FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

GUATEMALA

Feed the Future Zone of Influence Baseline Report

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Western Highlands Integrated Program (WHIP) Evaluation

Baseline 2013

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Acronyms

5DE	5 Domains of Empowerment (a WEAI sub-index)
AGEXPORT	*Asociación Guatemalteca de Exportadores* (Guatemalan Exporters' Association)
ANACAFE	*Asociación Nacional del Café* (National Coffee Producers' Association)
EMEPAO	*Encuesta de Monitoreo y Evaluación del Programa del Altiplano Occidental* (Western Highlands Integrated Program Monitoring and Evaluation Survey)
ENCOVI	*Encuesta Nacional de Condiciones de Vida* (Living Standards Measurement Survey)
ENSMI	*Encuesta Nacional de Salud Materno Infantil* (National Maternal and Child Health Survey)
FTF	Feed the Future
GHI	U.S. Global Health Initiative
GPI	Gender Parity Index (a WEAI sub-index)
GPS	Global Positioning System
INCAP	*Instituto de Nutrición de Centroamérica y Panamá* (Institute of Nutrition of Central America and Panama)
INE	*Instituto Nacional de Estadística* (National Statistics Institute)
LSMS	Living Standards Measurement Survey
MSPAS	*Ministerio de Salud Pública y Asistencia Social* (Ministry of Public Health and Social Assistance)
PPP	Purchasing Power Parity
RVCP	Rural Value Chain Project
USAID	United States Agency for International Development
USD	United States Dollars
WEAI	Women's Empowerment in Agriculture Index
WHIP	Western Highlands Integrated Program
ZOI	Zone of Influence

Executive Summary

Since 2012, the USAID Mission in Guatemala has been engaged in an effort to implement 18 different programs in 30 municipalities located in the Guatemalan Western Highlands. This group of inter-related programs is known as WHIP, the Western Highlands Integrated Program. WHIP's main objectives are to reduce poverty and chronic malnutrition, improve health and nutrition, and increase health service utilization in the region. This baseline survey deals directly with two of those 18 programs: the Rural Value Chain Project (RVCP), which seeks to increase agricultural productivity and improve market access, and the health and nutrition program, which includes several partners implementing community-level activities designed to improve the health of women and children under age five and to expand and strengthen available health services. In order to evaluate these programs' performance, changes over time in key population and program performance indicators will be examined. Specifically, changes occurring from 2013 to 2015 (the program's midpoint) and from 2013 to 2017 (the end of the program) will be analyzed. A difference-in-differences, quasi-experimental design with a matched control group and fixed effects will be applied, with the aim of evaluating program impact. EMEPAO 2013 is thus the first of three surveys that will provide representative and longitudinal data to evaluate the WHIP. Through the baseline survey, information was gathered from 4,007 households in the WHIP Zone of Influence (ZOI) and 2,294 households in matched comparison areas. The ZOI is comprised of three representative domains: RVCP direct beneficiaries, who are exposed to the health program interventions and also enrolled in the agricultural intervention; RVCP indirect beneficiaries, who are exposed to the health interventions and exposed indirectly to the agricultural interventions, and Health Only beneficiaries, who receive only the health interventions. EMEPAO 2013 was carried out between July and November 2013.

General Characteristics: Almost 90% of households have at least one male adult and one female adult member, and the average household size is six. In 76% of households in the ZOI, the head of household self-identifies as indigenous. Children under 5 years old are present in more than half of households (57%), and almost 78% include children from five to 17 years of age. Nearly eight out of every ten females and seven out of every ten males in the ZOI reports not having completed primary education. Approximately half of the houses have dirt or sand floors, 83% have electricity and the same percentage reports piped water as the main source of drinking water.

Poverty: 76% of WHIP ZOI residents live below the total poverty line (27.17 Quetzales per capita daily), while 27% live below the extreme poverty line (13.18 Quetzales per capita daily).

Child Health: Postnatal care is almost universal (83%), but less than two days elapses between a child's brith and first medical checkup in only 35% of cases. Coverage of Pentavalent 1-3 and MMR/measles vaccination is almost 100%, and Pentavalent booster vaccination coverage is similar. Two out of every 10 children suffered from diarrhea in the two weeks preceding the survey, and four out of ten with diarrhea were taken to a health facility. Over 30% of mothers reduced liquids or stopped giving them entirely to children experiencing a bout of diarrhea, and in six out of every 10 cases limited or no food was offered. During the two weeks preceding the survey, 15% of children in the ZOI suffered from acute respiratory infection (ARI), defined as a cough with rapid breathing; 62% were taken to a health facility. In four out of every 10 ARI cases, the amount of liquid offered to children was reduced, while food was reduced or witheld altogether in 75% of cases.

Nutrition: Chronic malnutrition is frequent among children under 5 years old in the ZOI, with 67% of children affected. Global malnutrition is less common at 17%, while less than 1% of children suffer from acute malnutrition. Exclusive breastfeeding during the first six months of a child's life is common but not universal (66%). Approximately 40% of six to 23 month-old children living in the ZOI have a Minimum Acceptable Diet. A considerably higher percentage exhibited acceptable feeding frequency (72%) compared to those with acceptable dietary diversity (49%). One out of every three children from ages six to 59 months in the ZOI showed some degree of anemia, but most had only mild levels. Eighteen percent of reproductive-age women exhibit anemia, with 29% prevalence among pregnant women and 23% prevalence among breastfeeding women.

Reproductive Health: Eighty-six percent of women in the ZOI receive prenatal care from a physician or nurse. Three out of every four women in the ZOI visit a health facility 4 or more times for prenatal care during pregnancy and 65% initiate prenatal checkups in the first trimester. Thirty-six percent of most-recent births to reproductive age women in the last five years were attended by a physician or a nurse. Less than half of women received care provided by a physician or a nurse during the post-partum period, while more than one in four women received post-partum care from a traditional birth attendant. Thirty-nine percent of women in the ZOI reported current use of a modern family planning method. The most widely used modern methods are injections (23%) and female sterilization (almost 11%). Women's main source of modern contraceptive methods is the public sector, with 80% seeking care at government facilities. More than one in ten women who were between 18 and 24 years old at the time of the 2013 survey had given birth for the first time before attaining age 18.

Agriculture and Food Security: Moderate or severe hunger affects 14% of households in the ZOI. Only 12% of households reported having food gardens or planting crops for personal consumption, but almost half stated that they had a plot of land available for that purpose. Seventy percent of households reported raising farm animals in the 12 months preceding the survey. The same percentage reported that at least one member of the household had worked as a farmer or farm worker. Analysis of the type of work performed by individuals 12 years old and up showed that 30% were employed in agriculture. Sixty-five percent of RVCP Direct Beneficiary households had already received technical assistance aimed at improving production. This result contrasts radically with that for RVCP Indirect Beneficiary households (4%) and households in the Health Only domain (2%). The Women's Empowerment in Agriculture Index (WEAI) tracks changes in the level of women's empowerment in Feed the Future program areas. Guatemala's 2013 WEAI score is 0.77 on a scale of zero to one, where one reflects the highest level of empowerment.

Health Services: Eight-nine percent of health facilities serving the population are first level facilities and 11% are secondary facilities. Except for labor and delivery, essential service provision at health facilities in the ZOI is very high. It surpasses 95% for most services by type (for example, 99% prescribe family planning methods, 98% provide prenatal care, and 99% offer well-child check-ups). Professional medical staff are concentrated in Mother/Child Integrated Care Centers (CAIMIs in Spanish) and in Permanent Care Centers. Only 19% of health facilities report having adequate roofing, walls, windows, and floors. Twenty-six percent possess all essential utilities and equipment: electricity, drinking water, a refrigerator, and an instrument sterilizer. Utility and equipment adequacy is concentrated in health centers and health posts. Thirty-sevent percent of facilities have an *in situ* pharmacy. The vast majority (94%) reported at least one supply stockout during the 6 months preceding EMEPAO 2013.

Infrastructure and Community Resources: At the community level, approximately half of households in the ZOI are located in communities with paved or ballasted roads, and six out of every 10 households have public transportation services available in their community. Forty-three percent of ZOI households are located in communities in which toilets or washable latrines are connected to a sewage system. While "Mi Bono Seguro" (a conditional cash transfer program) and the Fertilizer Program are available in communities where more than 92% and 81% of ZOI households are located, respectively, access to other social development programs is presently very low. Every household in the ZOI is located in a community with a primary school, but less than half are located in a community with a secondary school. Forty-seven percent of households are less than 5 kilometers from a health post. A similar percentage (46%) is located less than 5 kilometers from a convergence center.

Balance between Program and Comparison Groups: RVCP Group (direct and indirect beneficiaries) were statistically similar to the comparison group (Domain 4) on 56 out of the 75 indicators examined; that is, on 75% of them. Further, on 65 out of the 75 (87%) indicators the Health Only group was similar to its comparison group (Domain 5). These are encouraging results as far as the impact evaluation is concerned, as they establish an acceptable level of similarity between program and comparison groups. However, the results also indicate that there are differences between these two groups that must be controlled for during program impact estimation.

