural resources and risk management, and whose goal is to reduce food insecurity and chronic malnutrition in boys and girls from 0 to 3 years old in 123 communities within 6 municipalities of the Department of Quiché (San Gaspar Chajul, Santa María Cunén, San Juan Cotzal, Santa María Nebaj, Sacapulas, and San Miguel Uspantán), benefitting more than 11,600 families.

The Program, which started in 2006 and will end in 2011, has worked with local partners, among them, Cooperativa Todos Nebajenses (COTONEB), Génesis Empresarial, as well as the Ministry of Health and the Ministry of Agriculture, the Food and Nutritional Security Secretariat (SESAN), the President's Planning and Programming Secretariat (SEGEPLAN), and municipalities, among others.

I.2 Justification and Survey Objectives

In the Terms of Reference provided to the Consultant, the objectives that were sought with this evaluation or survey were defined as follows:

Objectives of the Evaluation

1. *To establish the reach and the achievement of Program's goals by measuring impact and process indicators for each of the components established for the Program*
2. *To describe program performance during its term of execution in terms of the results and objectives achieved in target groups.*
3. *To determine the effect that interventions and strategies have had on decreasing food insecurity.*
4. *To determine the effect of interventions in chronic and overall malnutrition in boys and girls under 5 years old.*
5. *To identify good Food and Nutrition Security practices, as opportunities and alternatives that can yield significant results in household income, health conditions and mother/child nutrition, natural-resource management, and food security that can be incorporated into the design of other programs to be implemented.*

I.3 MYAP Indicators

The MYAP initiative has established the following main indicators to measure its effects. They were measured by means of the instruments especially devised for that purpose.

Area	Indicators
Anthropometry in children under 5 years old	Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age), NCHS
	Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age), WHO
	Percentage of children under 5 years old with overall malnutrition (Z < -2SD weight/age), NCHS
	Percentage of children under 5 years old with overall malnutrition (Z < -2SD weight/age), WHO
Family dietary diversity and family food scarcity	Average dietary diversity score
	Average number of months of adequate household food provisioning
Children's feeding practices	Percentage of infants from 0 to <6 months who were exclusively breastfed during the past 24 hours.
Danger signs in mothers', newborns', and children's health	Percentage of women who recognize at least two danger signs during pregnancy
	Percentage of women who recognize at least two danger signs in newborns (under 28 days of birth)
	Percentage of women who recognize at least two danger signs indicating that a child needs treatment when he/she is sick.
Agricultural/ livestock practices	Percentage of producers adopting at least two good agricultural practices
	Percentage of producers adopting at least two good livestock practices
Improved income	Percentage of producers adopting at least two formal marketing practices

II Methodology

The survey was performed in five main stages:

1. Designing the survey
2. Updating and adapting instruments to gather information
3. Selecting and training field personnel
4. Executing field work and entering data into the computer
5. Analyzing information and writing the report

I. Designing the Survey

The size of the sample that was estimated for this survey was based on the following parameters, which are contained in the document on the survey design. The estimate was made according to FANTA II indications.

1) **Confidence Level**: It was set at 95% (Z = 1.96).
2) **P(1-P):** FANTA's recommendation to use P(1-P)=0.25 was adopted
3) **Effect of Sample Design**: the value suggested by FANTA was used: 2
4) **Error of Estimation**: Since the above values are constant within the equation, it is the error of estimation that ultimately conditioned the sample size. ***This value was set at 4% of error***.

Estimate on sample size for the target population; that is, children under 5 years old:

$$n = \frac{(Confidence\ Level)^2 \times P(1-P)}{(Error\ of\ Estimation)^2} \times Effect\ of\ Design$$

$$n = \frac{(1.96)^2 \times (0.5 \times (1-0.5))}{(0.04)^2} \times 2 = 1,163\ children\ under\ 5\ years\ old$$

According to baseline information, there were children under 5 years old in each one of the selected households. There was an average 1.5 children/household in these selected households. Thus, to find 1,163 children under 5 years old, 775 households had to be visited (1,163/1.5 = 775 households with children under 5 years old). **In the field, the number of households where information was gathered, which in this case are the same as surveyed families, was 809; that is, 34 above the programmed number,** as a result of the random-selection process performed in the field.

5) **Field Selection:** In order to find children under 5 years old in the communities, the following process was undertaken:

a. **Household selection**. 35 households were randomly selected per community was made using maps or sketches. This value is higher than the 25 households per community that were expected, in order to achieve the size of the estimated sample (25 is the size of the sample estimated per primary cluster). The reason for this is that it was not expected that all the households would include children under five years old. Therefore, the over sampling of 35 households is a result of an adjustment in the selection, considering the loss of households in which there were no children under five years old.

b. **Case Confirmation.** The first step when arriving at a selected household was to confirm that it met the inclusion criteria: That there was at least one child under 5 years old in the household. After confirming that there was, the next step was to establish if there was more than one family with children under 5 years old in the household. If there were two or more families in a household, one family was randomly selected. Once a family was selected, their informed consent to perform the survey was obtained.

Summary of estimated sample size:

- CHILDREN UNDER 5 YEARS OLD: 1,163 (a 4% error of estimation in chronic malnutrition)
  The number of children in the sample is conditioned by:
  - The baseline considers that there are 1.5 children under 5 years old per family
  - The selection of one family per household (a household is equal to a family)
  - The minimum number of families to obtain the sample is 1,163/1.5= 775
- HOUSEHOLDS: 775
  - The 775 households are distributed into 31 clusters (25 households/cluster)
  - 775 households, adjusted to accommodate possible losses, equals a total of 1,302 households
  - When dividing 1,302 households by the 31 clusters, the result is 1,302 / 31 = 42 household clusters, which is the number of households that must be selected and visited in each community. However, as previously mentioned, in practice, only 35 households –not 43– were selected, based on the experience of the consulting team. This number proved to be sufficient.

I.1 Sample Size (Sample Selection)

The Sample Design responds to the measurement of the impact indicator: Rate (percentage) of children with low length/height for age (chronic malnutrition defined by Z score: malnourished = Z < -2SD). A stratified sample design by clusters in three stages was used.

Stratification considered two characteristics in population clusters:

- The first one consisted of the geo-political division of the country into municipalities. The communities that were selected for this survey belong to six municipalities in the department of Quiché: Chajul, San Juan Cotzal, Nebaj, Uspantán, Cunén, and Sacapulas
- The second one considered the agricultural/livestock activity that the program implemented in certain communities. Thus, there are two divisions: With and without agricultural/livestock activity.

The conjunction between geo-political divisions and the presence of agricultural activity generates stratification. The following are the strata identified for Save the Children:

Table M1
Strata and Number of Primary Clusters to be Sampled

Save the Children*					
Stratum #	Municipality	Agricultural Activity	Total Population in Stratum	Number of Community Clusters to be Sampled	
				Proportional Distribution	Adjusted Distribution *
1	Sacapulas Quiché	YES	7,668	2	2
2		NO	7,769	3	2
3	Cunén Quiché	YES	16,369	5	4
4	Uspantán Quiché	YES	11,112	4	3
5		NO	1,745	1	2
6	Nebaj Quiché	YES	24,038	8	7
7		NO	651	0	1
8	San Juan Cotzal Quiché	YES	9,446	3	2
9		NO	1,182	0	2
10	Chajul Quiché	YES	14,744	5	4
11		NO	1,430	0	2
Total Population			96,154	31	

* Table taken from the document "Evaluation of Title II Food Security Program in Guatemala, MYAP 2006-2011. "Endline Sample Design".

Within each stratum, a sample of clusters was made in three stages, as follows:

- **First Selection Level: Communities**

  A community cluster is a group of the population living in the same sector, geopolitically defined and quite homogenous. Thus, community clusters refer to communities or human settlements such as: villages, *parajes* (isolated inhabited areas), *caseríos* (groups of houses), towns, cities, etc. These community clusters were selected through Probability Proportional to Size (PPS sampling). See the list of selected clusters below. *Community clusters are under the statistical concept of primary clusters.*

  PPS Sampling

  Sampling with Selection Probabilities Proportional to Size

  A random selection process is used for this methodology. It uses cluster population sizes to select samples, by means of a process that is similar to systematic sampling in which individuals from a population are selected (each individual in the cluster has the same probability of being selected, but this probability is different in the various clusters). Thus, communities with the most population are more likely to be selected.

- **Second Selection Level: Households**

  Within each selected community cluster, a random sampling of households was performed. ***The selection in this case took into account the only factor that was required to be part of the survey sample: That there are children under 5 years old in the household.***

- **Third Selection Level: Families**

  There were a few households (68) that included more than one family that met the previously-mentioned inclusion criteria. Therefore, one family was randomly selected. The term "family" includes the "nuclear family" composed of the father, the mother, and their children [2].

I.2 A List of Selected Community Clusters

Table M2 shows a list of selected clusters submitted to Save the Children in the design document. Based on this list, Save the Children's Monitoring and Evaluation personnel analyzed the feasibility of visiting the selected sites considering risks such as natural disasters (impassable access routes) and rejection from communities.

Thus, Save the Children, after having evaluated the risks, replaced some communities with substitutes.

[2] It is important to note that for the endline, information on a nuclear family unit was measured, while a slightly different unit was used for the baseline: a HOUSEHOLD (the latter includes the nuclear family as well as any other member of the household "who eats from the same pot").

Table M2
Selected and Visited Community Clusters

Dept.	Stratum	Municipality	Total Population in Stratum		Selected Cluster/ Community	Visited Communities
Quiché	1	Sacapulas	7,668	1	CHACAGUEX	YES
				2	TRAPICHITOS	YES
			Substitute Community	3	SALINAS MAGDALENA	NO
	2		7,769	4	PARRAXTUT	NO
				5	1er CENTRO DE RIO BLANCO	YES
			Substitute Community	6	PATULUP	YES
	3	Cunén	16,369	7	SAN ANTONIO	YES
				8	CHIUL	YES
				9	BATZULA	YES
				10	LA HACIENDA	YES
			Substitute Community	11	MEDIA LUNA	NO
	4	Uspantán	11,112	12	EL PINAL	YES
				13	TIERRA BLANCA PERICÓN	YES
				14	EL PALMAR	YES
			Substitute Community	15	EL CARACOL	YES
	5		1,745	16	JACUBI	YES
				17	QUIZACHAL	NO
			Substitute Community	18	SICACHE	NO
	6	Nebaj	24,038	19	XEXUXCAP	YES
				20	SALQUIL GRANDE	YES
				21	PALOP	YES
				22	VILLALÁ	YES
				23	RÍO AZUL	YES
				24	ACTXUMBAL	YES
				25	PULAY	YES
			Substitute Community	26	VICALAMÁ	YES
	7		651	27	LAS VIOLETAS	NO
			Substitute Community	28	NONE	
	8	San Juan Cotzal	9,446	29	SANTA AVELINA	YES
				30	EL PINAL	YES
			Substitute Community	31	BICHIBALÁ	YES
	9		1,182	32	TIXELAP	NO
				33	PAMAXÁN	YES
			Substitute Community	34	NONE	
	10	Chajul	14,744	35	SANTA CLARA	YES
				36	XEMAC	YES
				37	ILOM	YES

Dept.	Stratum	Municipality	Total Population in Stratum	Selected Cluster/ Community		Visited Communities
				38	XOLUCAY	YES
			Substitute Community	39	JUIL	NO
	11		1,430	40	SOTZIL	YES
				41	CHONCHOLA	YES
			Substitute Community	42	NONE	

The original design document is attached to this report.

II. Updating and Adapting Instruments to Gather Information

Because the MYAP is a program executed by three organizations, –Save the Children, CRS, and SHARE– the instruments to gather information for the baseline and the endline evaluation measurements were developed jointly by the three organizations, which defined the instruments to gather information from the onset.

Therefore, the instruments to gather the information required to estimate indicators had already been validated and amply tested by said organizations for the baseline study. However, as a result of each institution's executing the program, and before the endline was executed, technical personnel from these institutions met to review the baseline instruments. With the experience gained in executing the program, they made changes in the instruments whenever they considered it pertinent. Changes, though, were very few and relatively insignificant with respect to the original structure of the instruments.

Therefore, the Consultant already had an information-gathering instrument with questions that had been validated and tested by the three institutions, so there was no need to validate the instrument.

In order to streamline the data-gathering and data-entry processes, the Consultant divided the original instrument into several sections or forms, without altering the original questions. This allowed for increased efficiency in gathering data and entering it into the computer.
The following instruments, attached as annexes, were used:

1. *Form 1 Cover Sheet (filter).docx* *(one page)*
2. *Form 2 Family Structure (FORM A).docx* *(one page)*

3. *Form 3 Health 0-60 (FORM B).docx (0 to <60 months) (six pages)*
4. *Form 4 Health 0-6 (FORM C).docx (0 to <6 months) (two pages)*
5. *Form 5 Health 6-24 (FORM D).docx (6 to <24 months) (two pages)*
6. *Form 6 SHAVE Production (FORM E).docx (six pages)*
7. *Form 7 Marketing Cover Sheet (filter-M).docx (one page)*
8. *Form 8 Marketing Family Structure (FORM F).docx (one page)*
9. *Form 9 Marketing (FORM G).docx (three pages)*
10. *Form 10 Anthropometry (FORM antropometry).docx (one page)*
11. *Form 11a Risk Management (FORM H1).docx (Situation Room) (three pages)*

In the Annex "First Progress Report: Training" instruments are further detailed.

III. Selecting and Training Field Personnel

When field surveys are performed, it is important to consider the elements that directly affect the quality of the information being gathered and which will subsequently condition results. Among these aspects is selecting and training personnel, as well as the training and standardization activities required to accomplish this.

III.1 Selecting and Integrating Field Personnel

Field personnel, totaling 21 individuals divided into three work groups, was recruited in accordance with the following basic characteristics: That they have a secondary-school diploma, previous experience, time availability according to the work chronogram that was developed at the onset, a positive attitude toward the activities involved in a quantitative survey such as this one.

In order to constitute surveyor work groups, efforts were made to include at least one member of the group who spoke one of the Mayan languages spoken in the geographical areas that would be surveyed. Thus, there was someone who spoke the local language in every group.

The method used to document interviewees' responses in the field was filling out printed instruments. Consequently, in each of the three groups of surveyors there was an individual whom we identified as

the "editor". The role of the editor was to ensure that the instruments were correctly filled out, and to verify that all the relevant forms were available.

III.2 Training and Standardization

The group of surveyors was trained by means of a five-day workshop (August 8-12, 2011). Generally, in similar consultancies, the Consultant is responsible for training and standardization. In this case, however, both SHARE and Save the Children directly participated in training personnel, and they substituted their role as observers (generally the case) to an executing role.