1. Introduction and Background

1.1. Introduction

Guatemala's population is one of the most disadvantaged in Latin America. Half of Guatemalans live in poverty, and high levels of malnutrition and maternal and child morbidity and mortality persist. A lengthy history of political and socioeconomic conflict has contributed to the country's health problems and to increasing social inequities. The United States Agency for International Development (USAID) works with the Government of Guatemala (GoG) to implement a country strategy focused on sustainable development in the health, education, governance, environmental, and economic sectors. Five United States Presidential initiatives are being implemented in Guatemala, including Feed the Future (FTF) and the U.S. Global Health Initiative (GHI), both of which are included in the Western Highlands Integrated Program (WHIP). The WHIP program is an ambitious effort that consists of 18 different programs designed to reduce poverty and chronic malnutrition in 30 priority municipalities in the region, by incorporating interventions in the agriculture, health, governance, education, and climate change sectors. Among other activities, the program offers a package of interventions to help improve incomes among smallholder agricultural and handicraft producers, as well as support for strengthening maternal and child health services. WHIP officially started in mid-2012 and will run for five years. It covers an area with a population of 1.5 million people.

Along with providing support for WHIP, USAID/Guatemala decided to facilitate an evaluation aimed at providing information on program performance as well as measure its impact. The performance evaluation will analyze changes in key program indicators every two years, and will start by measuring baseline conditions in 2013. The impact evaluation is based on a quasi-experimental difference-in-differences design using a matched comparison group. Both evaluations require household surveys conducted with representative samples of the WHIP beneficiary population, which are planned for 2013, 2015, and 2017. In July 2013, a research team led by MEASURE Evaluation with Guatemalan collaborators implemented the field work for the Western Highlands Integrated Program Monitoring and Evaluation Survey 2013 (EMEPAO 2013).[1] Field work lasted five months and covered more than 6,300 households in 309 communities in 54 highlands municipalities. The results of these efforts constitute the baseline for the WHIP evaluation. This report describes major results from the EMEPAO 2013 in the WHIP Zone of Influence.

[1] Field work could not start prior to this time due to technical and operational/administrative issues on the part of the programs, which were still in their start-up phases. For example, to select a sample for the survey, a beneficiary sample frame was necessary, and this was developed during the first quarter of 2013.

1.2. The Western Highlands Integrated Program (WHIP)

1.2.1. Objectives

WHIP's main objectives are to reduce chronic malnutrition among children in the 30 municipalities prioritized by the program, and to reduce poverty in the same area. The program strategy combines interventions aimed at improving household economic conditions with interventions that seek to increase access to and use of high-quality nutrition, maternal and child health, and family planning services. The Program coordinates the functions of several different initiatives with interrelated objectives: 1) the Rural Value Chain Project (RVCP); 2) a health and nutrition program aimed at improving access to health, nutrition, and family-planning services; 3) Title II/PL480, which provides food assistance and education about nutrition, sanitation, and health; 4) a program designed to strengthen local governance; 5) a primary education program that focuses on the quality of learning and on supporting bilingual education, and 6) a program aimed at reducing vulnerability to climate change. The RVCP and health/nutrition components are the explicit focus of the performance evaluation.

1.2.2. WHIP Program Components and Interventions

Of the programs that make up WHIP, two – the RVCP and the health and nutrition program– form the basis for the sampling strategy used in the baseline survey and for the impact evaluation design. Note also that the health and nutrition program covers the entire population in the 30 priority municipalities, while the RVCP focuses only on selected producers' associations. The RVCP is mainly expected to generate effects among the producer-members of associations participating in the program, and to yield indirect effects on households located in the same census tracts (*sectores* in Spanish) as association members, through increasing incomes and local expenditures, and by generating employment from increased productive activities.

The Rural Value Chain Project (RVCP): This program is based on the value chain model (RVC) promoted by Feed the Future, and it has two main components. The first is providing technical assistance and training to agricultural producers' associations on topics such as horticultural and coffee value chains and to handicraft producers on how to increase their production, improve the quality of their products, expand their market competitiveness, and gain access to national and international markets. When household incomes improve, dietary quality is also expected to increase. The second component seeks to improve families' nutritional status through education and information communication in RVC members' households. Combining education with income generation should generate positive changes in nutrition-related behavior; improve household food availability, and increase children's and women's dietary diversity and quality, resulting in improved nutritional status in these populations. The agencies implementing this program include the Asociación Nacional del Café (ANACAFE) and the Asociación Guatemalteca de Exportadores (AGEXPORT). At the start of 2013, the program included 118 associations that included approximately 4% of households in the 30 priority municipalities. Households with an RVC producer are located in census tracts where 28% of the population in the ZOI resides. Thus, these areas include direct beneficiaries plus a much larger population of indirect beneficiaries.

The health and nutrition program: This program is designed to mitigate health and nutrition problems among women and children in Guatemala's Western Highlands, promoting improvements in health and

nutrition practices at the household level, expanding the availability of health and nutrition services, and improving the quality of the health care system and services. The program promotes behavior change in order to improve home health practices and to increase the use of maternal and child health, reproductive health, and family planning services. The program also includes initiatives to improve the cultural relevance, transparency and accountability of public health services.

1.2.3. WHIP Zone of Influence

WHIP operates in 30 priority municipalities of five departments located in the Highlands region. Jointly, these 30 municipalities are also known as the WHIP Zone of Influence (ZOI)[2]. Table 1.1 shows the list of priority municipalities and their population totals, estimated as of mid-2013. Figure 1.1 shows the location of WHIP municipalities.

Table 1.1: Priority WHIP Municipalities

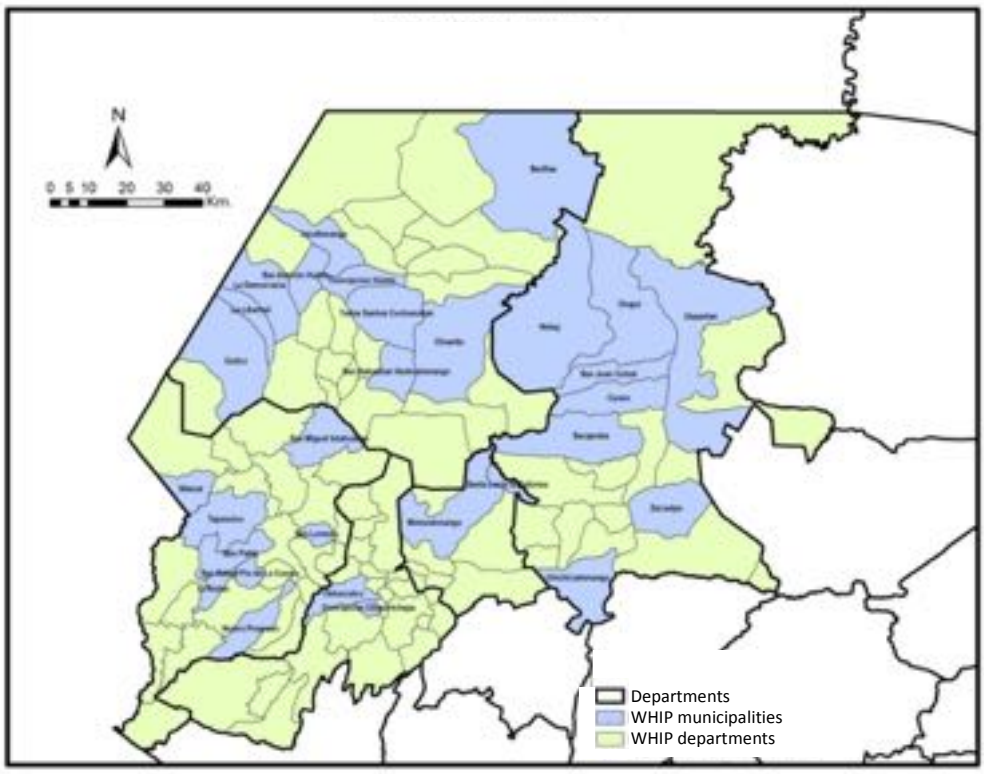
Municipality	Department	2013 Population
Cunén	Quiché	37,473
Nebaj	Quiché	88,542
Sacapulas	Quiché	48,428
Uspantán	Quiché	69,462
Chajul	Quiché	55,438
San Juan Cotzal	Quiché	28,692
Zacualpa	Quiché	49,258
Chichicastenango	Quiché	152,833
San José el Rodeo	San Marcos	17,295
San Rafael Pie de la Cuesta	San Marcos	15,978
San Lorenzo	San Marcos	12,198
San Pablo	San Marcos	54,659
Tajumulco	San Marcos	58,409
Nuevo Progreso	San Marcos	37,954
Sibinal	San Marcos	16,585
San Miguel Ixtahuacán	San Marcos	37,303
Jacaltenango	Huehuetenango	45,458
Chiantla	Huehuetenango	95,986
San Sebastián Huehuetenango	Huehuetenango	29,930
Todos Santos	Huehuetenango	36,009
Santa Cruz Barrillas	Huehuetenango	147,314
Cuilco	Huehuetenango	60,306
Concepción Huista	Huehuetenango	19,154
San Antonio Huista	Huehuetenango	18,641
La Libertad	Huehuetenango	39,048
La Democracia	Huehuetenango	45,201
Momostenango	Totonicapán	132,854

[2] The term Zone of Influence (ZOI) is used by the FTF Program to refer to that Program's zone of influence. This report will also use the term ZOI for comparability.

Table 1.1: Priority WHIP Municipalities

Municipality	Department	2013 Population
Santa Lucía La Reforma	Totonicapán	23,231
San Juan Ostuncalco	Quetzaltenango	53,687
Concepción Chiquirichapa	Quetzaltenango	18,437
Total		1,545,765

Figure 1.1: WHIP Priority Municipalities



1.3. The WHIP Evaluation

1.3.1. *Objective and Evaluation Questions*

The objective of the evaluation is to examine program results at the population level and to estimate the program's impact. The primary research questions are as follows:

I. What changes are there in key indicators at the population level in the WHIP ZOI?
II. What are the effects of the WHIP Program on key indicators at the population level in the WHIP ZOI?