In practice, interview or "face-to-face" techniques and dynamics were used to fill out the instruments, since this is the methodology used in the field.

The training workshop was structured according to three important sections:

- First portion: Presenting each one of the Programs and reviewing topics pertaining to the indicators being measured. This was undertaken by SHARE and Save the Children technical personnel.
- Second portion: Learning about, handling and filling out data-gathering instruments, aimed at acquainting surveyors with the order and sequence of questions and the correct way to record information (coding gathered information). SHARE and Save the Children were in charge of this activity.
- Third portion: Executing practical exercises and standardizing the way in which anthropometrical measurements are taken. Technical aspects on face-to-face interviews were addressed (in pairs and systematized) and the corresponding practical exercises were performed. There were two main purposes for this stage:
  a) To introduce personnel to the process of applying data-gathering instruments
  b) To evaluate how much each workshop participant knew about handling the instruments adequately. It was possible to determine trainees' knowledge on this subject and thus made it easier to provide timely and immediate feedback on how to apply each data-gathering instrument correctly.

Three exercises to standardize weight and length/height were performed with boys and girls under five years old[3], with the purpose of ensuring that adequate standardized personnel will be available to take and record these anthropometrical measurements. During these exercises, "Salter" hanging scales, with a 25-kilogram capacity and 100-gram sensitivity, were used, since they are the ones being used in this field phase, as well as height rods that allow measuring children while standing or lying down. Measurement standardization was evaluated by means of the Habicht[4] method.

During the last two days of the workshop the basic survey terms in Mayan languages (K´iche, Ixil, Mam, K'aqchikel) were standardized. All gathering instruments were applied in those languages, using a systematized interview to achieve a standardization level similar to the one shown during the application of the Spanish instruments.

IV. Executing Field Work

At the end of the training workshop, field logistics were reviewed and defined according to survey requirements and field schedules or work routes were developed in accordance with selected communities.

IV. 1 Field Phase

Field activities were executed according to the schedule established in the training and logistics phase.

a. Presenting the Survey and Requesting Cooperation from the Community

Before starting to gather information in each community, personnel in each work team sought the support from local authorities and/or local leaders, COCODES members and assistant mayors, as well as Save the Children's technical personnel and volunteers. These individuals provided their support as facilitators during the field phase to provide guidance within the community, to locate households, translate, and/ or contact translators.

[3] This practice was performed with the assistance of the Comprehensive Care Center Program, which allowed our personnel to come to their center located in Zone 13. (See Annex 5, a copy of the letter requesting their cooperation.)

[4] This standardization was aimed at determining surveyors' level of precision and accuracy when weighing and measuring boys and girls under five years old.

b. Managing the Survey Team

The team started their field work on August 20 in Quiché. Information was gathered in communities within the Chajul, San Juan Cotzal, and Nebaj municipalities before the teams recessed on August 25. Data-gathering for the survey was accomplished simultaneously by three field-surveyor groups (Groups 1, 2, and 3), and thus, were able to visit three communities per day.

After their recess, the teams started their field and data-gathering activities in the Nebaj, Quiché municipality on August 30. Information on communities in the Uspantán, Cunén, and Sacapulas municipalities was gathered. Field work was performed in the Primer Centro de Río Blanco, Uspantán, and Quiché.

c. Linguistic Issues

An essential factor to assigning personnel to their work area was to gain previous knowledge of the geographical areas and the language spoken there. As previously mentioned, it was determined that at least one surveyor in each work group should speak one of the four main languages spoken in the area being surveyed. In so doing, it was guaranteed that at least one surveyor who could speak the local language was part of each work group. However, in some cases, translators had to be hired, since the surveyor speaking the local language was not able to handle so much work. It is important to mention that before seeking and hiring translators, and to establish if they were needed, local authorities were asked their opinion on the linguistic preferences of those mothers being surveyed.

Save the Children's technical team provided their support to contact the translators according to established needs. The persons hired to translate were people living in the community, community facilitators, mother leaders, agricultural/livestock leaders, COSAN members and, in some cased, members of Save the Children's technical team. They were all provided with a brief introduction to the instruments that were being used, so that they became acquainted with them and understood them.

The methodology used by teams in each household was to introduce themselves and to ask what language the interviewee spoke. Subsequently, she was given the chance to choose what language she preferred to be interviewed in. The supervisor for each group was in charge of assigning translators, and paid special attention to their needs. He/she accompanied his/her group at all times during field work.

c. Managing Information in the Field

The first step in each community was to select the households that would be surveyed, according to the total number of households in the community and the 35-household sample size that had been defined. Samples for each community were obtained through systematic random sampling, based of sampling frames (diagram). Once surveyors and anthropometric specialists were established in selected communities, the supervisor located them in the assigned households according to the selected sample.

In the field, all the information was gathered through home visits. Each interview lasted between forty-five minutes and one hour and a half. This included the presentation, the instruments that would be used (which depended on the number of children in the household and their ages), as well as the need to use a translator in the household.

In most communities, local personnel provided support. They provided guidance and accompaniment, significantly contributing to making work more effective.

IV.2 Quality Control in the Field

IV.2.1 Internal Quality Control

During the whole phase of field work several quality-control mechanisms were applied. Among them, the following should be underscored:

a. The direct supervision in the households where surveys were made, by means of a random sample among selected households, generated by the supervisor as the work was progressing.
b. Thoroughly reviewing each one of the filled-out forms (edition), which was an activity performed by group editors and done while still in the communities.

IV.2.1 External Quality Control

During the whole field-work phase, Save the Children personnel accompanied the three groups of surveyors. Accompanying Save the Children personnel included: Monitoring and Evaluation Coordinator, Norberto Enríquez; Health Coordinator, Viviana Rendón; Agricultural Coordinator, Héctor Lara, as well as community volunteers (mother leaders, agricultural/livestock leaders, COSAN members).

They supervised the work and contributed to improving the performance of groups by providing feedback when they noted that there was a mistake in the field work being performed.

IV.3 Products

IV.3.1. Health and Nutrition, and Livelihood Components

The total products corresponding to the surveys in each community are presented included in the Table in Annex 2, according to the order in which communities were visited.

It is important to mention that during the dates in which field work was being undertaken, there were several events within and outside the communities that sometimes limited information-gathering actions, such as political rallies, religious activities (activities before and during the Day of Our Lady of the Assumption, and other community religious events), Independence Day, activities related to the social program "Mi Familia Progresa", among other social events. These events kept mothers outside their homes during most of the day and thus limited the number of effective interviews and delayed anthropometric measurements.

It is also important to mention that there were frequent constraints to gather survey information in peri-urban communities, as interviewees were not usually in their homes and there were a considerable number of rejections to the survey.

IV.3.2. Marketing and Commercialization Component

Information gathering corresponding to the Marketing and Commercialization component was random in selected communities identified by Save the Children as those in which this component was developed. Because it was agreed with FANTA and the three PVOs that the indicators for this component would only be measured among participants, individual interviewees were not selected randomly, but rather all the participants in the Marketing and Commercialization component in the community were summoned. Participants were coordinated and summoned by Save the Children through its technical team.

All the products from the surveys in each selected community are included in Annex 3, in accordance with the order in which communities were visited during the field-work phase.

The communities sampled for this component were three, and a total 43 surveys were performed.

IV.3.3. Risk Management and Sentinel Sites

Form H1-Sentinel Sites was applied to selected communities where this activity is being implemented. The field supervisor for each group was responsible for coordinating and summoning participants in this component, supported by Save the Children's technical team. This activity took place in the facilities established by community leaders to that end (Sentinel Sites). Information on community activities and their organization and planning was reviewed, as well as the materials they have and the training activities in which they have participated. The communities where information on this component was gathered are mentioned in Annex 3.

Each group's field supervisor was in charge of completing this form, with support from community leaders.

The progress report on the field work performed is attached in an Annex.

V Analyzing Data and Writing the Report

The information gathered in the field was entered into the computer by means of the EPI INFO software, DOS 6.04d. Data contained in each of the forms or instruments were entered using a double entry method. Each entry was performed by a different typist. As part of the quality-control mechanisms for data entry, EPI INFO has a CHECK module that was activated and that allowed detecting errors such as mistaken "skips" in variables, extreme or invalid values (for example, there are only two codes for sex: 1=male and 2=female, any other value cannot be entered into the software program).

After both entries have been completed independently, data were checked by a process known as validation (using the software module: VALIDATE). Discrepancies between files or errors in them were identified, and they were corrected in both entry files (first and second). Once files were corrected, they were validated again, and if there were new inconsistencies, they were again identified and corrected. This process was repeated as much as necessary, until identical files were achieved (no inconsistencies or errors).

Anthropometric values were estimated by means of the EPI INFO EPINUT module, which provides Z-scores according to NCHS references. Z-Scores were also estimated using WHO references, by means of the WHO ANTHRO software, version 3.2.2. It is important to mention that when the information in both

software programs was processed, very extreme cases or "outliers" were eliminated. ANTHRO eliminates the values estimated for these children, and in the case of NCHS, they were eliminated manually by the Consultant, by means of programs developed for that purpose. These programs do not eliminate the cases, themselves; rather, they eliminate extreme values, so that a child with an extreme value in height might still keep his/her information for weight/age, but not for height/age. This results in unequal sample sizes among the same anthropometric indicators, and additional differences among the same indicators measured by different software programs, due to the difference in the references on which they are based.

When errors had been eliminated from the databases, programs were created to develop indicators (see annexes on databases for these programs, which have a PGM extension and can be accessed through WORD). EPI INFO CSAMPLE module was used for the statistical analysis. It estimates percentages, averages, and variability measurements (including confidence intervals) taking into account the sample design. Three variables were considered in this case: STRATUM, CLUSTER, and WEIGHTING.

The strata are the ones defined in the design document, so that each survey can be easily located within the corresponding stratum. Similarly, the CLUSTER corresponds to the *primary or community cluster,* in other words, the community. WEIGHTING was estimated taking into account selection probability (in the same way in which the baseline was estimated):

Weighting = 1 / selection probability

In which:

Selection Probability = Prob. Selecting community X Prob. Selecting household within community

To develop this report, a draft was submitted to SHARE and Save the Children personnel with its format which mainly identified the tables containing the indicators that would be reported.

III Results

This section contains the results yielded by this survey for each one of the program indicators. This information is presented by means of tables[5] and graphs. Tables contain information for the total population as well as disaggregated information on the population from communities where there was/was not an agricultural/livestock program intervention.

Tables present the values established for the sample (percentages or averages) and the values for the population (at a 95% confidence interval), as well as the size sample used to estimate each indicator and the number of subjects in the sample that conform to the indicator. It is important to note that, because the statistical analysis was performed taking into account the sampling design (stratified by clusters), it was necessary to weight each observation with its inverse selection probability. Thus the percentages that are presented do not respond to a mere division of cases or subjects that conform to the indicator and the sample size. For example: *61.1% from a sample size of 911 children under five years old has been reported for the indicator "Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age) for the population with an agricultural/livestock intervention" (under less than two standard deviations). When dividing 541 by 911 the result is 59.4%, which is not the same as 61.1%. The difference, as previously mentioned, is due to the 61.1% value having been estimated by taking into account the sample design, while the 59.4% value was estimated not taking the design into account, and thus, it is a skewed value (by analysis).*

Results are presented in four different sections within this document:

III.A MYAP Indicators. This section contains a table summarizing the results of the main Program indicators, the values that contrast with goals, and the values obtained for the baseline.

III.B 2011 Results. The detailed indicator results, both for the total population and for the disaggregation: Population in which there was/was not an agricultural/livestock intervention. Additionally, the main findings are included at the end of each table (a discussion of the results).

III.C Effects of the Design. This section corresponds to one of the Annexes and it contains the effects of the sample design on each one of the eleven main indicators.

III.D 2011 Results by Municipality. This section corresponds to the disaggregation of indicators by municipality. This section IS NOT PRESENTED as part of this report, but rather as an attached document containing analysis output with EPI INFO. This disaggregation was requested by Save the Children, which will use it with programmatic purposes.

[5] Containing indicators pertaining to the same topic

III.A MYAP Indicators

Table III.A.1 MYAP Indicators and Their Goals

Area	Indicators	Baseline	Programmed GOAL LOA	Endline 2011
Anthropometry in children under 5 years old	Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age), NCHS	71.6%	69%	63.0% (57.4, 68.5)
	Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age), WHO	78.2%	75.2%	70.3% (64.6, 76.0)
	Percentage of children under 5 years old with overall malnutrition (Z < -2SD weight/age), NCHS	34.2%	28%	30.5% (26.7, 34.2)
	Percentage of children under 5 years old with overall malnutrition (Z < -2SD weight/age), WHO	26.3%	20%	25.0% (21.0, 29.1)
Family dietary diversity and family food scarcity	Average dietary diversity score	4.6 Food groups	6 Food groups	8.0 Food groups (7.76, 8.26)
	Average number of months of adequate household food provisioning	9.1 months	11 months	10.49 months (10.30, 10.69)
Children's feeding practices	Percentage of infants under 6 months of age who were exclusively breastfed during the past 24 hours	65.6%	74%	80.1% (73.4, 86.8)
Danger signs in mothers', newborns', and children's health	Percentage of mothers of children under 36 months of age who recognize at least two danger signs during pregnancy that indicate the need to seek health services	30.0%	50%	84.5% (78.1, 91.0)
	Percentage of mothers of children under 36 months of age who recognize at least two danger signs in newborns (<28 days) that indicate the need to seek health services	26.0%	41%	69.9% (64.3, 75.4)
	Percentage of mothers and caregivers of children under 36 months of age who recognize at least two danger signs of childhood illnesses that indicate the need to seek health services	50.0%	75%	80.6% (76.0, 85.3)
Agricultural/ livestock practices	Percentage of producers adopting at least two good agricultural practices	11.0%	30%	65.5% (57.9, 73.1)
	Percentage of producers adopting at least two good livestock practices	12.0%	30%	81.3% (72.2, 90.4)
Improved income	Percentage of producers adopting at least two formal marketing practices	15.4%	30%	99.2% (98.5, 99.9) Not comparable to Baseline