Key results include poverty, consumption, health, nutrition, use of maternal and child health services, family planning, and other health and nutrition-related results. Changes will be examined twice: at the program's midpoint – from 2013 to 2015 – and over the life of the program – from 2013 to 2017. Research questions I and II require additional disaggregation, since each program under study covers different populations within the ZOI. In particular, section 1.2.2 reflects, the target population of the health and nutrition program includes the entire ZOI; however, the RVCP targets only members of households with a producer participating in the RVCP. These direct beneficiaries make up 4% of all households in the ZOI. RVCP activities are also expected to have indirect effects on non-participating households (Indirect Beneficiaries) who reside in the same communities where RVCP Direct Beneficiary households are located. These indirect beneficiaries[3] constitute approximately 28% of the total population in the ZOI.

Consequently, we can identify three distinct groups within the ZOI:

- Group 1: RVCP member households, designated as "RVCP Direct Beneficiaries"
- Group 2: RVCP non-member households located in RVCP areas, designated as "RVCP Indirect Beneficiaries"
- Group 3: Households located outside the RVCP areas, designated as "Health Only"

The first two groups are, by definition, direct or indirect participants in the RVCP, but in addition they are part of the target population of the health and nutrition program. Therefore, they will be exposed to the *integrated* RVCP and health and nutrition program. The third group, Health Only, is exposed to the health and nutrition program alone. This unique design permits investigation of secondary research questions:

I.1. What changes are present on key outcomes at the population level in the three groups constituting the ZOI?
II.1. What has been the impact of the integrated program (RVCP and health and nutrition) on key results at the population level among RVC Direct Beneficiaries and RVCP Indirect Beneficiaries?
II.2. What has been the impact of the health and nutrition program, acting without the RVCP, on key outcomes at the population level in the Health Only domain?
II.3. Is the integrated program (RVCP and health and nutrition) more effective than the health and nutrition program alone at improving key outcomes at the population level?
II.4. Does the RVCP have indirect effects on the non-member households located in RVCP areas? If so, what are these effects?

Question II.3 looks at the relative effectiveness of the integrated program compared to a more traditional apporach, while question II.4 examines the external effects of the RVCP.

1.3.2. *General Evaluation Design*

The performance evaluation has two components: a performance evaluation and an impact evaluation.

[3] To operationalize the term "communities", INE census tracts are used. Thus, the RVCP domains in the EMEPAO 2013 include the set of census tracts where at least one RVCP member household is located.

Performance Evaluation: The performance evaluation seeks to answer evaluation questions I and I.1. To that end, it will examine the changes on key indicators at the population level from 2013 to 2015 (midpoint) and from 2013 to 2017 (end of the program). Indicators include:

- Key WHIP program indicators
- Indicators required by the FTF Program
- Additional indicators that measure household, health and nutrition conditions, as well as use of maternal and child health and family planning services

To measure these indicators, both household and individual surveys will be undertaken, using representative samples of the ZOI population and the three subpopulations of interest that constitute it. Surveys will be conducted in 2013, 2015, and 2017. Surveys will also include community and health service modules to measure the characteristics of communities where the ZOI population lives as well as the dimensions of available health services. As the first in a series of three household surveys, the function of EMEPAO 2013 is to establish a foundation from which to examine changes on outcomes of interest. Chapter 2 of this report offers additional details related to the objectives, domains, sample design, sample size, questionnaires, and survey instruments, as well as other aspects of survey organization and implementation.

Impact Evaluation: The impact evaluation seeks to answer evaluation questions II, II.1, II.2, II.3, and II.4. The evaluation strategy is based on a quasi-experimental, differences-in-differences design, with a matched comparison group and fixed-effect controls. This design generates an estimate of program impact, comparing changes in the program group between the baseline (2013) and follow-up (2015 or 2017) to changes in the comparison group over the same period, and controlling for other differences between the two groups. The validity of the impact estimates depends on identifying an appropriate comparison group.

Propensity Score Matching was used to identify a group of census tracts located in Western Highlands municipalities that are not a part of the WHIP intervention, but are demographically similar to the census tracts selected for the survey.

It is important to note, however, that due to the quasi-experimental nature of the impact evaluation, additional variables must be included in the impact estimation models to control for differences that persist after the matching process. Further, to control for unobservable differences between the groups, analysis will include fixed-effect controls at the household level. To that end, surveys must be conducted longitudinally within households. However, if conntrolling for unobservable differences at the community level is deemed sufficient, a community longitudinal design may be considered.

In sum, to implement the difference-in-differences design, two matched comparison groups were identified using census data at the census tract level, and it will be necessary for household surveys performed in 2013, 2015, and 2017 to be longitudinal at the household level, or minimally, at the census tract level.

2. Survey Methodology

This chapter briefly describes the most important methodological aspects of EMEPAO 2013, such as criteria used to determine the target population and study domains; the sample size; the data collection instruments used; operational aspects of fieldwork, response rates and nonresponse.

2.1. The Study Population

The target population for the survey includes the households and individuals located in the area of influence for the Rural Value Chain Project (RVCP) and health component of WHIP, which as mentioned previously, covers 30 municipalities. Given that WHIP components are aimed at distinct populations, the Zone of Influence –ZOI– was divided into the following study domains:

Domain	Identification	Households have the following characteristics:
1	RVCP Direct Beneficiaries	At least one household member is a member of an RVCP association and also benefits from the health program component.
2	RVCP Indirect Beneficiaries	Households that are located in the same census tracts as the RVCP member households. They benefit from the health program component, but no household member participates directly in the RVCP component.
3	Health Only	Households located outside RVCP areas (i.e. outside of census tracts belonging to domain 1 and 2) that only benefit from the health program component.
Zone of Influence	ZOI	Domains 1, 2, and 3 together

In addition, and for impact-evaluation purposes, two groups of households comprising comparison groups were identified:

Domain	Comparison households for:
4	Domains 1 and 2
5	Domain 3

The sample size was designed to provide precise estimates of key outcomes for the performance evaluation and impact evaluations – these outcomes include poverty, health, and nutrition indicators, both in the target population overall and in the three ZOI domains previously defined (domains 1, 2, and 3). The sampling framework for the survey was developed based on the Master Sampling Framework of the National Statistics Institute (INE), developed by INE using data from the 2002 Population Census. Census tracts for the 5 departments to which the 30 WHIP priority municipalities belong were used as primary sampling units. Tracts in the 30 municipalities are the combination of

domains 1, 2, and 3, while remaining tracts represent the pool from which the comparison group was chosen.

2.2. Sample Design

The sample size was largely determined by applying the formula proposed in the FTF project guide (*Volume 8 Population Based Survey Instrument for FTF, Final October 2012*). To arrive at this estimate, a 0.05 significance level (α), a 0.20 statistical power (β), a 2.0 design effect (DEFF), a 0.3 correlation (r) between the baseline and the follow-up, and the initial and target values established for the key WHIP indicators were assumed. The resulting sample size – the number of census tracts to be selected and households to be surveyed, was as follows:

Domain	No. of Census Tracts	No. Households/ Tract	No. Households
1 and 2	95	40 (20 per domain)	3,800
3	37	30	1,100
Total	132	----	4,900

In order to increase efficiency, the sample size for both comparison groups was designed to be proportionate to the sample sizes estimated for their respective program comparison domains. The number of census tracts for domain 4 (the comparison group for domains 1 and 2), was estimated at 78 (with 1,560 households) and the total for domain 5 (the comparison group for domain 3) was estimated at 30 (with 900 households). Annex 2 contains additional information on the sampling framework, sample size estimates, and other methodological aspects of the sample design.

2.3. Data Collection Instruments

To design the questionnaires used in the survey, the researchers used questions that had been validated and standardized in other population-based surveys in Guatemala, such as: the Encuesta Nacional de Salud Materno Infantil 2008 (National Maternal and Child Health Survey –ENSMI in Spanish, which corresponds to the DHS) and the Encuesta Nacional de Condiciones de Vida 2011 (Living Standards Measurement Survey – ENCOVI in Spanish). Further, indicators included in Feed the Future (FTF) M&E guidance documents, such as the Household Hunger Scale (HHS) and the Women's Empowerment in Agriculture Index (WEAI) were also included.

The questionnaires and their contents are described below:

- **Household Questionnaire**: This questionnaire sought to gather information on the households in the study and their members. Sections include: household members, housing and household characteristics, food insecurity, inclusion in agricultural cooperatives, mobility, participation in social assistance programs, home food gardens, and anthropometry.
- **Expenditure and Consumption Questionnaire:** This questionnaire aimed to generate sufficient information to estimate households' consumption and expenditure levels.

Expenditure and consumption items include: household expenses; service expenses; fuel and energy expenses; donations received by the household; household kitchen utensils; recreational items; other household item purchases; vehicles; expenditures during the week, month, and 12-month periods preceding to the survey; health expenses for women from 12 to 49 years old; health expenses for other household members, and education expenses. It also included data on participation in and benefits received from social assistance programs; data on agricultural assets; livestock assets, production and and expenses; animal products and sub-products; agricultural tools; agricultural/ livestock facilities, and information on any formal technical production assistance received.

- **Empowerment Questionnaire: S**ections in in this questionnaire include: women's roles in decisionmaking regarding production and income generation; access to production capital and goods; access to credit and micro-credit; individual leadership and influence in the community; decision making; motivation for decision making and time allotment.
- **Questionnaire for Women:** This questionnaire sought to gather information on the reproductive histories of female interviewees; history of births; present pregnancy, and contraceptive practices; knowledge of health risks, as well as information on pregnancy, post-natal care, and children's immunization. It also included questions on children's health and nutrition; women's civil status and relationship with their partners, fertility preferences, and dietary diversity.
- **Community Questionnaire:** This questionnaire aimed to gather information on the basic characteristics of survey communities; the type of road infrastructure; public transportation; sanitation systems and refuse disposal; presence of social development programs and organizations; presence of schools and health services.
- **Health-Service Questionnaire:** This questionnaire sought to gather information on the basic characteristics of the health facilities that provide services to the surveyed population: the type of facility; the services they provide; basic infrastructure; availability of basic equipment and medications; stockouts, and other problems affecting facilities.

2.4. Response Rates

Out of 4,107 households selected for the sample, interviews were completed in 97.6% of cases, with minimal differences between response rates for RVCP Direct Beneficiaries, RVCP Indirect Beneficiaries and Health Only households. Just 0.2% of households had no adult residents present (i.e. child-headed households). The refusal rate was 0.8%. As can be seen in Table 2.1, both eligibility and survey participation were universally high.

Table 2.1 Household Interview Results

Household percentage distribution by results of household interviews

Interview Results	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Complete	96.7	98.1	97.8	97.6
No adults present	0.2	0.2	0.3	0.2
Absent	1.3	0.7	0.9	0.9
Rejection	0.8	0.7	0.9	0.8
Not a home or vacant	0.3	0.1	0.2	0.2
Destroyed house	0.1	0.0	0.0	0.0
House not found	0.1	0.0	0.0	0.0
Disabled individual	0.0	0.3	0.0	0.1
Others	0.5	0.0	0.0	0.2
Total	100.0	100.0	100.0	100.0
Number of cases	1,307	1,780	1,020	4,107

For the Expenditure and Consumption Questionnaire, complete information was gathered in 99.1% of households, with a refusal rate of 0.6%. For the Women's interview, complete information was obtained for 95.2% of those in the sample; refusals for this questionnaire reached 1.8%, and 2.1% of women were absent at the time of the interview (see Tables 2.2 and 2.3).

Table 2.2. Expenditure and Consumption Interview Results

Percentage distribution of households by expenditure interview result

Interview Results	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Complete	99.1	99.3	98.7	99.1
Absent	0.3	0.1	0.5	0.3
Rejection	0.6	0.6	0.8	0.6
Others	0.0	0.1	0.0	0.0
Total	100.0	100.0	100.0	100.0
Number of cases	1,264	1,746	997	4,007

Table 2.3. Women's Interview Results

Percentage distribution of women's interviews by interview result

Interview Results	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Complete	95.8	95.2	94.6	95.2
Absent	1.9	2.0	2.5	2.1
Rejection	1.7	1.8	2.0	1.8
Partially Complete	0.0	0.0	0.0	0.0
Disabled or sick woman	0.6	0.9	1.0	0.8
Others	0.0	0.1	0.0	0.1
Total	100.0	100.0	100.0	100.0
Number of cases	2,022	2,388	1,435	5,845

Response rates for the Empowerment Questionnaire were 92.5% among men and 96.7% among women eligible to participate. There were small variations in response rates across the intervention domains, both for men and women. See Table 2.4.

Table 2.4. Empowerment Interview Results

Percentage distribution of men and women by empowerment interview result

Interview Results	RVCP Direct Beneficiaries		RVCP Indirect Beneficiaries		Health Only		ZOI	
	Men	Women	Men	Women	Men	Women	Men	Women
Complete	94.4	97.2	91.0	96.6	90.6	95.7	92.3	96.7
Absent	3.8	1.5	5.2	1.3	5.5	2.8	4.7	1.6
Rejection	1.3	1.1	2.2	1.5	2.7	1.2	1.9	1.3
Others	0.5	0.1	1.6	0.6	1.2	0.3	1.1	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of cases	626	710	690	855	256	323	1,572	1,888

Likely because several qualified informants were identified in each community and the questionnaire was relatively brief, all community interviews attempted were completed. This included 796 community interviews in all census tracts constituting the ZOI sample, 583 of them in the RVCP domain and 213 in the Health Only domain.

Interviews were completed in a total of 156 health facilities identified in the ZOI. These included 119 facilities in the RVCP domain and 37 facilities in the Health Only domain.

Annex 3 shows the average duration of interviews by questionnaire type.

3. WHIP Key Indicators

One of the principal objectives of EMEPAO 2013 is to obtain estimates on key indicators established by USAID/Guatemala to monitor WHIP. Tables 3.1, 3.2, and 3.3 show estimates for the thirteen Mission-defined key WHIP indicators from the baseline survey. Annex 4 contains estimates for all indicators required by the Feed the Future initiative for monitoring its programs.

Table 3.1. Key WHIP Indicators: Prevalence of Poverty and Consumption Expenses Per Capita

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI	No. of Households
Prevalence of poverty: Percentage of individuals living below the poverty line:					
13.18 Quetzales per day, per capita	23.8	25.1	27.7	27.0	3,969
Type of household					
Adult female and male	23.9	26.4	28.5	27.9	3,436
Adult male only	12.9	5.1	13.0	10.7	68
Adult female only	21.0	14.7	22.0	20.5	464
Child no adults	--	0.0	--	0.0	1
27.17 Quetzales per day, per capita	70.9	71.8	77.6	76.2	3,969
Type of household					
Adult female and male	71.7	74.3	78.7	77.6	3,436
Adult male only	22.3	50.5	59.3	56.3	68
Adult female only	53.9	50.6	68.6	64.9	464
Child no adults	--	100.0	--	100.0	1
Consumption expenses, per day, per capita, average (Quetzales 2013)	25.06	24.57	22.36	22.90	3,969
Type of household					
Adult female and male	24.71	23.66	21.76	22.25	3,436
Adult male only	75.69	37.40	43.00	41.77	68
Adult female only	30.38	31.81	26.24	27.40	464
Child no adults	--	21.92	--	21.92	1
Consumption expenses, per day, per capita, average (USD 2010 constant)*	4.04	3.96	3.61	3.69	3,969
Type of household					
Adult female and male	3.98	3.82	3.51	3.59	3,436
Adult male only	12.20	6.03	6.93	6.74	68
Adult female only	4.90	5.13	4.23	4.42	464
Child no adults	--	3.53	--	3.53	1
Number of households	1,252	1,733	984	3,969	

* The conversion factor is 0.16123638 USD 2010 per Quetzal 2013.

Table 3.2. WHIP Key Indicators: Nutrition, Fertility, and Health

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI	No. of Cases
Prevalence of low height-for-age in children under 5 years old (chronic malnutrition, stunting)	60.4	65.3	68.3	67.4	3,312
Sex					
Male	62.4	67.0	68.0	67.6	1,664
Female	58.2	63.5	68.6	67.2	1,648
Number of cases	1,030	1,448	834	3,312	
Prevalence of low weight-for-age in children under 5 years old (global malnutrition, underweight)	12.0	14.2	18.3	17.3	3,312
Sex					
Male	12.7	12.5	19.5	17.8	1,664
Female	11.3	15.8	17.1	16.7	1,648
Number of cases	1,030	1,448	834	3,312	
Total Fertility Rate (TFR)	3.8	4.1	4.0	4.0	5,566
Number of cases	1,936	2,273	1,357	5,566	
Prevalence of use of modern family planning methods	41.0	40.2	38.6	39.0	3,502
Number of cases	1,176	1,478	848	3,502	
Percentage of births attended by a physician or a nurse	30.4	39.4	34.7	35.6	3,362
Number of cases	1,044	1,477	841	3,362	
Prevalence of exclusive breastfeeding in infants under 6 months old	66.0	56.0	68.7	66.3	318
Sex					
Male	64.3	68.1	84.2	80.7	163
Female	67.7	42.1	50.0	49.1	155
Number of cases	113	123	82	318	
Percentage of children from 12 to 59 months old who received three doses of pentavalent vaccine	98.4	97.3	95.2	95.7	2,608
Number of cases	791	1,146	671	2,608	
Percentage of women from 15 to 49 years old who had at least 4 prenatal checkups during their last pregnancy in the 5 years prior to the survey	74.9	76.9	75.8	76.0	2430
Number of cases	775	1,064	591	2,430	

Table 3.3. WHIP Key Indicators: Health Facilities

	ZOI	No. of Cases
Percentage of MSPAS facilities that achieve minimum standards for basic infrastructure	25.8	159

4. General Characteristics of WHIP Households and Population

This section describes the socio-demographic characteristics of survey households and their members, as well as the physical condition of households included in the study. This analysis includes domains in the ZOI only. All indicator values were estimated using sample weights.

4.1. Demographic Characteristics of the Population

A total of 4,007 households constitute the ZOI analysis sample. Of these households, 32% (1,264) pertain to RVCP Direct Beneficiaries; 44% (1,746) to RVCP Indirect Beneficiaries, and 25% (997) to the Health Only domain. A total of 23,784 individuals live in study households in the ZOI: 8,115 in RVCP Direct Beneficiary households; 9,812 in RVCP Indirect Beneficiary households, and 5,857 in the Health Only domain.

Most households (86.6%) reported having at least one male and one female adult resident; however, nearly 14% of households in the RVCP Indirect Beneficiary and Health Only domains are single-parent households with a female head of household, a ratio that is considerably higher than that in the RVCP Direct Beneficiaries group (see Table 4.1).