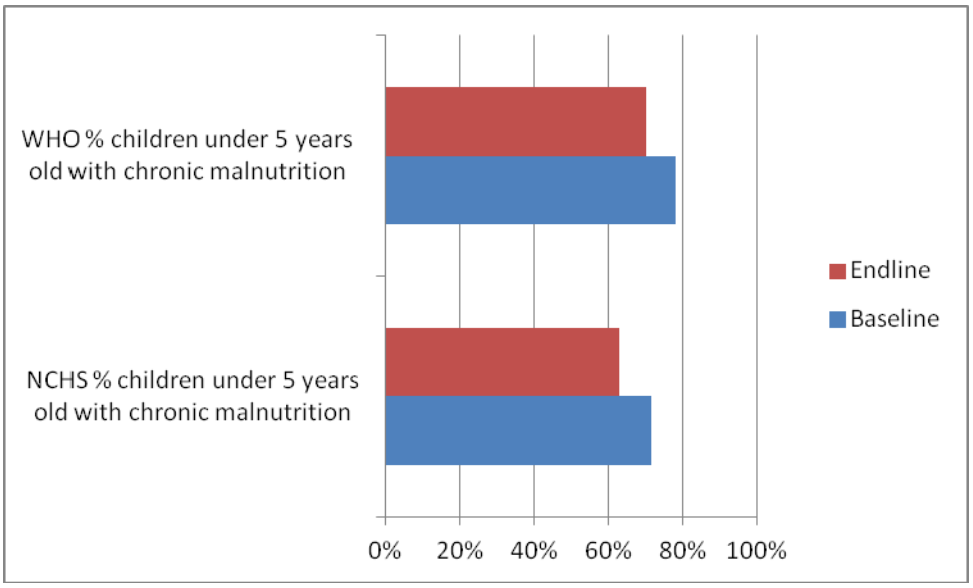
III.A.1 MYAP Indicators and Their Goals

Main Findings:

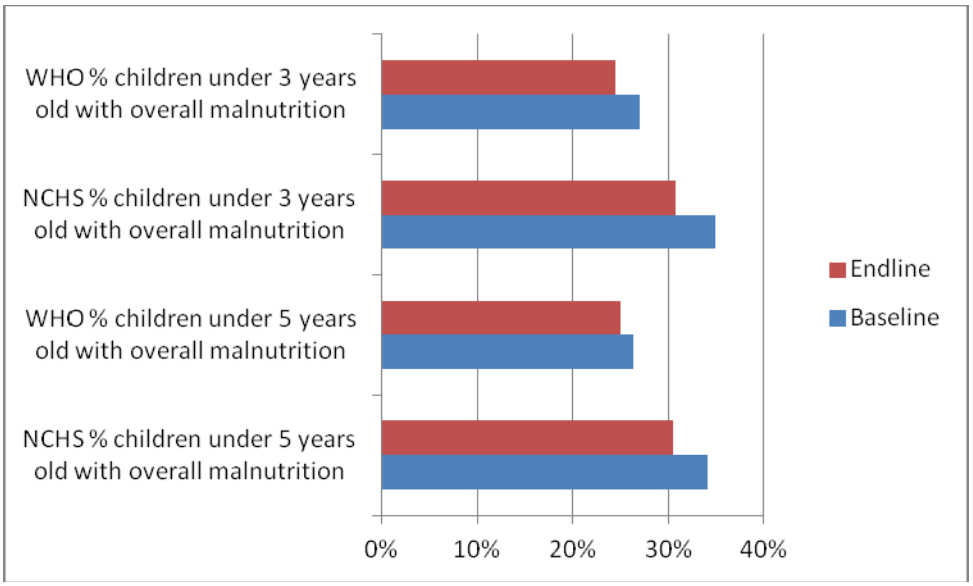
Table III.A.1 shows that populations in which Save the Children is implementing PROMASA show positive signs in indicators as compared to those prevalent before starting the program, as they show improvement.

Chronic malnutrition rates (height for age under less than two standard deviations) in children under five years old decreased by 8.6% according to the NCHS reference and by 7.9% according to the WHO reference ($P<0.05$). So did overall malnutrition rates (weight for age under less than two standard deviations), which decreased by 3.7% according to the NCHS reference ($P<0.05$). In this sense, results also show that established goals to decrease chronic and overall malnutrition were achieved.

Graph II.A.1: Chronic Malnutrition (Height for Age) in Children under 5 Years Old



Graph III.A.2: Overall Malnutrition (Weight for Age) in Children under 3 Years Old and Children under 5 Years Old



In regard to dietary diversity, results show that it surpassed the baseline value, increasing average consumption from 4.6 to 8 food groups. This result surpassed the 6-group established goal ($P<0.05$).

The average number of Months of Adequate Household Food Provisioning was 10.5 months, which is higher than the baseline value, but slightly underneath the goal of 11 months.

In general, knowledge on the danger signs in pregnant women, newborns, and children has exceeded baseline values and the goals established ($P<0.05$). Results show that the percentage of women who learned about danger signs easily doubled when compared to baseline values. Thus, there are now 84.5% of women who recognize danger signs during pregnancy; 69.9% who recognize danger signs in newborns, and 80.6% who recognize danger signs during childhood.

Good agricultural and livestock practices also improved compared to the baseline and they also surpassed established goals ($P<0.05$). Now, there are 65.5% of producers using good agricultural practices and 81.3% of producers using good livestock practices. These results appear to be the reason for the significant difference in malnutrition rates among the population participating in the Program's agricultural/livestock intervention, which show significantly lower rates ($P<0.05$), compared to those of the population in which there was no intervention.

In regard to adopting at least two formal marketing practices, results show that at the baseline, 15.4% of producers engaged in these practices and, thus, a 30% goal was established. Because Save the Children implemented this activity with a limited group of producers, it was considered that the impact on the whole population would be minor and that, therefore, the indicator would not show program efforts and achievements with participants. Thus, the sample for this indicator is a sub-sample of the overall survey sample[6], which is still representative due to the random selection of communities. In this case, there is a sample of 49 participants, which shows that the program has caused 99.2% of them to adopt at least two formal-marketing practices, and that this percentage among total participants is not below 98.5% (this value corresponds to the lower limit of the **confidence interval** for this indicator).

Confidence interval

The value found for the indicator (% or average) is included in the tables, and underneath, its confidence interval is shown. This interval corresponds to the lower and higher limits estimated with a 95% confidence level and they show the range of values in which the population value is located.

[6] In their July 2011 meeting, FANTA and the three PVOs –SHARE, Save the Children, and CRS– agreed that this indicator would be measured by means of a sub-sample of participants and not a population sample, as the rest of the indicators were measured.

III.B 2011 Results.

III.B.1 Anthropometry in Children under 5 Years Old

A sample of 1,184 children under five years old was used. Because some of them presented extreme values in their weight and/or length-height for age and/or weight for length-height measurements, these girls and boys are identified as extreme-value cases ("outliers") and software programs identify them with a variable (flag), and in the particular case of the ANTHRO software, it eliminates the values. Thus, the total sample size is not 1,184 boys and girls; it is smaller, depending on whether a child had an extreme value or not. Consequently, there are different-size samples for the various indicators.

Table III.B.1 Anthropometry in Children under 5 Years Old		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
Anthropometry according to NCHS References							
1a	Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age)	911 (541)	61.1% (54.8, 67.4)	260 (188)	77.5% (72.4, 82.6)	1,171 (729)	63.0% (57.4, 68.5)
1a1	Average height/age Z-score in children under 5 years old	911	-2.20 SD (-2.33, -2.56)	260	-2.56 SD (-2.69, -2.43)	1,171	-2.24 SD (-2.37, -2.11)
2a	Percentage of children under 5 years old with overall malnutrition (Z < -2SD weight/age)	917 (275)	28.9% (24.8, 33.1)	263 (103)	42.7% (41.6, 43.8)	1,180 (378)	30.5% (26.7, 34.2)
2a1	Average weight/age Z-score in children under 5 years old	917	-1.42 SD (-1.53, -1.31)	263	-1.77 SD (-1.89, -1.64)	1,180	-1.46 SD (-1.57, -1.64)
3a	Percentage of children under 5 years old with acute malnutrition (Z < -2SD weight/height)	911 (39)	3.9% (1.3, 6.5)	261 (2)	0.3% (0.6, 0.2)	1,172 (41)	3.5% (1.2, 4.8)
3a1	Average weight/height Z-score in children under 5 years	911	-0.04 SD	261	-0.21 SD	1,172	-0.06 SD

Table III.B.1 Anthropometry in Children under 5 Years Old		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
	old		(-0.16, 0.08)		(-0.27, -0.15)		(-0.17, 0.05)
Anthropometry according to WHO References							
1b	Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age)	919 (616)	68.6% (64.6, 76.0)	263 (206)	84.0% (82.3, 85.7)	1,182 (822)	70.3% (64.6, 76.0)
1b1	Average height/age Z-score in children under 5 years old	919	-2.46 SD (-2.61, -2.31)	263	-2.84 SD (-2.98, -2.69)	1,182	-2.50 SD (-2.65, -2.36)
2b	Percentage of children under 5 years old with overall malnutrition (Z < -2SD weight/age)	919 (228)	23.5% (19.1, 28.0)	263 (83)	36.9% (35.4, 38.4)	1,182 (311)	25.0% (21.0, 29.1)
2b1	Average weight/age Z-score in children under 5 years old	919	-1.29 SD (-1.41, -1.17)	263	-1.67 SD (-1.82, -1.53)	1,182	-1.33 SD (-1.45, -1.21)
3b	Percentage of children under 5 years old with acute malnutrition (Z < -2SD weight/height)	916 (46)	5.0% (2.5, 7.5)	263 (3)	1.6% (0.0, 5.3)	1,179 (49)	4.7% (2.5, 6.9)
3b1	Average weight/height Z-score in children under 5 years old	916	0.21 SD (0.07, 0.35)	263	-0.01SD (-0.09, 0.08)	1,179	0.19 SD (0.06, 0.31)

Table III.B.2 Anthropometry in Children under 5 years old by Age Group		Results			
Indicator		0 a < 36 Months		36 Months a < 60 Months	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
Anthropometry according to NCHS References					
1a	Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age)	784 (445)	57.9% (52.1, 63.7)	387 (284)	73.4% (66.7, 80.1)
1a1	Average height/age Z-score in children under 5 years old	784	-2.10 SD (-2.24, -1.96)	387	-2.52 SD (-2.66, -2.34)
2a	Percentage of children under 5 years old with overall malnutrition (Z < -2SD weight/age)	793 (247)	30.8% (26.4, 35.3)	387 (131)	29.7% (21.9, 37.4)
2a1	Average weight/age Z-score in children under 5 years old	793	-1.39 SD (-1.53, -1.25)	387	-1.61 SD (-1.75, -1.47)
3a	Percentage of children under 5 years old with acute malnutrition (Z < -2SD weight/height)	786 (16)	2.3% (0.8, 3.8)	386 (25)	6.0% (1.5, 10.6)
3a1	Average weight/height Z-score in children under 5 years old	786	-0.02 SD (-0.15, 0.10)	386	-0.14 SD (-0.30, 0.03)
Anthropometry according to WHO References					
1b	Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age)	795 (520)	66.6% (60.8, 72.5)	387 (302)	78.1% (70.7, 72.5)
1b1	Average height/age Z-score in children under 5 years old	795	-2.43 SD (-2.59, -2.27)	387	-2.65 SD (-2.79, -2.51)
2b	Percentage of children under 5 years old with overall malnutrition (Z < -2SD weight/age)	795 (196)	24.5% (21.0, 27.9)	387 (115)	26.2% (18.1, 34.3)
2b1	Average weight/age Z-score in children under 5 years old	795	-1.25 SD (-1.40, -1.11)	387	-1.49 SD (-1.65, -1.33)
3b	Percentage of children under 5 years old with acute malnutrition (Z < -2SD weight/height)	792 (22)	3.8% (2.2, 5.3)	387 (27)	6.6% (1.6, 11.5)
3b1	Average weight/height Z-score in children under 5 years old	792	0.20 SD	387	0.16 SD

			(0.05, 0.35)		(-0.06, 0.37)

Table III.B.3 Anthropometry in Children Under 5 Years Old by Sex		Results			
Indicator		Boys		Girls	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
Anthropometry according to NCHS References					
1a	Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age)	600 (362)	61.2% (54.7, 67.7)	571 (367)	64.9% (57.7, 72.1)
1a1	Average height/age Z-score in children under 5 years old	600	-2.20 SD (-2.34, -2.05)	571	-2.28 SD (-2.45, -2.12)
2a	Percentage of children under 5 years old with overall malnutrition (Z < -2SD weight/age)	604 (176)	27.0% (22.6, 31.5)	576 (202)	34.1% (29.7, 38.5)
2a1	Average weight/age Z-score in children under 5 years old	604	-1.42 SD (-1.56, -1.28)	576	-1.50 SD (-1.62, -1.37)
3a	Percentage of children under 5 years old with acute malnutrition (Z < -2SD weight/height)	602 (20)	3.1% (1.0, 5.1)	570 (21)	4.0% (0.8, 7.1)
3a1	Average weight/height Z-score in children under 5 years old	602	-0.09 SD (-0.2, 0.03)	570	-0.03 SD (-0.18, 0.12)
Anthropometry according to WHO References					
1b	Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age)	606 (424)	70.3% (63.4, 77.4)	576 (398)	70.4% (634, 77.4)
1b1	Average height/age Z-score in children under 5 years old	606	-2.50 SD (-2.66, -2.34)	576	-2.50 SD (-2.68, -2.32)
2b	Percentage of children under 5 years old with overall malnutrition (Z < -2SD weight/age)	606 (159)	24.7% (20.4, 29.0)	576 (152)	25.4% (20.1, 30.7)
2b1	Average weight/age Z-score in children under 5 years old	606	-1.31 SD (-1.45, -1.17)	576	-1.36 SD (-1.49, -1.22)
3b	Percentage of children under 5 years old with acute malnutrition (Z < -2SD weight/height)	605 (24)	4.4% (2.1, 6.7)	574 (25)	5.0% (1.8, 8.1)
3b1	Average weight/height Z-score in children under 5 years old	605	0.19 SD	574	0.17 SD

			(0.03, 0.36)		(0.02, 0.33)

III.B.1 Anthropometry in Children under 5 Years Old

Main Findings:

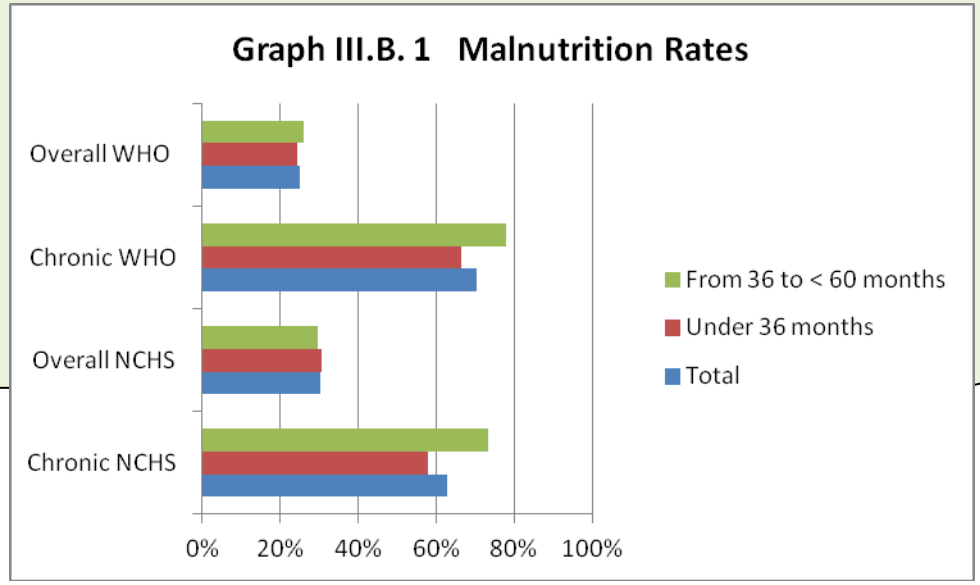
According to NCHS references (Table III.B.1), these results show that chronic malnutrition rates (length/height for age) are 16.4% lower in boys and girls under five years old in the population with agricultural/livestock interventions versus the population without these interventions (77.5% versus 61.1% respectively, $P < 0.05$). A child under five years old who lives in a community where there is an agricultural/livestock intervention has 2.2 times less probability (odds ratio) of being malnourished than a child who lives in a community without these interventions. There are similar results for overall malnutrition (weight for age), in which the difference between both groups is 13.8% ($P < 0.05$), and the probability of NOT being malnourished is 1.8 times (odds ratio) when living in communities with agricultural/livestock interventions. Nevertheless, it is interesting to note that these results also show that acute malnutrition (weight for length/height) was higher in the group with agricultural/livestock interventions ($P < 0.05$). This was detected in 39 cases that exhibit wasting or extreme thinness, probably as a result of a very severe food crisis. From these 39 cases found with the NCHS reference, 14[7] have some degree of severe malnutrition (under or equal to less than three standard deviations), indicating children who are in serious danger.

Results are similar when they are analyzed according to WHO references. However, when WHO growth references are applied instead of the NCHS references, there is an increase in chronic malnutrition rates. Thus, malnutrition rates are higher with those references than with NCHS references. Results show lower malnutrition rates for the first two anthropometric indices (height for age and weight for age) in the group in which livelihoods interventions have been implemented ($P < 0.05$), while acute malnutrition rates (weight for length/height) are higher. The National Mother-Child Health Survey 2008-2009 (ENSMI in Spanish) shows malnutrition results according to the WHO reference, which in the specific area of Quiché are: 72.2% of chronic malnutrition and 21.5% of overall malnutrition. These values are confirmed by the children who live in communities with agricultural/livestock activities, while communities without agricultural/livestock interventions have higher rates.

[7] With both the NCHS reference and the WHO reference, the total number of boys and girls with severe acute malnutrition is 20. The list of these children was shared with Save the Children, and from those 20, only two of them are children whose families are participating in the Program.

When results are disaggregated by age groups (Table III.B2), they show that there are higher chronic malnutrition rates among older girls and boys (from 36 to < 60 months old), according to the length/height for age (73.4% to 57.9%, P<0.05) (NCHS). In this case, it can also be said that a child who is over 36 months has 2 times more probability (*odds ratio*) of being chronically malnourished than does a younger child. Acute malnutrition (NCHS) in children from 36 to < 60 months is three times the rate of younger children, and the difference between both groups is statistically significant (P<0.05).

On the other hand, the results included in Table III.B3 show that the percentages of boys and girls with chronic, overall, and acute malnutrition (WHO) were similar when the sex of these children was considered.



III.B.2 Family Dietary Diversity and Family Food Scarcity

Table III.B.2 Family Dietary Diversity and Family Food Scarcity		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
Family Dietary Diversity and Family Food Scarcity							
4	Average dietary diversity score (average food groups eaten)	635	8.11 groups (7.86, 8.36)	172	7.04 groups (6.87, 7.21)	807	8.01 groups (7.76, 8.26)
4a	Percentage of families that ate from the following groups:						
4a1	A: Cereals	635 (635)	100% (-)	172 (172)	100% (-)	807 (807)	100% (-)
4a2	B: Roots and tubers	635 (415)	66.3% (59.7, 73.0)	172 (79)	39.7% (21.7, 57.6)	807 (494)	63.8% (57.4, 70.2)
4a3	C: Vegetables	635 (366)	56.2% (50.5, 62.0)	172 (76)	54.5% (36.3, 72.7)	807 (442)	56.0% (50.6, 61.5)
4a4	D: Fruits	635 (517)	80.6% (75.7, 85.5)	172 (109)	63.6% (46.2, 80.9)	807 (626)	79.0% (74.2, 83.8)
4a5	E: Meat, chicken, innards	635 (323)	48.2% (40.0, 56.3)	172 (70)	39.7% (66.5, 13.4)	807 (393)	47.4% (39.7, 55.0)
4a6	F: Eggs	635 (434)	70.7% (67.4, 74.1)	172 (112)	59.0% (49.4, 68.6)	807 (546)	69.6% (66.4, 72.9)
4a7	G: Fish and seafood	635 (25)	3.2% (1.6, 4.8)	172 (0)	0% (-)	807 (25)	2.9% (1.5, 4.3)
4a8	H: Legumes /nuts	635 (502)	79.5% (75.7, 83.3)	172 (144)	86.1% (80.8, 91.4)	807 (646)	80.1% (76.7, 83.5)
4a9	I: Milk and dairy products	635	31.1%	172	14.2%	807	29.5%

Table III.B.2 Family Dietary Diversity and Family Food Scarcity		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
		(195)	(26.1, 36.2)	(18)	(7.5, 20.8)	(213)	(25.0, 34.7)
4a10	J: Oils/fats	635 (569)	90.7% (88.1, 93.3)	172 (137)	79.0% (69.9, 88.2)	807 (706)	89.6% (87.0, 92.2)
4a11	K: Sugar/honey	635 (630)	99.4% (98.6, 100)	172 (170)	99.6% (99.4, 99.8)	807 (800)	99.4% (98.7, 100)
4a12	L: Various foods	635 (532)	85.1% (80.6, 89.7)	172 (131)	68.6% (55.1, 82.1)	807 (663)	83.6% (79.1, 88.0)
Family Food Scarcity							
5	Average number of months of adequate household food provisioning	635	10.48 months (10.27, 10.68)	172	10.66 months (10.28, 11.04)	807	10.49 months (10.30, 10.69)
5a	Most scarce foods:						
5a1	A: Corn	635 (313)	50.2% (43.5, 56.9)	172 (57)	43.0% (38.9, 47.1)	807 (370)	49.5% (43.4, 55.6)
5a2	B: Beans	635 (270)	43.9% (37.6, 50.3)	172 (44)	34.8% (30.0, 39.5)	807 (314)	43.1% (37.3, 48.8)
5a3	C: Horticultural products	635 (72)	12.5% (7.2, 17.8)	172 (17)	10.8% (4.5, 17.1)	807 (89)	12.3% (7.5, 17.1)
5a4	D: Herbs	635 (35)	5.9% (2.9, 8.8)	172 (6)	4.5% (0.0, 13.6)	807 (41)	5.8% (2.9, 8.6)
5a5	E: Sugar	635 (116)	17.2% (13.1, 21.4)	172 (44)	29.2% (22.2, 36.1)	807 (160)	18.4% (14.5, 22.2)
5a6	F: Oil	635	4.2% (2.1, 6.4)	172	0.7% (0.3, 1.1)	807	3.9% (2.0, 5.8)

Table III.B.2 Family Dietary Diversity and Family Food Scarcity		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
		(22)		(3)		(25)	
5a7	G: Rice	635 (45)	7.3% (4.6, 10.0)	172 (12)	7.3% (6.1, 8.5)	807 (57)	7.3% (4.9, 9.7)
5a8	H: Eggs	635 (40)	6.4% (3.8, 8.9)	172 (8)	5.4% (2.0, 8.7)	807 (48)	6.3% (4.0, 8.6)
5a9	I: Meat	635 (90)	14.6% (10.3, 18.9)	172 (33)	21.2% (12.0, 30.4)	807 (123)	15.2% (11.2, 19.2)
5a10	J: Others	635 (49)	7.3% (4.3, 10.4)	172 (11)	6.4% (1.9, 10.9)	807 (60)	7.2% (4.4, 10.0)
5b	Reasons for food scarcity:						
5b1	A: A lack of money	635 (240)	37.0% (32.4, 41.5)	172 (63)	39.5% (28.3, 50.7)	807 (303)	37.2% (33.0, 41.5)
5b2	B: A lack of employment	635 (170)	27.4% (23.1, 31.6)	172 (45)	27.3% (19.3, 35.2)	807 (215)	27.4% (23.5, 31.2)
5b3	C: A large family	635 (18)	2.7% (1.0, 4.3)	172 (8)	5.5% (1.3, 9.6)	807 (26)	2.9% (1.4, 4.70)
5b4	D: Market/place to buy food is too far away	635 (6)	0.9% (0.1, 1.7)	172 (3)	3.0% (2.4, 3.5)	807 (9)	1.1% (0.4, 1.8)
5b5	E: No crop was harvested	635 (178)	28.9% (25.2, 32.6)	172 (18)	13.7% (6.0, 21.4)	807 (196)	27.5% (24.0, 31.0)
5b6	F: The harvest was lost	635 (80)	12.4% (8.0, 16.8)	172 (10)	8.8% (6.6, 10.9)	807 (90)	12.0% (8.1, 16.0)
5b7	G: Expensive food	635	3.5% (2.4, 4.6)	172	3.1% (0.0, 8.0)	807	3.4% (2.3, 4.5)

Table III.B.2 Family Dietary Diversity and Family Food Scarcity		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
		(22)		(7)		(29)	
5b8	H: Others	635 (19)	2.8% (0.8, 4.9)	172 (6)	3.8% (3.4, 4.1)	807 (25)	2.9% (1.1, 4.8)
6	Average of reduced severity index[8] *"What did you do for food during months of scarcity?"*	635	2.49 points (2.14, 2.84)	172	2.32 points (1.64, 3.0)	807	2.47 points (2.15, 2.80)
6a	What did you do for food during months of scarcity?						
6a1	A: Sold an asset	635 (53)	9.4% (5.6, 13.2)	172 (10)	7.6% (5.9, 9.3)	807 (63)	9.2% (5.8, 12.6)
6a2	B: Sold animals	635 (114)	17.9% (12.9, 23.0)	172 (28)	17.9% (5.0, 30.8)	807 (142)	17.9% (13.2,22.7)
6a3	C: Sold land	635 (1)	0.2% (0.0, 0.5)	172 (0)	0.0% (-)	807 (1)	0.1% (0.0, 0.4)
6a4	D: Borrowed money	635 (78)	12.1% (7.4, 16.9)	172 (22)	12.1% (5.3, 19.0)	807 (100)	12.1% (7.8, 16.5)
6a5	E: Some of the children had to work	635 (50)	7.3% (4.0, 10.6)	172 (6)	5.2% (2.0, 8.3)	807 (56)	7.1% (4.1, 10.1)
6a6	F: A member of the family went to work somewhere else	635	42.2%	172	39.6%	807	41.9%

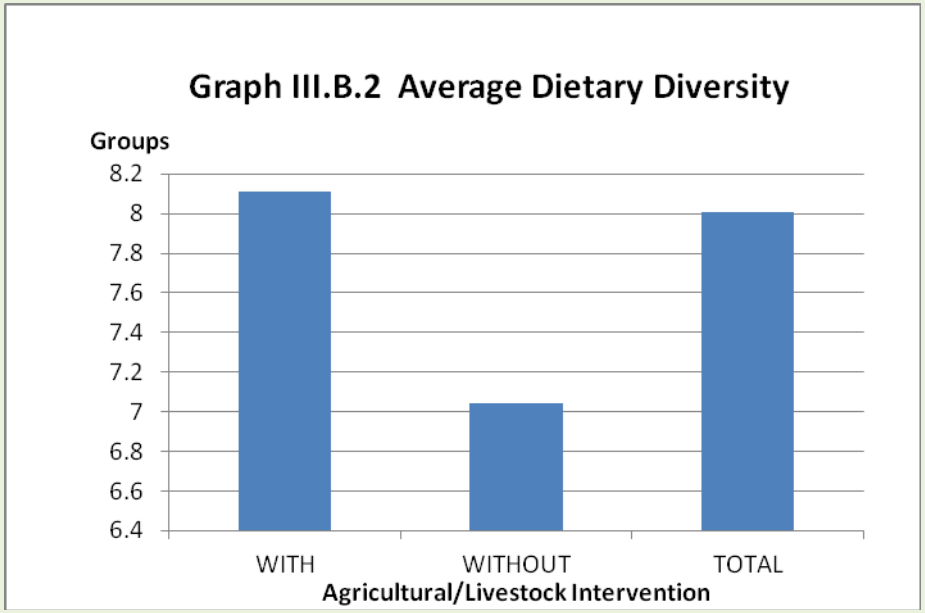
[8] ***"Severity Index"*** also known as "CSI" *(Coping Strategies Index).* This index has been thoroughly studied in Africa, and was created by the *World Food Program (WFP) Assisted Refugees in Western Tanzania.* The index is included in a document drafted by several organizations in 2008[8], and it is defined as the sum of weighted adaptations (or strategies used by the family to face food crises). In Guatemala, JMatute-CIENSA has estimated it for UNICEF and World Vision. *The index is based on a scale ranging from "0" a "20" points, in which "0" means that no strategy was used and "20", which is the maximum severity, means that all the strategies being measured were used.*

Table III.B.2 Family Dietary Diversity and Family Food Scarcity		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
		(262)	(37.0, 47.3)	(54)	(29.8, 49.3)	(316)	(37.1, 46.7)
6a7	G: Reduced the number of meals	635 (11)	1.4% (0.5, 2.3)	172 (6)	1.3% (0.4, 2.2)	807 (17)	1.4% (0.6, 2.2)
6a8	H: Others	635 (21)	2.9% (1.4, 4.5)	172 (8)	4.7% (2.7, 6.7)	807 (29)	3.1% (1.7, 4.5)