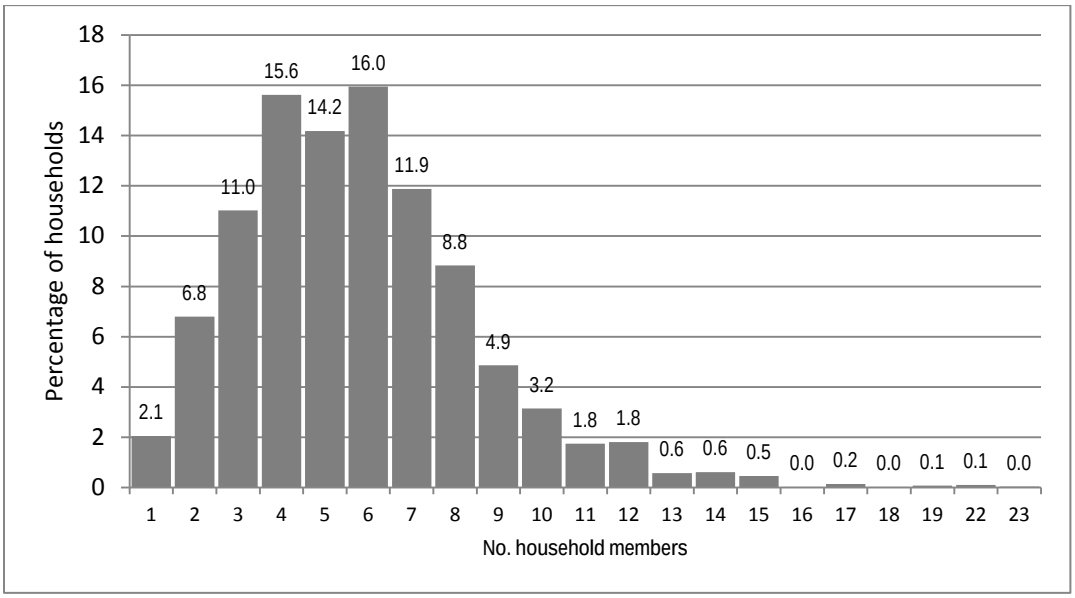
Table 4.1. Household Distribution by Type

Number of households and individuals, and percentage of households by type of household

	RVCP Direct Beneficiaries		RVCP Indirect Beneficiaries		Health Only		ZOI	
	Number	%	Number	%	Number	%	Number	%
No. of households in the sample	1,264	32.0	1,746	45.0	997	25.0	4,007	100.0
No. of individuals in the sample	8,115	34.1	9,812	41.3	5,857	24.6	23,784	100.0
Type of household								
Adult female and male	1,170	92.6	1,463	83.8	837	84.0	3,470	86.6
Adult male only	17	1.3	37	2.1	14	1.4	68	1.7
Adult female only	77	6.1	245	14.0	146	14.6	468	11.7
Child no adults	0	0.0	1	0.0	0	0.0	1	0.0
Total	1,264	100.0	1,746	100.0	997	100.0	4,007	100.0

Figure 4.1 shows the distribution of households according to the number of household members. This number ranges from one to fifteen individuals; some households are even larger. However, most – approximately 70%– include between 3 and 7 individuals. This distribution is very similar to the one shown by ENSMI 2008 for the population of Guatemala's Northwestern region.

Figure 4.1. Percentage distribution of households, by household size.



As shown in Table 4.2, ZOI households include an average of 6 individuals. RVCP Direct Beneficiary households are slightly larger than RVCP Indirect Beneficiary households; they have, on average, one additional member. This result is consistent with ENSMI 2008 findings, which report an average household size of 5.9 individuals in Guatemala's Northwestern region, and with results from the ENCOVI 2011, which reported an average of 6.1 individuals per household in rural households living in poverty.

Demographic composition by age sub-groups was very similar across the three study groups. On average, households are composed of 2.5 to 3.1 adults from 18 to 64 years old. Slightly more than 56% of households reported having children under 5 years old; 77.7% reported having children and adolescents from 5 to 17 years old and, the vast majority, 91.8%, stated that there was at least one reproductive-age woman in the household. The most significant variance occurs for adults over the age of 65 living in households, whose prevalence in notably higher in RVCP Direct Beneficiaries households. ZOI households are young: the average age of household members in the three groups is 23 years.

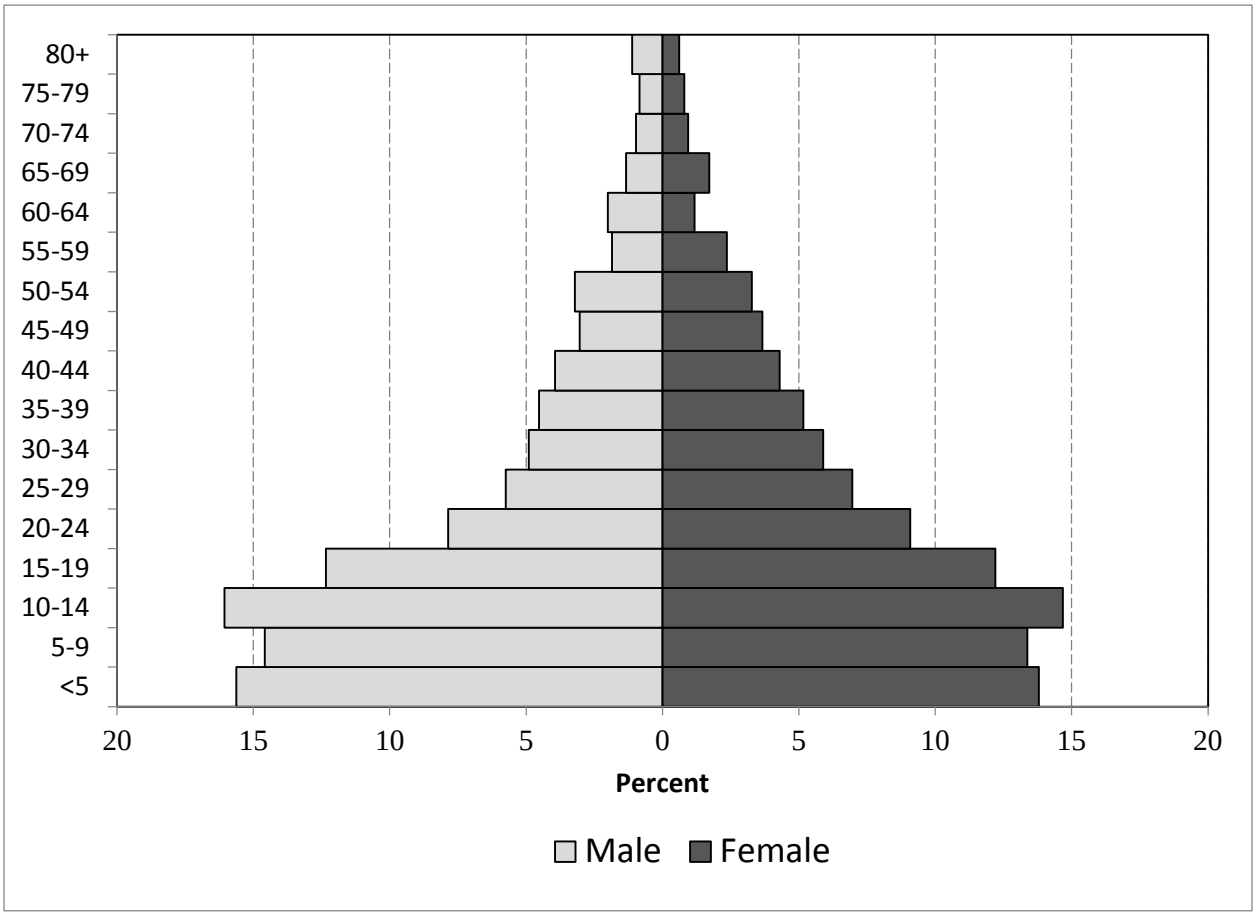
In 76% of ZOI households the head of household self-identified as indigenous. This ratio is significantly lower in the RVCP Indirect Beneficiaries group and higher in the Health Only group. The vast majority of households, 77.4%, are located in rural areas.

Table 4.2. Household Socio-Demographic Composition

Characteristics	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Household demographics				
Average number of individuals in the household	6.5	5.6	5.8	5.8
Average number of adults from 18 to 64 years old in households	3.1	2.5	2.6	2.6
Percentage of households with children under 5 years old	55.1	57.2	56.6	56.7
Percentage of households with children from 5 to 17 years old	81.4	77.6	77.6	77.7
Percentage of households with females from 15 to 49 years old	89.2	90.5	92.2	91.8
Average age of household members	24.4	22.4	22.5	22.5
Percentage of households with elderly adults, aged 65 or over	22.6	16.6	17.9	17.8
Average age of male or female head of household	49.3	43.4	43.7	43.8
Number of cases	1,264	1,746	997	4,007
Ethnic Group				
Indigenous	71.7	63.5	79.5	75.8
Non-indigenous	28.3	36.5	20.5	24.2
Total	100.0	100.0	100.0	100.0
Area of residence				
Urban	20.1	17.6	24.2	22.6
Rural	79.9	82.4	75.8	77.4
Total	100.0	100.0	100.0	100.0
Number of cases	1,264	1,746	997	4,007

Figure 4.2 shows the ZOI population pyramid, by age and sex. It indicates that the percentage of males and females in each of the five-year age groups is very similar. Consistent with ENSMI 2008 findings, the youngest age groups are overrepresented in the population. Approximately 70% of males and females in the ZOI are under 29 years old (ENSMI reported a similar percentage: 68.1%).