III.B.2 Family Dietary Diversity and Family Food Scarcity

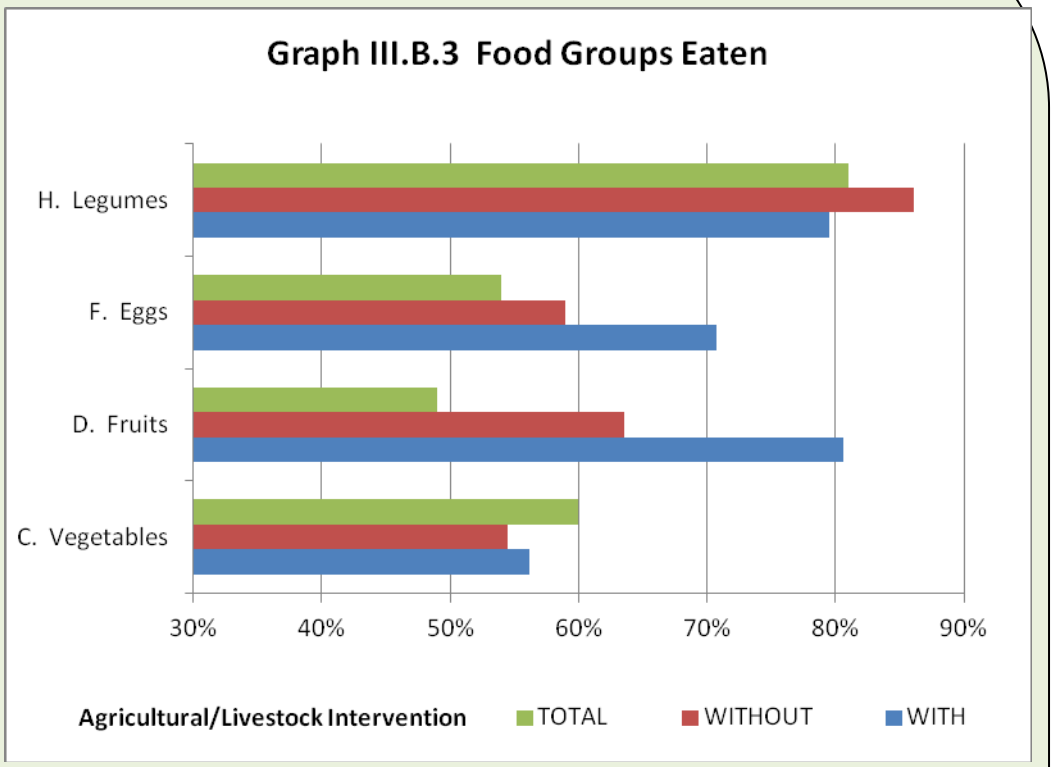
Main Findings:

Table III.B.2 shows that the population with agricultural/livestock interventions has a dietary diversity score that is higher than the one for the population without such interventions. (8.11 points versus 7.04 points, respectively, P<0.05). Similarly, the percentage of people eating several food groups is higher in the population with livelihoods activities (agricultural/livestock intervention). It shows that 100% of families eat cereals and another similar percentage (99.4%) eats sugar or honey. Other foods commonly eaten include oils or fats (89.6%), legumes



(80.1%), and fruits (79.0%), followed by products such as milk and dairy products (29.5%). The foods that are less eaten are fish and seafood (2.9%).

Results also show that adequate household food provisioning is 10.5 months; however, it is important to note that from the 809 households that were interviewed, 371 mentioned having had adequate food provisioning during the 12 months (46%[9]) of the year. Consequently, 436 reported having at least one month of scarcity, and July was reported as the month in which there is more scarcity (248 out of the 436 that were interviewed). The food that is reportedly most scarce is corn (49.5%), followed by beans (43.1%). The main reasons given by families for the scarcity of these foods in the household were "a lack of money" (32.7%), "no crop was harvested" (27.5%) and "a lack of employment" (27.4%).

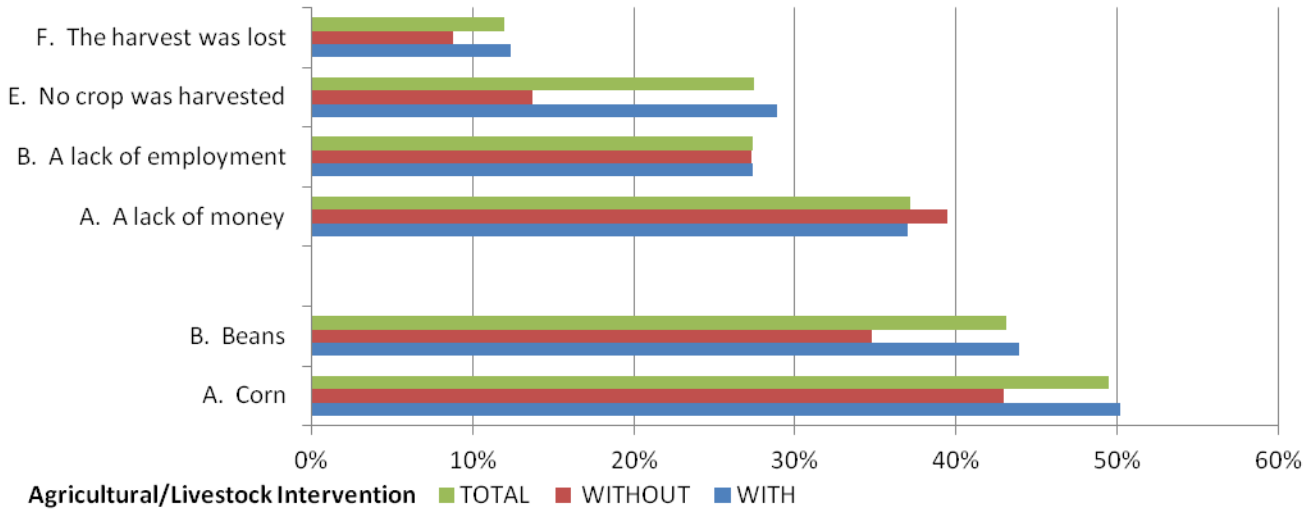


The severity index quantifies the family's capability to face the food crisis resulting from the lack of food in the household. Index values fluctuate from 0 to 20. "0"means that families did not have to adapt, while "20" means that they sought all possible coping strategies (those that were measured). Results show an average value of 2.47 points, which indicates that the population that was analyzed did not have much need to adapt during the past year. This result may be explained by the high percentage of households

[9] Non-weighted value

in which there was adequate provisioning during most months of the year. It is important to mention that not all possible adaptation mechanisms were measured, and that consequently, the index is not sufficient to establish food insecurity in this population. The most widely-used adaptation mechanism was seeking employment somewhere else (41.9%), followed by selling animals (17.9%).

Graph III.b.4 Reasons for Scarcity and Foods that Were Scarce



III.B.3 Information, Education and Communication in Health and Nutrition

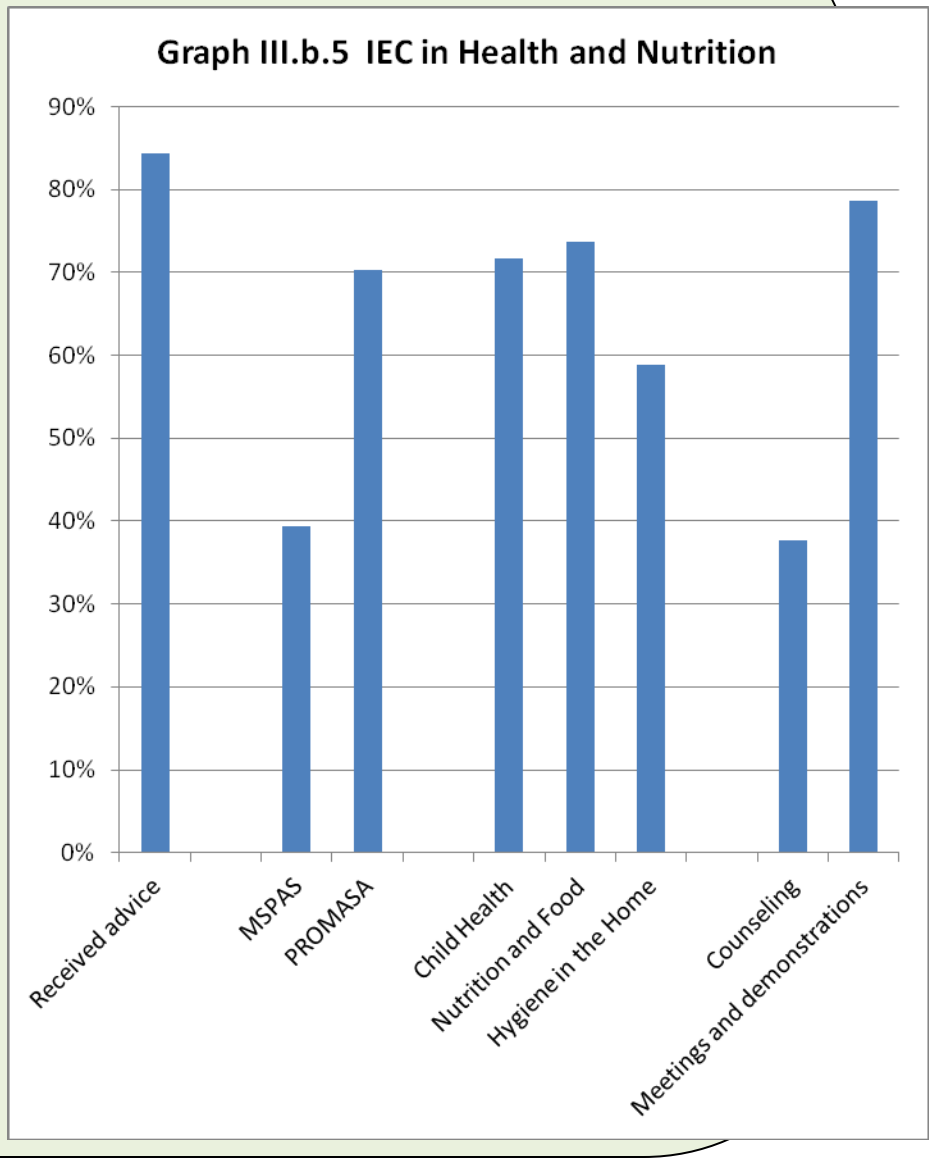
Table III.B.3 Information, Education and Communication in Health and Nutrition		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
7	Percentage of women who state that they have received health and nutrition advice during the past month	635 (534)	84.0% (80.1, 87.9)	172 (141)	87.4% (81.8, 92.9)	807 (675)	84.3% (80.7, 87.9)
7a	Percentage of women who state that they have received advice from MoH personnel and/or the Food Security Program.	635 (530)	83.1% (78.7, 87.5)	172 (133)	85.2% (79.4, 91.1)	807 (663)	83.3% (79.3, 87.3)
	They received advice from:						
7a1	A: MoH health personnel	635 (229)	37.8% (28.9, 46.7)	172 (71)	54.2% (32.6, 75.8)	807 (300)	39.3% (31.0, 47.7)
7a2	B: Community personnel from the Food Security Program	635 (453)	70.0% (65.8, 74.3)	172 (114)	73.4% (72.4, 74.3)	807 (567)	70.3% (66.5, 74.2)
7a3	C: Family, neighbors and others	635 (37)	6.8% (3.3, 10.3)	172 (21)	12.7% (10.8, 14.6)	807 (58)	7.3% (4.2, 10.5)
7b	Counseling topics:						
7b1	A: Children's health	635 (459)	70.5% (64.3, 76.8)	172 (122)	82.4% (73.9, 90.8)	807 (581)	71.7% (65.9, 77.5)
7b2	B: Pregnant women's health	635 (83)	12.6% (7.3, 18.0)	172 (31)	19.6% (12.9, 26.3)	807 (114)	13.3% (8.4, 18.2)
7b3	C: Newborns' health	635 (110)	17.1% (12.5, 21.8)	172 (36)	18.1% (8.8, 27.4)	807 (146)	17.2% (12.9, 21.5)
7b4	D: Nutrition and feeding practices	635	90.2%	172	75.5%	807	73.7%

Table III.B.3 Information, Education and Communication in Health and Nutrition		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
		(463)	(69.2, 77.8)	(117)	(73.1, 78.0)	(580)	(69.8, 77.6))
7b5	E: Hygiene in the home	635 (369)	58.9% (55.6, 62.2)	172 (89)	59.2% (48.2, 70.3)	807 (458)	58.9% (55.8, 62.1)
7b6	D: Water treatment and care	635 (189)	30.5% (26.1, 34.9)	172 (56)	31.5% (29.6, 33.3)	807 (245)	30.6% (26.6, 34.6)
7c	Ways in which advice or messages were transmitted:						
7c1	A: Counseling	635 (227)	35.1% (27.3, 42.9)	172 (95)	61.4% (36.4, 86.4)	807 (322)	37.6% (29.9, 45.3)
7c2	B: Education sessions and/or demonstrations	635 (505)	78.9% (75.2, 82.5)	172 (125)	77.5% (72.1, 82.9)	807 (630)	78.7% (75.4, 82.1)
7c3	C: Home visits	635 (94)	14.4% (9.3, 19.4)	172 (12)	5.1% (6.8, 7.9)	807 (106)	13.7% (9.1, 18.3)
7c4	D: Some type of social media (radio, posters, billboards, TV, loudspeakers)	635 (69)	11.4% (5.7, 17.1)	172 (33)	28.8% (26.4, 31.1)	807 (102)	13.1% (7.9, 18.2)

III.B.3 Information, Education, and Communication in Health and Nutrition

Main Findings:

84.3% of women reported having received health and nutrition advice during the past month. Results show that receiving such advice did not have any connection with disaggregation of the population by agricultural/livestock interventions. This is interpreted as being the result of IEC activities in health and nutrition having been executed equally among both populations, which was to be expected. There are a high percentage of women (83.3%) who state that they have received advice from qualified MoH or PROMASA personnel; most of them (70.3%) received it from the latter source. The main topics addressed in those instances were "Nutrition and Feeding Practices" and "Children's Health" (71.7%). The topics most seldom addressed were "Pregnant Women's Health" (13.3%) and "Newborns' Health" (17.2%). The main method used to transmit this knowledge was education sessions and/or demonstrations (78.7%). It is interesting to note that the percentage of home visits is considerably higher ($P<0.05$) among the population with agricultural/livestock interventions (14.4%) than among the population without this activity (5.2%).



III.B.4 Children Feeding Practices

Table III.B.3 Children Feeding Practices		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
Breastfeeding in Children Under 6 Months Old							
8	Percentage of children under six months old who were exclusively breastfed in the last 24 months	100 (77)	79.7% (72.7, 86.6)	30 (25)	84.1% (60.3, 100)	130 (102)	80.1% (73.4, 86.8)
8a	Percentage of women with children under six months old who are breastfeeding them	100 (100)	100% (-)	30 (30)	100% (-)	130 (130)	100% (-)
Feeding Practices in Children from 6 to < 24 Months							
9	Percentage of mothers of children from 6 to < 24 months old who have breastfed their child	309 (299)	96.1% (93.1, 99.2)	85 (84)	99.7% (99.2, 100)	394 (383)	96.5% (93.8, 99.3)
9a	Percentage of mothers of children from 6 to < 24 months who are breastfeeding their children	309 (278)	89.5% (85.7, 93.2)	85 (76)	95.9% (94.6, 97.3)	394 (354)	90.1% (86.8, 93.5)
10	% of mothers and caregivers of children from 6 to > 24 months who know and practice good weaning/ complementary feeding (started feeding their children when he/she was 6 months old)	309 (280)	89.7% (85.7, 93.6)	85 (74)	86.5% (85.1, 87.8)	394 (354)	89.3% (85.8, 92.8)
10a	Average age in which children from 6 to < 24 months old started to be fed	294	6.54 months (6.31, 6.78)	80	6.33 months (6.00, 6.73)	374	6.52 months (6.31, 6.74)
11	Percentage of boys and girls from 6 to < 24 months old (whether they are breastfed or not) fed according to minimum standards for infant and children feeding practices. *It complies with the following: 11a1, 11a2, 11a3, 11a4*	309 (20)	7.4 % (4.8, 10.0)	85 (5)	9.4% (3.2, 15.6)	394 (25)	7.6% (5.2, 10.1)
11a1	Percentage of women who fed their children the recommended number of times for their age: • 6 to 8 months, 3 or more times • 9 to 11 months, 4 or more times • 12 to < 24 months, 5 or more times	309 (107)	35.8% (28.7, 42.8)	85 (17)	27.3% (18.3, 36.4)	394 (124)	34.9% (28.5, 41.2)

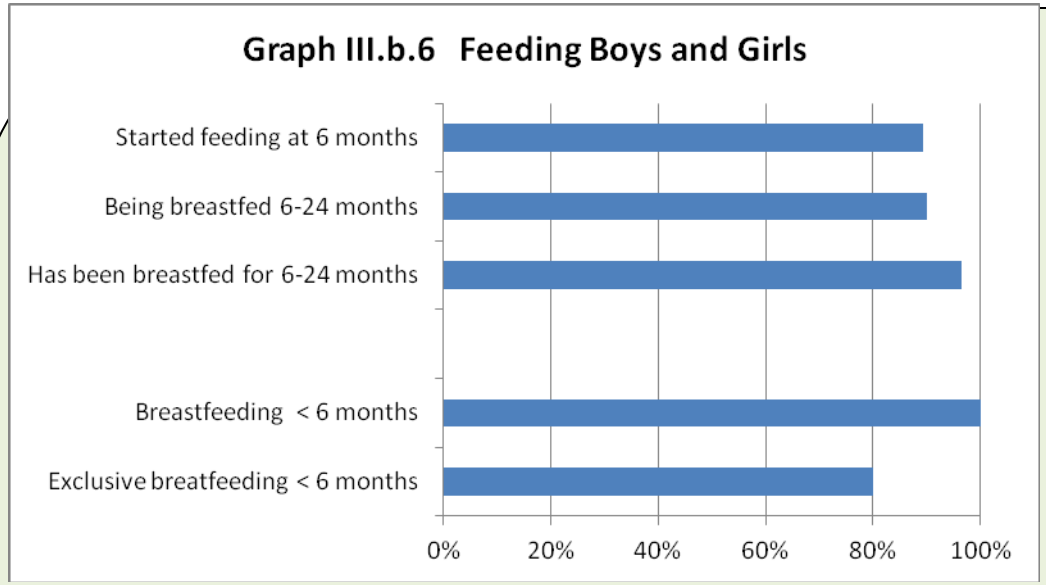
Table III.B.3 Children Feeding Practices		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
11a2	Percentage of women who prepared food as recommended for their children's age • 6 to 8 months, pureed or strained • 9 to 11 months, minced or diced • 12 to < 24 months, minced or diced or the same as the rest of the family	309 (133)	40.8% (32.4, 49.2)	85 (37)	39.3% (36.2, 42.3)	394 (170)	40.6% (33.1, 48.2)
11a3	Percentage of women who fed their children the number of spoonfuls of food recommended for their age for yesterday's lunch: • 6 to 8 months, 3 spoonfuls or more • 9 to 11 months, 4 spoonfuls or more • 12 to < 24 months, 5 spoonfuls or more	309 (193)	64.5% (59.0, 69.9)	85 (36)	46.2% (39.7, 52.7)	394 (229)	62.5% (57.6, 67.5)
11a4	Percentage of women who fed their families at least four of the following foods groups yesterday: a. Cereals, roots and tubers b. Legumes and nuts c. Dairy products (milk, yogurt, cheese) d. Meats (meat, fish, chicken and liver or innards e. eggs f. fruits and vegetables rich in Vitamin A g. other fruits and vegetables	309 (103)	36.1% (30.6, 41.6)	85 (23)	28.0% (16.2, 39.7)	394 (126)	35.2% (30.1, 40.4)
	Percentage of women who fed the following food groups to their families:						
Galim1	Cereals, roots and tubers	309 (282)	91.6% (88.1, 95.0)	85 (76)	90.2% (86.2, 94.2)	394 (358)	91.4% (88.3, 94.5)
Galim2	Legumes and nuts	309 (194)	61.5% (54.8, 68.3)	85 (56)	63.1% (54.4, 71.7)	394 (250)	61.9% (55.6, 67.8)
Galim3	Dairy products (milk, yogurt, cheese)	309 (14)	5.4% (2.1, 8.7)	85 (0)	0.0% (-)	394 (14)	4.8% (1.9, 7.7)

Table III.B.3 Children Feeding Practices		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
Galim4	meats (meat, fish, chicken and liver or innards)	309 (66)	19.4% (13.9, 24.8)	85 (16)	17.5% (5.4, 28.2)	394 (82)	19.2% (14.2, 24.1)
Galim5	eggs	309 (143)	50.0% (44.9, 55.1)	85 (41)	43.1% (34.2, 51.9)	394 (184)	49.2% (44.5, 54.0)
Galim6	fruits and vegetables rich in Vitamin A	309 (53)	18.9% (13.4, 24.4)	85 (12)	15.7% (0.0, 32.5)	394 (65)	18.5% (13.3, 23.8)
Galim7	other fruits and vegetables	309 (151)	52.9% (46.4, 59.3)	85 (31)	39.9% (30.2, 49.5)	394 (182)	51.5% (45.5, 57.5)
	Percentage of women who fed their families:						
11a4a	Only one group	309 (23)	7.3% (1.4, 4.7)	85 (7)	11.6% (9.3, 13.8)	394 (30)	7.8% (5.4, 10.2)
11a4b	Only two groups	309 (77)	22.3% (18.3, 26.3)	85 (22)	21.6% (18.2, 25.0)	394 (99)	22.2% (18.6, 25.8)
11a4c	Only three groups	309 (94)	30.3% (24.0, 36.5)	85 (28)	32.5% (25.0, 40.0)	394 (122)	30.5% (24.9, 36.2)

III.B.4 Children Feeding Practices

Main Findings:

80.1% of children in the population in which PROMASA is being executed were exclusively breastfed when they were under 6 months old; these values establish 73.4% and 86.8% (confidence interval) levels for this indicator. In comparison, results from the ENSMI 2008-2009 survey show 60.4% for this practice. Thus, the values from this study are over the national average. In regard to breastfeeding in general, the ENSMI 2008-2009 survey reports 96.6% of breastfeeding with or without complementary feeding to children less than 6 months old in rural areas, which concurs with the findings of this study (100%).



96.5% of boys and girls over 6 months old and under two years old have been breastfed, and 90.1% of children were being breastfed at the time of this study. Therefore, there are almost 10% of girls and boys over 6 months old and under two years old who are no longer being breastfed. The recommended age for children to start receiving complementary feeding is 6 months. We can see that the percentage of women who engaged in this practice was 89.3%. The average age in which boys and girls are first given solid foods is 6.52 months.

With respect to complementary feeding, the indicator on mothers who engage in all good practices is very low (7.6%), which is explained by the relatively low values obtained for the four indicators or practices that were measured and that make up this overall indicator: Feeding children food the recommended number of times, 34.9%; preparing food in the recommended way, 40.6%; feeding children the recommended number of spoonfuls, 62.5%, and feeding children a variety of foods (at least one food from at least four different food groups) the day before, 35.2%. The food group that was most fed to children the day before was “cereals, roots, and tubers” (91.4%), followed by the “legumes and nuts” food group (61.9%). The “dairy” food group was the one less fed to children (4.8%), followed by “fruits and vegetables rich in Vitamin A” (18.5%), as well as “meats” (19.2%). It is important to take into account that within the percentages of the diversity of foods fed to children, there are some low ones, but even so, these are relatively high owing to the biological impact that they can have on children’s nutritional status. In is also worth noting that there was 7.8% of women who only fed one food group to their children, and 22.2% who only fed them two groups, both totaling 30% of women.

Additionally, it is important to note that the nutrition IEC strategy has been implemented during only one and a half years[10]. Thus, the findings, which are rather good, speak well of this strategy.

[10] Information provided by Save the Children

III.B.5 Danger Signs in Mothers', Newborns' and Children's Health

Table III.B.5 Danger Signs in Mothers', Newborns', and Children's Health		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
12	Percentage of women who recognize at least two danger signs during pregnancy	635 (540)	84.3% (77.3, 91.3)	172 (135)	86.6% (76.0, 97.2)	807 (675)	84.5% (78.1, 91.0)
13	Percentage of women who exhibited danger signs during their pregnancy *Among those who stated recognizing at least one signal*	560 (249)	45.4% (39.4, 51.4)	145 (79)	53.6% (34.9, 72.3)	705 (328)	46.2% (40.6, 51.8)
14	Percentage of women who sought advice or treatment when they recognized a danger sign during their pregnancy	249 (239)	96.5% (94.0,99.0)	79 (70)	85.9% (66.0, 100)	328 (309)	95.3% (92.1, 98.5)
14a	Where they sought advice						
14a1	Hospital, health center/post, private clinic	239 (215)	89.1% (80.8, 97.3)	70 (59)	83.6% (73.6, 93.6)	309 (274)	88.5% (81.1, 95.9)
14a2	MoH community centers, health promoters, traditional birth attendants	239 (76)	32.2% (20.2, 44.2)	70 (33)	52.9% (11.3, 94.4)	309 (109)	34.3% (23.0, 45.6)
14a3	Others	239 (5)	1.7% (0.0, 3.5)	70 (1)	0.6% (0.0, 1.6)	309 (6)	1.6% (0.0, 3.2)
15	Percentage of women who recognize at least two neonatal (less than 28 days) danger signs	635 (451)	70.6% (64.4, 76.7)	172 (103)	63.2% (58.5, 67.9)	807 (554)	69.9% (64.3, 75.4)
16	Percentage of women who state that one of their children exhibited a danger signal when they were newborns *Among those who stated recognizing at least one signal*	517 (203)	39.9% (33.9, 45.8)	125 (67)	62.1% (56.6, 67.6)	642 (270)	41.9% (36.5, 47.4)
17	Percentage of women who stated that they sought advice and treatment when their newborn exhibited danger signs	203 (194)	96.4% (93.5, 99.3)	67 (63)	98.1% (97.6, 98.5)	270 (257)	96.6% (94.2, 99.1)
17a	Where they sought advice						
17a1	Hospital, health center/post, private clinic	194	92.8%	63	95.5%	257	93.1%

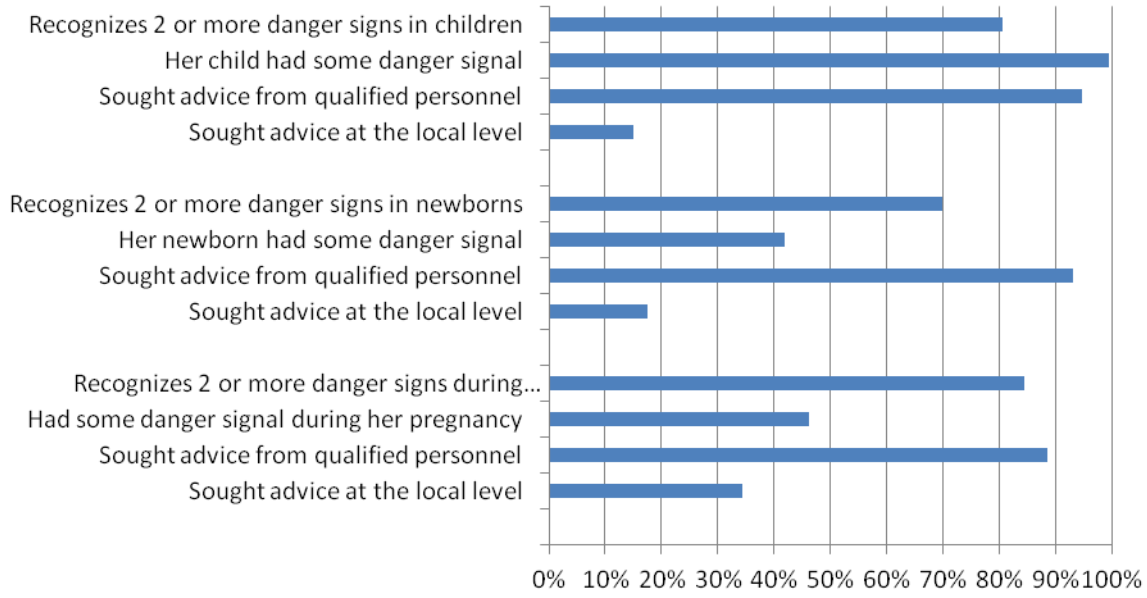
Table III.B.5 Danger Signs in Mothers', Newborns', and Children's Health		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
		(182)	(87.1, 98.4)	(56)	(89.9, 100)	(238)	(88.2, 98.1)
17a2	MoH community centers, health promoters, traditional birth attendants	194 (33)	17.0% (8.8, 25.1)	63 (12)	21.1% (4.4, 37.8)	257 (45)	17.5% (10.1, 24.9)
17a3	Others	194 (9)	4.4% (0.7, 8.1)	63 (5)	10.2% (1.9, 18.5)	257 (14)	5.2% (1.8, 8.7)
18	Percentage of women who recognize at least two danger signs that indicate that their children need treatment when they are sick	635 (509)	79.5% (74.6, 84.4)	172 (147)	91.3% (79.0, 100)	807 (656)	80.6% (76.0, 85.3)
19	Percentage of women who state that one of their children has exhibited danger signs when he/she has been sick *Among those who stated recognizing at least one signal*	571 (401)	69.4% (63.7, 75.1)	155 (127)	86.5% (79.5, 93.5)	726 (528)	71.2% (66.0, 76.3)
20	Percentage of women who state having sought advice or treatment when their children exhibited a danger sign	401 (399)	99.5% (98.9, 100)	127 (126)	99.7% (99.6, 99.8)	528 (525)	99.5% (99.0, 100)
20a	Where they sought advice						
20a1	Hospital, health center/post, private clinic	399 (379)	94.7% (89.8, 99.5)	126 (121)	94.3% (90.0, 98.5)	525 (500)	94.6% (90.3, 98.9)
20a2	MoH community centers, health promoters, traditional birth attendants	399 (57)	16.2% (7.5, 24.9)	126 (9)	7.0% (1.8, 12.3)	525 (66)	15.1% (7.3, 22.8)
20a3	Others	399 (18)	4.8% (2.1, 7.6)	126 (13)	13.7% (0.0, 27.7)	525 (31)	5.9% (2.8, 9.0)

III.B.5 Danger Signs in Mothers', Newborns', and Children's Health

Main Findings:

84.5% of women recognize at least two danger signs during pregnancy. It was determined that among those who recognize at least one such danger sign, 46.2% stated that they had experienced one of these signs, and among these women, 95.3% mentioned that they had sought help (advice or treatment). A high percentage (88.5%) of these women sought help from qualified personnel (hospital, health center/post, or private clinic), and 34.3% sought help at the local level (MoH community centers, health promoters or traditional birth attendants).