Figure 4.2. Population pyramid for the Zone of Influence (ZOI).



An estimated 63.1% of household members aged 15 or over reported being married or living in a consensual union; 3.1% reported that they were divorced or separated; 4.2% reported being widowed, and approximately 30% said that they were single at the time of the interview. Table 4.3 does not show any significant variations among the three study groups.

Table 4.3. Civil Status

Percentage distribution of household members aged 15 or over, by civil status

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Married or in a consensual union	62.1	64.1	62.8	63.1
Divorced or separated	2.6	3.2	3.1	3.1
Widowed	3.6	4.1	4.3	4.2
Single	31.7	28.5	29.8	29.6
Total	100.0	100.0	100.0	100.0
Number of cases	4,839	5,373	3,249	13,461

4.2. Education Characteristics of the Population

The education level of the WHIP target population serves as a mediator for program impact. In addition, it facilitates identifying the priority areas for program intervention.

Head of households' average schooling level is almost 3 years, which is similar to the ENCOVI 2011 findings for rural populations living in poverty, which reported an average schooling level of 2.2 years. Table 4.4 shows that 36.1% of ZOI male and female heads of households do not have any formal education and that slightly more than half (54.6%) have some level of primary education. Only 2.5% have completed secondary school. The three intervention groups show similar results on this indicator.

Table 4.4. Education Characteristics of Male and Female Heads of Households

Years of schooling and percentage of heads of household by education level

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Heads of household's average years of schooling	2.9	3.3	2.7	2.9
Heads of household's education level				
No education	33.7	35.4	36.3	36.1
Incomplete primary	45.5	38.1	43.2	42.2
Complete primary	12.6	14.1	12.2	12.6
Incomplete secondary	3.9	5.4	4.6	4.7
Complete secondary	2.9	4.6	2.0	2.5
University	0.9	2.1	1.2	1.4
Literacy	0.4	0.4	0.5	0.5
Total	100.0	100.0	100.0	100.0
Number of cases	1,264	1,746	997	4,007

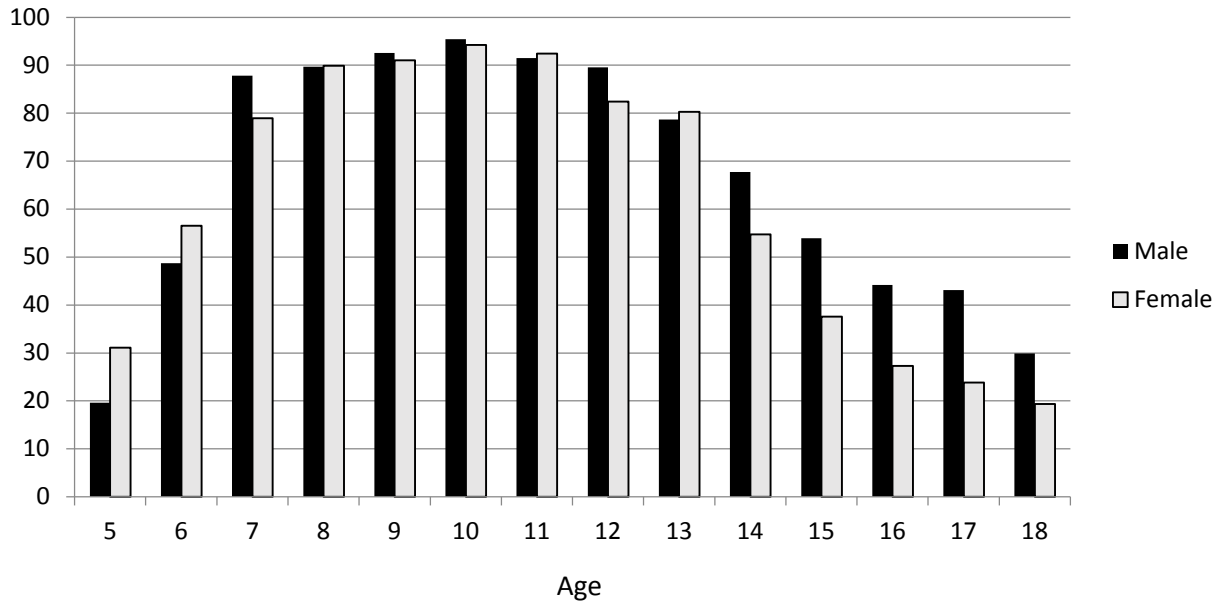
Women 18 years and older have achieved lower levels of school attainment than their male counterparts. This trend held in all three groups comprising the ZOI. As Table 4.5 shows, 44.3% of women in the ZOI have not received any formal education, compared with 26.3% of men. An estimated 55.8% of men had any primary education, while 42.5% of women did, and the percentage of women 15 years or over who do not know how to read and write is nearly double the percentage among men. Table 4.5 also shows that adults in RVCP Direct Beneficiary households possess a slightly higher level of schooling than those in other domains.

Table 4.5. Education Level

Percentage distribution of household members aged 18 or more, by education level

	RVCP Direct Beneficiaries		RVCP Indirect Beneficiaries		Health Only		ZOI	
	Male	Female	Male	Female	Male	Female	Male	Female
No education	23.1	40.3	26.7	42.7	26.4	44.9	26.3	44.3
Incomplete primary	35.7	28.8	35.2	31.4	40.1	31.4	38.9	31.3
Complete primary	17.4	12.6	17.0	11.9	16.9	11.0	16.9	11.2
Incomplete secondary	13.7	10.7	11.6	7.7	9.9	7.2	10.4	7.4
Complete secondary	7.4	5.7	6.8	3.7	5.4	4.4	5.7	4.3
University	2.3	1.6	2.5	2.4	1.2	0.8	1.5	1.2
Literacy	0.4	0.2	0.3	0.2	0.2	0.3	0.2	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of cases	1,958	2,198	2,072	2,532	1,244	1,538	5,274	6,268
Percentage of household members aged 15 or over who do not know how to read and write	18.3	36.2	21.6	38.9	20.2	40.7	20.4	40.2
Number of cases	2,300	2,546	2,469	2,905	1,473	1,778	6,242	7,229

Figure 4.3. Percentage of children and adolescents who attend school, by age and sex.



Analysis of school attendance by children under 18 reveals interesting patterns. Figure 4.3 shows that most boys and girls in the ZOI start attending school when they are six years old. School attendance hovers around 90% through 11 years of age. When children turn 12, the rate of school attendance begins to decrease uniformly across study domains. There is a higher desertion rate among girls than among boys, and the gender difference reaches 15% by age 15 (see Table 4.6).

Analysis shows that school attendance is slightly higher among boys and girls in the RVCP Direct Beneficiaries domain compared to the other two domains in the ZOI. Significant gaps persist between males and females in every domain.

Table 4.6. Presently Studying

Percentage of children and young people from 5 to 18 years old who are presently studying

	RVCP Direct Beneficiaries		RVCP Indirect Beneficiaries		Health Only	
	Male	Female	Male	Female	Male	Female
Age in years						
5	24.5	21.4	23.1	16.6	18.6	36.1
6	62.8	69.1	49.2	57.2	48.1	55.8
7	74.2	90.8	86.9	79.0	88.4	78.5
8	93.6	94.4	88.0	92.2	90.0	89.1
9	94.5	94.7	93.8	95.4	92.2	89.6
10	98.0	94.7	95.2	94.1	95.4	94.2
11	93.1	95.1	93.0	95.5	91.1	91.6
12	88.9	87.4	88.9	90.4	89.7	80.7
13	87.6	76.7	82.4	81.0	77.4	80.3
14	80.3	60.7	57.4	55.9	69.5	54.1
15	69.3	44.9	44.1	43.2	56.5	35.9
16	53.6	32.8	42.1	31.1	44.3	26.1
17	39.9	32.7	39.8	27.7	44.3	22.5
18	42.4	25.8	30.3	18.5	29.3	19.3
Total	71.8	65.3	66.9	63.8	67.9	62.6
Number of cases	1,526	1,542	1,966	1,944	1,165	1,171

4.3. Housing Characteristics

4.3.1. Type of Housing Materials

Tables 4.7 to 4.9 detail housing building materials and other selected household characteristics.

In the ZOI, 48.1% of houses have earth or sand floors, 37.8% have concrete flooring, and 13.6% have floors covered with ceramic or granite tiles (see Table 4.7). Nearly 50% of households in the RVCP Direct Beneficiaries domain have concrete flooring. This percentage was significantly higher than for the other two groups, and even higher than the result reported by ENSMI 2008: 39.6%.

The most common roof material, in 76.1% of houses, was zinc or metal sheeting, followed by concrete and reinforced concrete roofs (nearly 12%). RVCP (Direct and Indirect) Beneficiaries show similar

results on this variable, whereas in the Health Only domain clay or ceramic roof tiles are somewhat more common.

The most widely used building materials for walls in the ZOI are cinder blocks and adobe, followed by sawn timber. Ninety-six percent of houses in the Zone of Influence have walls built out of one of these three materials, with some minor variation among groups. In the RVCP domains, cinder blocks are most common, while in the Health Only domain adobe is nearly as frequently used.