Graph III.b.7 Danger Signs during Pregnancy, in Newborns and in Children



The percentage of women who recognize danger signals in newborns (at least two signals) is 69.9%. Among those who stated recognizing at least one danger sign, 41.9% confirmed that one of their children exhibited at least one danger sign when he/she was a newborn, and almost all of these women (96.6%) sought help from qualified personnel (hospital, health center/post, or private clinic), while 17.5% sought help at the local level (MoH community centers, health promoters or traditional birth attendants).

80.6% of women recognize at least two danger signs when their children are sick. Among women who stated that they recognized at least one danger sign, 71.2% stated that one of their children had exhibited some. In this case, almost all of them (99.5%) sought help, mainly from qualified personnel (94.6%). Only 15.1% sought help locally.

III.B.6 Water Treatment

Table III.B.6 Water Treatment		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
21	Percentage of families who treat their water (by boiling, chlorinating, and filtering it or by using the SODIS methodology)	635 (629)	99.0% (98.1, 99.9)	172 (169)	99.6% (98.7, 100)	807 (798)	99.0% (98.2, 99.8)
	Percentage of families who treat their water by:						
21a	Boiling it	635 (608)	96.0% (93.9, 98.1)	172 (167)	99.2% (98.4, 99.9)	807 (775)	96.3% (94.4, 98.2)
21b	Filtering it	635 (118)	16.6% (10.2, 23.0)	172 (10)	3.8% (1.3, 6.2)	807 (128)	15.4% (9.6, 21.1)
21c	Chlorinating it	635 (20)	2.2% (0.7, 3.6)	172 (2)	0.5% (0.0, 1.4)	807 (22)	2.0% (0.7, 3.3)
21d	SODIS	635 (86)	14.3% (9.7, 18.9)	172 (17)	7.1% (4.4, 9.8)	807 (103)	13.6% (9.4, 17.8)

III.B.6 Water Treatment

Main Findings:

The microbiological quality of water is an important factor for good health. When water is contaminated with pathogens associated with diarrhea, children's nutritional status is negatively affected. The pathogen producing cholera is so virulent that it can cause death, especially among populations who are vulnerable due to their poverty and poor nutritional status. In Guatemala, the Instituto de Nutrición para Centroamérica y Panamá (Institute of Nutrition of Central America and Panama–INCAP) has studied the connection between diarrhea and the nutritional status of children. These studies have shown how diarrhea episodes, when they are frequently repeated over long periods of time, even if they are not serious, may affect children's nutritional status. Since contaminated water is one of the vectors for these pathogens, it is very important that water be treated before it is consumed by families. Almost all families (99.0%) treat water in one way or another: 96.3% boils water; 15.4% filters it; 13.6% uses the SODIS methodology, and 2.0% uses chlorine.

III.B.7 Agricultural/Livestock Practices

A total of 807 households were selected and visited, and information was gathered in them. Not all families living in these households engage in agricultural and livestock activities and thus, the sample sizes in this section are smaller than the ones in previous sections. There are 768 families engaged in agriculture and 135 engaged in livestock activities.

Table III.B.7 Agricultural/Livestock Practices		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
Livestock Practices ***Measured only in families who engage in agriculture***							
22	Percentage of producers adopting at least two good agricultural practices	609 (405)	67.1% (58.8, 75.4)	159 (54)	50.8% (44.8, 56.9)	768 (459)	65.5% (57.9, 73.1)
22a	Agricultural practices adopted:						
22a2	Percentage of producers with better corn and/or bean practices: producers who use 4 or more seeds per hole when planting corn; producers use improved seed to plant beans	609 (298)	47.8% (40.4, 55.3)	159 (48)	37.4% (32.0, 42.8)	768 (346)	46.8% (40.0, 53.7)
22a4	Percentage of producers who adopt horticultural- diversification practices	609 (292)	51.1% (42.1, 60.2)	159 (33)	35.0% (31.8, 38.1)	768 (325)	49.5% (41.3, 57.8)
22a6	Percentage of producers who adopt soil-conservation practices	609 (477)	79.5% (74.2, 84.8)	159 (94)	75.2% (58.8, 91.6)	768 (571)	79.1% (74.1, 84.1)
22a7	Percentage of producers who adopt pest-control practices	609 (171)	30.3% (20.3, 40.3)	159 (4)	2.6% (0.0, 5.3)	768 (175)	27.6% (18.5, 36.7)
Livestock Practices ***Measured only in families who engage in livestock activities***							
23	Percentage of producers adopting good livestock practices (with goats) *Complying with the following two: 23a and 23b*	127 (108)	83.4% (74.0, 92.7)	8 (2)	8.4% (4.8, 12.1)	135 (110)	81.3% (72.2, 90.4)

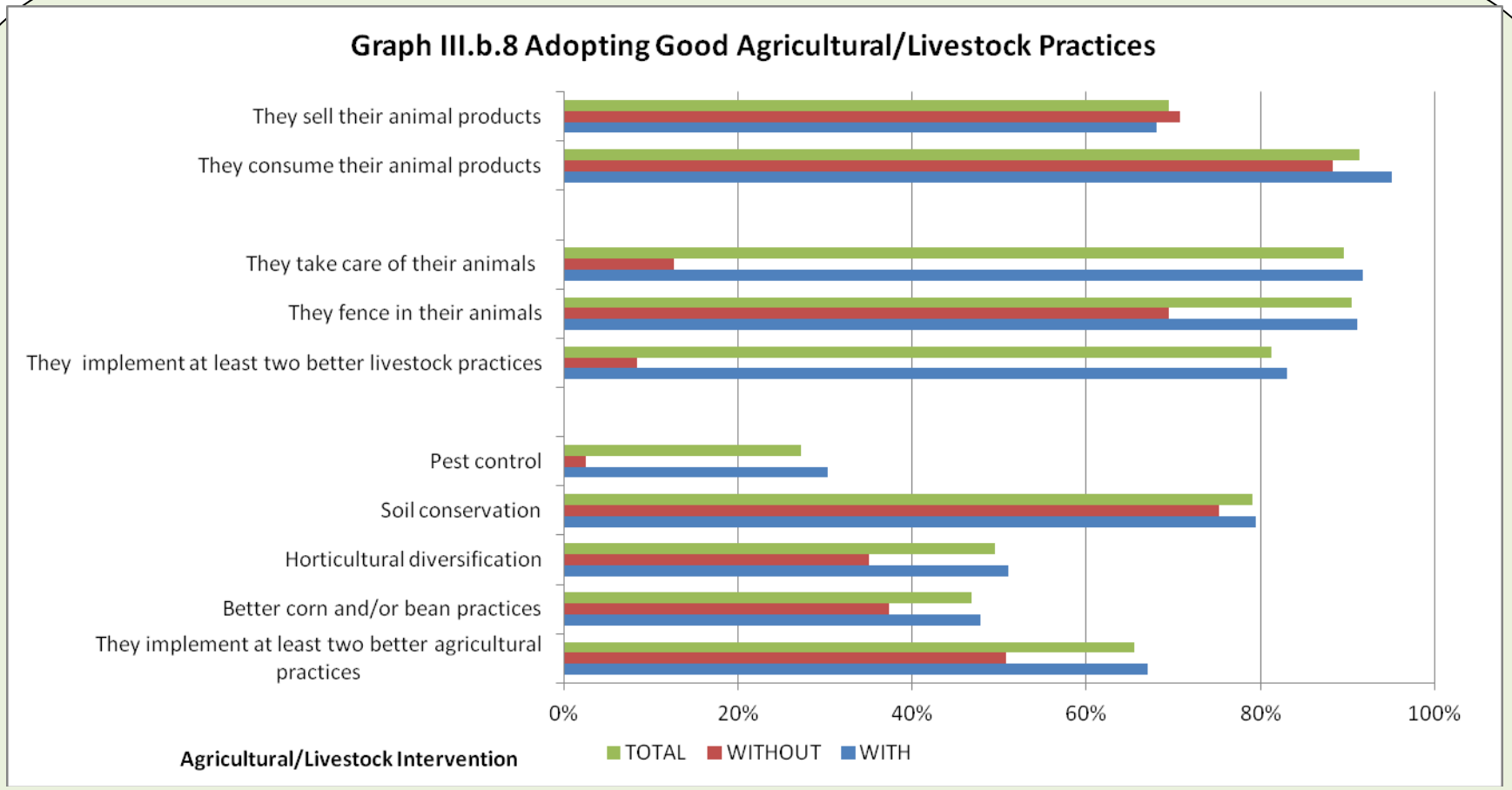
Table III.B.7 Agricultural/Livestock Practices		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
23a2	Percentage of producers who fence in their animals (goats)	127 (117)	91.1% (85.3, 96.8)	8 (6)	69.5% (31.1, 100)	135 (123)	90.5% (84.7, 96.2)
23b2	Percentage of producers who take care of their animals: Giving vitamins to goats and deworming them	127 (117)	91.7% (84.9, 98.5)	8 (3)	12.6% (7.1, 18.0)	135 (120)	89.5% (82.6, 96.4)
24	Percentage of families who consume at least one food originating from their animal production (goats)	127 (124)	96.9% (93.4, 100)	8 (8)	100% (-)	135 (132)	97.0% (93.6, 100)
25	Percentage of producers who sell at least one of the foods originating from their animal production (goats)	127 (101)	76.9% (62.6, 91.2)	8 (8)	100% (-)	135 (109)	77.5% (63.6, 91.5)
Production Information, Education and Communication *(considering individuals who engage in agricultural and/or livestock activities)*							
26	Percentage of individuals who have received agricultural/livestock production advice	635 (417)	67.9% (63.1, 72.6)	172 (65)	48.2% (41.9, 54.4)	807 (482)	66.0% (61.5, 70.5)
27	Frequency with which they are given advice:						
27a	Once per month	417 (267)	62.9% (52.2, 73.6)	65 (24)	33.6% (0.0, 80.8)	482 (291)	60.8% (50.3, 71.4)
27b	At least once every two months	417 (53)	13.6% (8.7, 18.4)	65 (7)	12.7% (0.0, 31.3)	482 (60)	13.5% (8.8, 18.2)
27c	Every three months	417 (35)	8.7% (5.2, 12.3)	65 (8)	16.1% (6.1, 26.1)	482 (43)	9.3% (5.8, 12.7)
27d	More than three months apart	417 (35)	8.0% (4.6, 11.5)	65 (8)	14.6% (13.0, 16.3)	482 (43)	8.5% (5.3, 11.7)
28	The advice received during the past year has centered on:						
28a	Improving their agricultural production	417 (383)	92.8% (90.7, 94.9)	65 (53)	88.9% (87.9, 89.9)	482 (436)	92.5% (90.5, 94.6)
28b	Improving their business	417 (46)	9.6% (4.3, 14.9)	65 (0)	0.0% (-)	482 (46)	8.9% (4.0, 13.8)

Table III.B.7 Agricultural/Livestock Practices		Results					
Indicator		Population WITH Agricultural/Livestock Interventions		Population WITHOUT Agricultural/Livestock Interventions		Total Population	
Code	Name	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)	Sample Size (# Cases)	% (CI 95%)
28c	Guidance to earn more money	417 (22)	4.9% (2.3, 7.5)	65 (0)	0.0% (-)	482 (22)	4.5% (2.1, 7.0)
28d	Improving their livestock production	417 (377)	90.9% (86.7, 95.0)	65 (55)	89.5% (86.0, 93.1)	482 (432)	90.8% (86.9, 94.6)
29	Who have provided advice in recent years:						
29a	Organizations that support production and commercialization	417 (339)	83.7% (72.3, 95.1)	65 (30)	43.7% (0.0, 97.8)	482 (369)	80.9% (69.4, 92.4)
29b	Family or neighbors	417 (15)	3.1% (0.9, 5.3)	65 (11)	10.5% (7.9, 13.0)	482 (26)	3.6% (1.5, 5.7)
29c	Communication media (radio, TV, printed, loudspeakers)	417 (3)	1.1% (0.0, 2.4)	65 (2)	1.1% (0.1, 2.0)	482 (5)	1.1% (0.0, 2.3)
29d	Local technicians or promoters	417 (86)	18.1% (5.1, 31.2)	65 (26)	48.3% (0.0, 97.0)	482 (112)	20.3% (7.5, 33.0)

III.B.7 Agricultural/Livestock Practices

Main Findings:

As all the communities where Save the Children works generally engage in agriculture, it is to be expected that even in those communities where Save the Children did not implement its agricultural and production strategic objective, good agricultural practices have been implemented. This is evidenced in Table III.B.7, since it shows that there is implementation of these good practices, as well as education on agricultural/livestock topics, both in communities in which the agricultural objective was developed and in those in which it was not.



The achievements of PROMASA's Livelihoods component (agricultural/livestock interventions) in the communities where it was implemented are also shown in this table, since the percentage of producers adopting at least two good agricultural practices is significantly higher ($P<0.05$) in those communities with this component (67.1%) when compared to the population in communities without this component (50.8%): An agricultural producer who lives in a community that has been exposed to agricultural/livestock interventions is 1.53 times *(odds ratio)* more

likely to adopt at least two good agricultural practices than a producer who lives in a community that has had no such exposure. Similarly, the percentage of producers who have implemented good corn and/or bean practices is significantly higher (P<0.05) among the population with agricultural/livestock interventions (47.8%) than among the population without this component (37.8%). Likewise, practices such as horticultural diversification (with Program, 51.1%; without Program, 35.0%) and pest control (with Program, 30.3%; without Program, 2.6%) were significantly (P<0.05) higher in the population with agricultural/livestock interventions.