Table 4.7. Building materials used for housing

Household percentage distribution by type of floor, roof, and wall materials

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Household percentage distribution by flooring materials				
Earth or sand	38.9	50.5	47.8	48.1
Concrete	47.8	35.7	38.0	37.8
Ceramic tile	8.2	9.3	7.2	7.7
Cement or granite tile	4.7	4.3	6.4	5.9
Other	0.4	0.2	0.6	0.5
Total	100.0	100.0	100.0	100.0
Number of cases	1,264	1,746	997	4,007
Household percentage distribution by roofing materials				
Corrugated zinc or metal sheeting	81.3	82.1	74.2	76.1
Concrete, reinforced concrete or ceramic	12.7	11.8	11.9	11.9
Clay roof tiles	2.1	3.5	4.9	4.6
Ceramic roof tiles	3.6	2.3	8.3	6.9
Other	0.3	0.3	0.6	0.5
Total	100.0	100.0	100.0	100.0
Number of cases	1,264	1,746	997	4,007
Household percentage distribution by wall materials				
Cinder block	48.0	41.2	39.5	40.1
Adobe or covered adobe	28.1	31.7	36.5	35.2
Sawn timber	21.9	23.9	19.6	20.6
Corrugated zinc sheets	0.9	1.9	1.4	1.5
Cement, limestone or brick	0.3	0.5	1.5	1.2
Other	0.7	0.8	1.6	1.4
Total	100.0	100.0	100.0	100.0
Number of cases	1,264	1,746	997	4,007

Eighty percent of households in the Zone of Influence have between one and two bedrooms. Half of households have only one bedroom, except for RVCP Direct Beneficiaries who reported a slightly higher

number on average (Table 4.8). Given household sizes, these results suggest considerable overcrowding.

Table 4.8. Number of Bedrooms

Household percentage distribution by number of bedrooms

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
No. of bedrooms				
1	38.8	52.3	49.1	49.6
2	33.7	30.7	30.7	30.8
3 or more	27.5	16.9	20.2	19.7
Total	100.0	100.0	100.0	100.0
Number of cases	1,262	1,743	995	4,000

4.3.2. Household Services

Analysis showed that 82.7% of ZOI households have electricity (Table 4.9), a result that is consistent with ENSMI 2008 reports (84.2%). Significant variation was present between the groups, especially betwee RVCP Indirect Beneficiaries and the Health Only group, where the difference reaches 10 percentage points.

Approximately 76% of ZOI households get their drinking water from the public grid or from an aqueduct; 7.4% receive piped water from another source, and the remaining 17% obtain drinking water by other means. Results for the groups were similar, although a higher percentage of households in the Health Only domain reported obtaining drinking water from a public tap. Most households, almost 89%, stated that their water supply source is located inside their homes, with responses ranging from the public grid, indoor piping, a well on the property, or bottled water.

Most households boil, chlorinate, filter, or purify water with solar energy. A marginal percentage (~5%) use bottled water. Furthermore, the survey team observed that almost 80% of homes had a location with water and soap for hand-washing purposes.

Table 4.9. Household Services

Household percentage distribution by household services

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Percentage of households that have electricity	82.5	74.6	85.1	82.7
Household percentage distribution by main drinking water source				
Public grid or aqueduct	80.1	72.8	76.4	75.7
Another piped source	9.2	12.5	5.8	7.4
Bottled water	3.3	4.2	3.5	3.6
Mechanical or manual well	2.5	2.1	3.9	3.5
Unprotected spring	2.4	2.7	1.0	1.4
Public water faucet	0.3	0.0	5.4	4.1
Others*	2.3	5.7	4.0	4.3
Total	100.0	100.0	100.0	100.0
Number of cases	1,264	1,746	997	4,007
Percentage of households by the time it takes to obtain drinking water				
Source within the home	92.7	89.5	88.4	88.7
Less than 30 minutes	5.7	8.7	9	8.9
30 minutes or more	1.6	1.8	2.6	2.4
Total	100.0	100.0	100.0	100.0
Number of cases	1,264	1,746	997	4,007
Percentage of households that do not use bottled water but report appropriate treatment for drinking water**	96.5	95.0	93.9	94.2
Percentage of households where a location with water and soap for hand washing was observed	87.0	79.6	79.3	79.6
Number of cases	1,264	1,746	997	4,007

* River or ditch, protected spring, rainwater, public wash trough or tank, other homes, lake or stream

** Treatments include boiling, chlorinating, sieving, filtering, or solar water purification.

Table 4.10 indicates that approximately 95% of ZOI households have some type of toilet facilities; 59.2% use latrines, outhouses or a cistern; 23% reported having a toilet connected to the public sewage system; 7% have a toilet connected to a septic tank, and the rest have some other type of toilet or latrine facility. Even though sewage system coverage is low across the three study groups, households in the RVCP domains reported better conditions than those in the Health Only domain. ENSMI 2008 results indicate that at the national level only 10.7% of rural homes had toilet facilities connected to the sewage system.

Table 4.10. Toilet Facilities

Household percentage distribution by type of toilet facility

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Type of Toilet Facility				
Latrine/outhouse/cistern	50.8	51.5	61.8	59.2
Toilet connected to the sewage system	30.4	31.1	20.7	23.2
Toilet connected to a septic tank	10.7	7.3	6.9	7.0
Toilet connected somewhere else	4.1	3.5	3.6	3.6
Other*	1.7	0.8	3.6	2.9
No toilet facility	2.3	5.9	3.5	4.0
Total	100.0	100.0	100.0	100.0
Percentage of households that share a toilet facility	6.7	12.0	11.1	11.1
Number of cases	1,264	1,746	997	4,007

* "Other" includes: a toilet with an unknown connection, improved latrine with ventilation, unenclosed latrine, composting pit latrine.

Table 4.11 shows that 93.4% of households use firewood as the main cooking fuel. No differences were apparent among the three study groups. An estimated 65.1% of homes have a room used exclusively for cooking, which is in line with results from other studies.

Table 4.11. Cooking facilities and fuel sources

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Percentage of households that have a room used exclusively for cooking	67.1	65.9	64.8	65.1
Number of cases	1,264	1,746	997	4,007
Percentage Distribution by main fuel used for cooking				
Firewood	95.2	93.0	93.5	93.4
Propane gas	4.3	6.6	4.8	5.2
Charcoal or agricultural waste	0.3	0.4	0.8	0.7
Natural gas or biogas	.	.	0.4	0.3
Electricity	0.1	0.1	0.2	0.2
They do not cook	0.1	.	0.3	0.2
Total	100.0	100.0	100.0	100.0
Number of cases	1,264	1,746	997	4,007

A comparison of these results with reports from other surveys, such as ENSMI 2008, suggests that households in the ZOI may have been able to improve the hygiene conditions of their homes in recent years, as well as their access to basic services such as electricity and drinking water.

4.3.3. Household Assets

In addition to enumerating the equipment and the services available to households, it is also important to identify household assets, an indicator of quality of life. Having assets not only allows families to meet daily needs but also constitutes a mechanism through which the household can mitigate unexpected financial shocks.

Tables 4.12 and 4.13 clearly show that RVCP Direct Beneficiary households have greater durable asset availability compared to the households in the other two groups, particularly the Health Only domain.

Table 4.12 shows that the most popular entertainment items are television sets and radios (including tape recorders/players). Almost 50% of ZOI households report that they have at least one television set, and almost 60% reported having a radio or a tape recorder/player. DVD or CD players were also popular; up to 16% of households reported having these items. Consistent with the results in the previous tables, RVCP Direct Beneficiary households seem to exhibit improved economic conditions relative to the other groups.

Table 4.12. Household Items

Percentage of households that have durable items, by item

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Television set	56.9	46.6	50.0	49.4
Radio or tape recorder/player	65.7	48.2	61.0	58.3
DVD player	16.8	14.7	14.1	14.3
CD player	16.7	14.7	14.7	14.8
Desk or laptop computer	12.0	10.1	6.4	7.4
Printer	7.0	5.4	3.4	4.0
Videocassette player	6.0	4.7	3.4	3.7
Still camera	3.9	3.5	2.6	2.8
Video camera	1.9	1.3	1.4	1.4
Number of cases	1,252	1,733	984	3,969

In the ZOI, 7.2% of households reported having a pick-up truck. The estimate was highest for RVCP Direct Beneficiaries, where 15% of households have a pick-up. Bicycles and motorcycles are the most common kinds of vehicles in the other two domains. A small percentage of households, less than 2%, have a car (see Table 4.13).

Table 4.13. Vehicles

Percentage of households by type of vehicle owned

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Pick up	15.0	5.7	7.4	7.2
Motorcycle or scooter	8.7	7.5	6.2	6.6
Bicycle	6.8	5.9	13.0	11.3
Automobile or sedan	1.6	1.4	1.3	1.4
Station wagon	1.5	1.2	0.8	0.9
Truck	0.4	0.2	0.2	0.2
Number of cases	1,252	1,733	984	3,969

4.3.4. Home Ownership, Length of Residence and Mobility

Table 4.14 shows that nearly nine out of 10 households in the ZOI reported that they own the house in which they live. Almost all households (96%) in the RVCP Direct Beneficiaries domain own their homes, a higher percentage than that reported in the other two groups. A greater percentage of RVCP Indirect Beneficiary and Health Only households live in homes that have been assigned or loaned to them.