Livestock practices are limited to those who are raising an animal. In this regard, Save the Children has promoted and encouraged goat raising, which, as shown in the table, is being practiced by 135 families. Almost all of them (127) are located in communities where Save the Children has implemented livestock activities. As can be seen, 83.4% of those who have goats and live in areas with Program influence have adopted two good practices: Fencing in their animals (goats) and taking care of the goats (giving them vitamins and deworming them). Both practices, individually, have been adopted by 91% of producers. Implementing these two practices is important, both because they guarantee the productivity of these animals and also because they promote a cleaner and more healthy environment in the household.

Because of the economic and hygienic importance of good livestock practices, it is considered that they could be connected to the nutritional level shown in the anthropometric section, in addition to good agricultural practices which can also contribute to families' food security.

Implementation of good practices is, in turn, a reflection of an education process. Results show that the percentage of individuals who received advice on agricultural/livestock production is significantly higher (P<0.5) among the population in which agricultural/livestock interventions have been implemented (67.9%) compared to the population in which they have not (48.2%). It is also important to underscore that the frequency with which they receive this advice is greater in those communities where the Program is implementing these activities that in those where it is not. Additionally, results show that most producers (83.7%) state that this advice has been provided by organizations that support production and commercialization, such as PROMASA.

III.B.8 Improved Income (Formal Marketing)

The information contained in this table was obtained by means of a sub-sample of the original sample. This sub-sample was composed of all the participants in marketing or improved-income activities located within the communities selected for this survey. In this case, this involved three communities.

Table III.B.8 Improved income (Formal Marketing)			
Indicator		Results	
Code	Name	Sample Size (# Cases)	% (CI 95%)
30	Percentage of producers implementing two formal-marketing practices (ind30a1 y/o Ind30a2)	43 (42)	99.2% (98.5, 99.9)
	Formal marketing practices used:		
30a1	Percentage of producers who make their production and/or marketing estimates	43 (43)	100% (-)
30a2	Percentage of producers keeping production and/or commercialization records	43 (42)	99.2% (98.5, 99.9)
31	Percentage of producers who receive institutional technical assistance for formal marketing	43 (41)	95.9% (93.0, 98.8)
31a	Type of producers' businesses:		
31a1	agricultural	43 (43)	100% (-)
31a2	livestock	43 (10)	25.0% (13.1, 36.8)
31b	family business	43 (2)	7.0% (0.0, 13.8)
32	Percentage of producers implementing production/marketing plans	43 (43)	100% (-)
	Places where they sell their products:		

Table III.B.8 Improved income (Formal Marketing)			
Indicator		Results	
Code	Name	Sample Size (# Cases)	% (CI 95%)
32a1	community market	43 (17)	18.8% (15.5, 22.1)
32a2	municipal market	43 (34)	74.8% (16.7, 100)
32a3	regional market, wholesaler in the capital city, agent, export market	43 (29)	81.2% (78.1, 84.3)
33	Percentage of producers who state that they have had problems that have affected their businesses	43 (41)	94.0% (89.9, 98.1)
33a	Type of problem:		
33a1	Lack of marketing or lack of expert advice	43 (33)	78.8% (19.6, 100)
33a2	Lack of money or capital or raw materials	43 (33)	81.7% (61.7, 100)
33a3	Lack of control of operation records or lack of organization by producers	43 (2)	4.4% (1.5, 7.3)

III.B.8 Improved Income

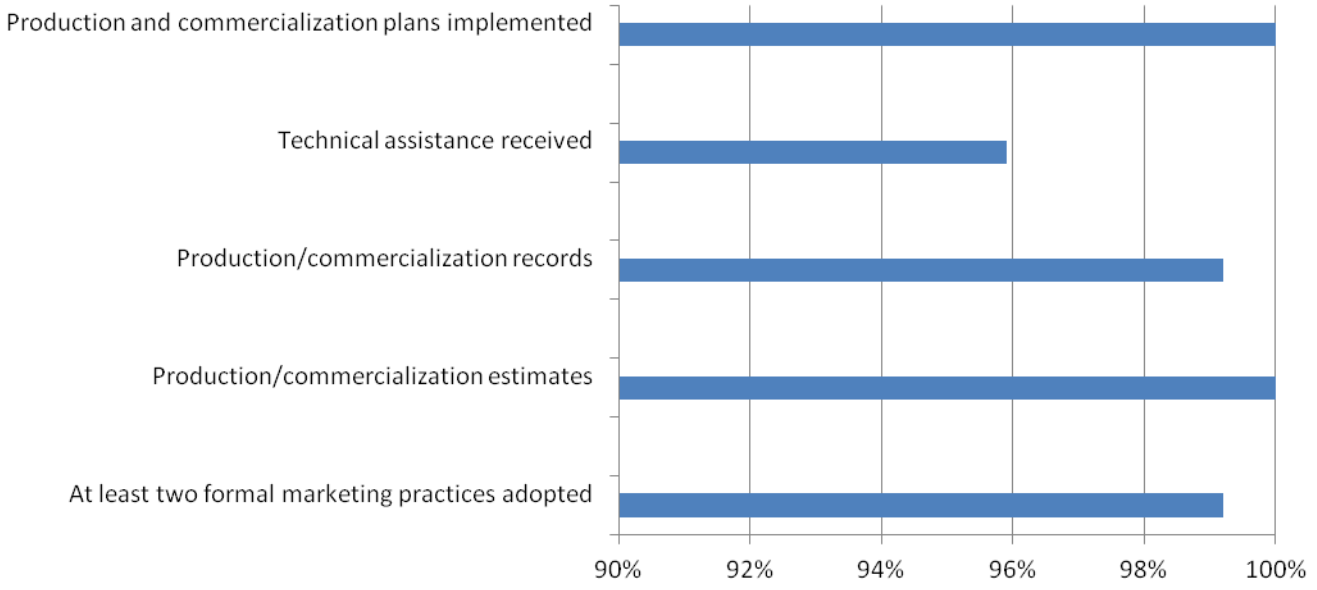
Main Findings:

Contrary to the indicators in previous sections, which were measured considering the general population, Improved Income was measured in a small sample of program participants engaged in this activity. Thus, a total of 43 individuals were interviewed. Results show that 100% of these individuals have an agricultural business and that a small percentage of them have some additional business (25% have livestock businesses and 7% have a family business).

As to practices connected to Improved Income, 99.2% of individuals have implemented two formal-marketing practices: "making production and marketing estimates" and/or "keeping production and marketing records", and 100% have implemented production and marketing plans. The great majority of these individuals (81.2%) sell their products in markets outside their communities, seeking larger markets (regional markets, wholesalers in the capital city, export markets). However, there are also 74.8% of them who do not miss the opportunity of selling their products in their municipal markets; very few of them (18.8%) sell their products locally in their communities.

Almost all of these individuals (94%) stated that they have had problems affecting their businesses. The main problems they have encountered are the lack of markets and lack of expert advice (78.8%) and the lack of capital/raw materials (81.7%).

Graph III.b.9 Income Improvement



III.B.9 Community Risks

The information for this table was gathered by interviewing community leaders (especially those from COCODES), so the sample in this case corresponds to communities and not to individuals.

Table III.B.9 Community Risks (Sentinel Sites)

Information from sentinel sites

Indicator	Results Sample Size = 2 Number of cases
Number of communities where COCODES have received training on risk management	2
Number of communities where COCODES have received training on COCODES' functions	1
Number of communities where COCODES have received training on the risk of food and nutritional insecurity	1
Number of communities where COCODES have received training on the risk of disasters	1
Number of communities where COCODES have received training on project profiles	1
Number of communities where COCODES have received training on food and nutritional security	1
Number of communities where COCODES have received training on project management	1
Number of communities that have a community risk-management plan (the existence of this document was verified)	1
Issues in which the community is actively working	Accidents and disease Rainfall Plant and animal pests and diseases Prices of the basic food basket
Materials were provided during training	1
Which are the topics that the community most liked or considered the most important?	Authorities' and COCODES' functions Rescuing malnourished children Project management Reforestation
They have negotiated resources at the municipal level to respond to your needs.	2
They have executed a project that benefits the whole community.	2
They have participated in an activity or training connected to a surveillance system or a lack of food warning system or a Sentinel Site.	2 Potable water Paving streets Roofing homes

Table III.B.9 Community Risks (Sentinel Sites) *Information from sentinel sites*	
Indicator	**Results** **Sample Size = 2** **Number of cases**
	Sports playing fields
People in the community participate in a surveillance system or a lack of food warning system or a Sentinel Site.	1
They know what a community surveillance board is.	1
The presence of a community surveillance board was verified (through observation).	1
They have an updated notebook (verified through observation).	1
They know how to use colored faces.	1
They know what the early-warning system or Sentinel Site is used for.	1
They have the Information Table for the community Sentinel Site. (Verified through observation.)	1
There is a notebook in which Sentinel Site records are written.	1
They know what a rain gauge is.	1
They have installed a rain gauge.	1
They keep a log on sheets of paper or a notebook on the amount of rainfall for each day.	1

III.B.9 Community Risks

Main Findings:

No comments are possible with a sample that is so small. However, considering that only two Sentinel Sites were observed (those located within the 31 communities that were visited), and that one of them had so many weaknesses, it is recommended that the Program strengthen its system to follow up and supervise these sites.

IV Conclusions

Based on the foregoing findings, the following conclusions have been drawn:

1. Save the Children's Maya Food Security Program surpassed the indicator values that it committed to at the baseline. Because of its importance, it is essential to underscore the decrease in chronic and overall malnutrition in children under five years old. It is also important to mention the positive changes achieved in areas such as adopting good health and nutritional practices and good agricultural/livestock practices. The increase in household dietary diversity, as families incorporated a greater variety of foods into their diets is another factor that must be highlighted.

2. Except for one indicator (average number of months of adequate household food provisioning), all the other exceeded the established goal for each one of them, which indicates program performance.

3. The impact that PROMASA's nutrition and health, and agricultural/livestock activities have had on families' food security is evident, especially the agricultural/livestock activity, which is reflected in boys' and girls' nutritional status. In places where there was an agricultural/livestock intervention, the nutritional development of children is better, compared to those places where there was no such intervention.

V Annexes

1. Effects of the Design of 2011 MYAP Indicators
2. A summary of surveys by communities, in the Nutrition and Health and the Agricultural/Livestock components.
3. A summary of the surveys by communities, in the Marketing and Commercialization component.

Attached documents:

4. First Progress Report: Training field personnel, attached document: *Primer informe de avance Capacitación.docx (First Progress Report on Training.docx)*
5. Second Progress Report: Field Work, attached document: *Segundo informe de trabajo de campo.docx (Second Progress Report on Field Work.docx)*

Databases (attached documents)

6. File with original EPI INFO bases (REC files)
7. File with EPI INFO bases containing indicators (REC files), as well as programs used to develop them (PGM files)

ANNEX 1: Effects of the Design of 2011 MYAP Indicators

Area	Indicators		Effect of Design
Anthropometry in children under 5 years old	1a	Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age), NCHS	4.084
	1b	Percentage of children under 5 years old with chronic malnutrition (Z < -2SD height/age), WHO	4.767
	2a	Percentage of children under 5 years old with overall malnutrition (Z < -2SD weight/age), NCHS	2.049
	2b	Percentage of children under 5 years old with overall malnutrition (Z < -2SD weight/age), WHO	2.689
Anthropometry in children under 36 months	2a	Percentage of children under 36 months old with overall malnutrition (Z < -2SD weight/age), NCHS	2.049
	2b	Percentage of children under 36 months old with overall malnutrition (Z < -2SD weight/age), WHO	2.689
Family dietary diversity and family food scarcity	4	Average dietary diversity score	2.036
	5	Average number of months of adequate household food provisioning	1.643
Children feeding practices	8	Percentage of infants under 36 months of age who were exclusively breastfed during the past 24 hours	0.953
Danger signs in mothers', newborns', and children's health	12	Percentage of mothers of children under 36 months of age who recognize at least two danger signs during pregnancy that indicate the need to seek health services	6.654
	15	Percentage of mothers of children under 36 months of age who recognize at least two danger signs in newborns (<28 days) that indicate the need to seek health services	3.059
	18	Percentage of mothers and caregivers of children under 6 months of age who recognize at least two danger signs of childhood illnesses that indicate the need to seek health services	2.945
Agricultural/Livestock Practices	22	Percentage of producers adopting at least two good agricultural practices	5.083
	23	Percentage of producers adopting good livestock practices	1.927
Improved income	30	Percentage of producers adopting at least two good formal-marketing practices	0.069

ANNEX 2

A Summary of Surveys by Communities, in the Nutrition and Health and the Agricultural/Livestock Components

Department	Community	Surveyor Group	No. of Selected Households	No. of Effective Interviews
Quiche	Santa Clara	3	35	23
Quiche	Xemac	2	35	18
Quiche	Ilom	1	35	25
Quiche	Sotzil	2	35	27
Quiche	Xolcuay	3	35	24
Quiche	Santa Abelina	2	35	27
Quiche	Chonchola	1	35	32
Quiche	El Pinal	3	35	26
Quiche	Vichibilá	1	35	33
Quiche	Pamaxán	1	35	31
Quiche	Actxumbal	3	35	25
Quiche	Pulay	2	35	25
Quiche	Palop	3	35	27
Quiche	Villalá	2	35	25
Quiche	Rio Azul	1	35	29
Quiche	Xexucap	3	35	28
Quiche	Salquil Grande	1	35	27
Quiche	Vicalamá	2	35	23
Quiche	El Pinal	1	35	24
Quiche	Tierra Blanca Pericón	3	35	25
Quiche	El Palmar	2	35	24
Quiche	El Caracol	3	35	25
Quiche	Jacubí	1	35	26
Quiche	San Antonio	2	35	25
Quiche	Chiul	3	35	25
Quiche	Batzulá	2	35	25
Quiche	La Hacienda	1	35	27
Quiche	Chacaguex	2	35	25
Quiche	Trapichitos	3	35	26
Quiche	Patulup	1	35	26
Quiche	1er Centro de Rio Blanco	1,2,3	35	29

ANNEX 3

A Summary of the Surveys by Sentinel Sites, in the Marketing and Commercialization Component

Department	Community	Surveyor Group	No. of Marketing Forms
Quiche	El Palmar	2	8
Quiche	El Caracol	3	20
Quiche	Chiul	3	15

A Summary of Surveys by Community Sentinel Sites

Department	Community	Surveyor Group	Situation Room
Quiche	Santa Abelina	2	1
Quiche	Actxumbal	3	1