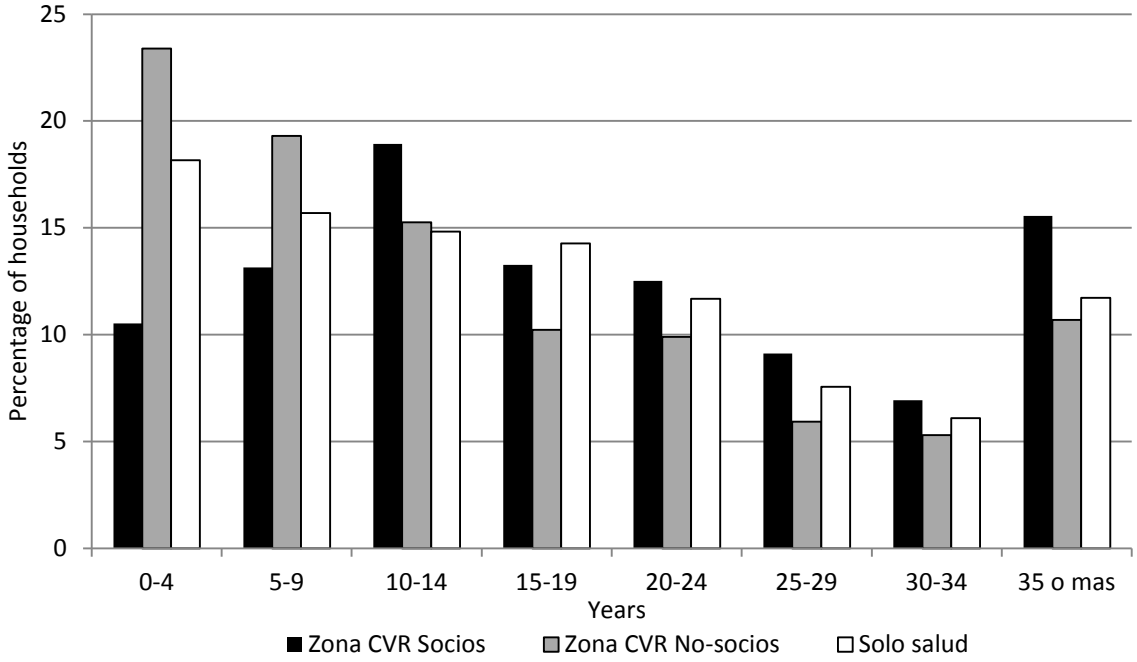
Table 4.14. Home Ownership

Percentage distribution of households by home ownership

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
The house is:				
Owned and fully paid for	96.0	87.2	87.7	87.8
Owned and being paid in installments	0.6	0.4	0.5	0.5
Rented	0.2	3.0	2.1	2.2
Assigned or loaned	3.2	9.3	9.7	9.5
Total	100.0	100.0	100.0	100.0
Number of cases	1,252	1,733	984	3,969

RVCP Direct Beneficiary households had, on average, lived for longer in their present home than those in the other groups. Almost 16% stated that they had been living in the same house for at least 35 years, while approximately 11% of respondents in the other groups reported a similar duration of residence. It is important to underscore that households in the RVCP Indirect Beneficiaries domain are the youngest in the sample (see Figure 4.4).

Figure 4.4. Duration of residence in present home.



Nearly 30% of households in the Health Only domain reported that someone in the household had left the community to seek temporary or permanent employment elsewhere during the 12 months prior to the survey. A similar percentage of households in the RVCP Indirect Beneficiaries domain reported work-related mobility, while a considerably lower percentage (20%) of RVCP Direct Beneficiaries did. Results suggest that households in the RVCP Direct Beneficiaries domain experience fewer motivating factors to leave their communities for employment purposes.

Asked if they had recently received cash remittances from family members living in a foreign country, 12.1% of households answered affirmatively, with no differences in groups (see Table 4.15).

Table 4.15. Mobility and Remittances

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Percentage of households in which some member left the community to seek temporary or permanent employment in the past 12 months.	20.6	27.0	29.8	28.9
Percentage of households that received a cash remittance from family members living in a foreign country in the past 3 months	12.6	13.8	11.6	12.1
Number of cases	1,264	1,746	997	4,007

4.4. Participation in Government Assistance Programs

An estimated 26.3% of households reported receiving benefits from the fertilizer program implemented by the Ministry of Agriculture, Livestock and Food (MAGA), and a similar percentage (25.7%) participate in the "Bono Seguro" program, a conditional cash transfer program implemented by the Ministry of Social Development. The rest of the programs studied had very limited presence in the ZOI. Table 4.16 shows that government program benefits are distributed among the three ZOI groups in a very similar way.

Table 4.16. Participation in Programs

Percentage of households that received benefits from government programs and/or projects

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Fertilizer Program	30.4	24.0	26.9	26.3
Bono Seguro	27.3	28.7	24.8	25.7
Bolsa Segura	5.9	5.3	3.6	4.0
Household food garden	1.1	0.5	0.3	0.4
Technological package	0.7	0.9	0.1	0.3
Others	1.9	0.9	1.2	1.1
Number of cases	1,264	1,746	997	4,007

4.5. Recognition of USAID Name and Logo

USAID appears to be more widely recognized by households in the RVCP Direct Beneficiaries domain than by the rest of the households. An estimated 11.7% of ZOI households had heard of USAID (or 'AID'). Almost twice as high a percentage of RVCP Direct Beneficiary households had heard the name. When recognition of the USAID logo was also considered, the percentage increased to 20.5% in the ZOI overall and 31.4% of RVC Direct Beneficiaries (see Table 4.17).

Among households that have heard of USAID or recognized its logo, 28.5% responded affirmatively when asked if USAID was currently providing services or support to the people in their community. This percentage was higher for RVCP Direct Beneficiaries, where it reached 37.3%.

Table 4.17. USAID Name and Logo Recognition

Percentage of households by level of USAID recognition

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Have heard about USAID or AID	20.6	15.0	10.4	11.7
Have heard about USAID or identify its logo	31.4	25.7	18.6	20.5
Number of cases	1,264	1,746	997	4,007
Report that USAID currently provides services or support to people in their community through one of its projects (among households who have heard of USAID or recognize its logo)	37.3	34.4	25.7	28.5
Number of cases	402	444	181	1,027

5. Consumption and Poverty

Reducing poverty and increasing consumption among households in the ZOI are two of the main objectives of the integrated program. Thus, EMEPAO included an extensive module to measure household consumption and expenditures. This chapter presents results on these key program indicators.

The principal measure used is the estimate of total yearly and daily household per capita consumption. Consumption estimates include cash expenses for goods and services consumed in the household and estimates of the cash value of services received, and of assets such as homes, plus the value of durable goods available in the household. The monetary value of goods produced in the household and any cash transfers from social assistance programs or remittances were also included. Consumption per capita is obtained by dividing the estimate of total household consumption by the number of individuals in the household. Adopting national norms, EMEPAO used the expenditures and consumption module developed for ENCOVI 2011. Similarly, algorithms to process consumption data were aligned with those used in the ENCOVI surveys from 2006 and 2011. These approaches permit direct comparison of EMEPAO results with those from official national surveys.

5.1. Prevalence of Poverty

Our poverty estimates were obtained using the following poverty lines:

1. The extreme poverty line established at 13.18 Quetzales (2013) daily per capita income.
2. The total poverty line established at 27.17 Quetzales (2013) daily per capita income.
3. USD 1.25 daily per capita income, in international United States Dollars (2005 Purchasing Power Parity), equivalent to 8.66 Quetzales (2013) daily per capita income.
4. USD 2.00 daily per capita income, in international United States Dollars (2005 Purchasing Power Parity), equivalent to 13.85 Quetzales (2013) daily per capita income.

USAID/Guatemala has approved the use of the first two poverty lines listed above, for WHIP monitoring and evaluation purposes. The third and fourth poverty lines listed are used by international agencies for inter-country comparisons. The USD 1.25 poverty line (2005 PPP) has also been adopted by the Feed the Future (FTF) program in order to monitor performance in countries where the initiative is being implemented. Annex 5 details the analytical procedures used to obtain the first two poverty lines, as well as the equivalences in Quetzales (2013) of the poverty lines expressed in 2005 Purchasing Power Parity.

Table 5.1 shows poverty prevalence corresponding to the four cut-offs. Using WHIP poverty lines, we find that 76.2% of people living in the ZOI are poor, and 27% live in extreme poverty. These levels are significantly higher than national estimates. According to ENCOVI 2011, the percentage of overall poverty at the national level was 53.7%, and the percentage of extreme poverty was 13.3%. It is worth noting that the extreme poverty levels in the ZOI are twice as high as the level reported for the country overall. Poverty levels are slightly lower in the RVCP Direct Beneficiaries domain, and higher in the Health Only domain.

Table 5.1. Prevalence of Poverty

Percentage of individuals who live below the poverty line based on estimated daily per capita income, by poverty line updated to 2013.

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Poverty Lines (daily per capita income)				
13.18 Quetzales daily per capita income	23.8	25.1	27.7	27.0
27.17 Quetzales daily per capita income	70.9	71.8	77.6	76.2
USD 1.25 (2005 PPP)*	4.6	4.7	6.3	5.9
USD 2.00 (2005 PPP)**	26.2	28.2	0.2	29.7
Number of households	1,252	1,733	984	3,969

* 8.66 Quetzales daily per capita income

** 13.85 Quetzales daily per capita income

5.2. Consumption Expenditures

Table 5.2 shows average and median total daily per capita consumption. Results are presented in 2013 Quetzales and 2010 United States Dollars. The levels of consumption in the ZOI are low. Half of people living in the ZOI have a daily consumption of less than 17.95 Quetzales. Both the average and the median are below the general poverty line of 27.17 2013 Quetzales, both in the ZOI and in each of the three study domains. Consumption is higher in the RVCP Direct Beneficiaries domain; the average and the median are both approximately 10% above the Health Only domain and 2% and 6%, respectively, above the average and median for RVCP Indirect Beneficiaries.

Table 5.2. Per Capita Consumption

Average and median daily per capita consumption, in 2013 Quetzales and in 2010 USD

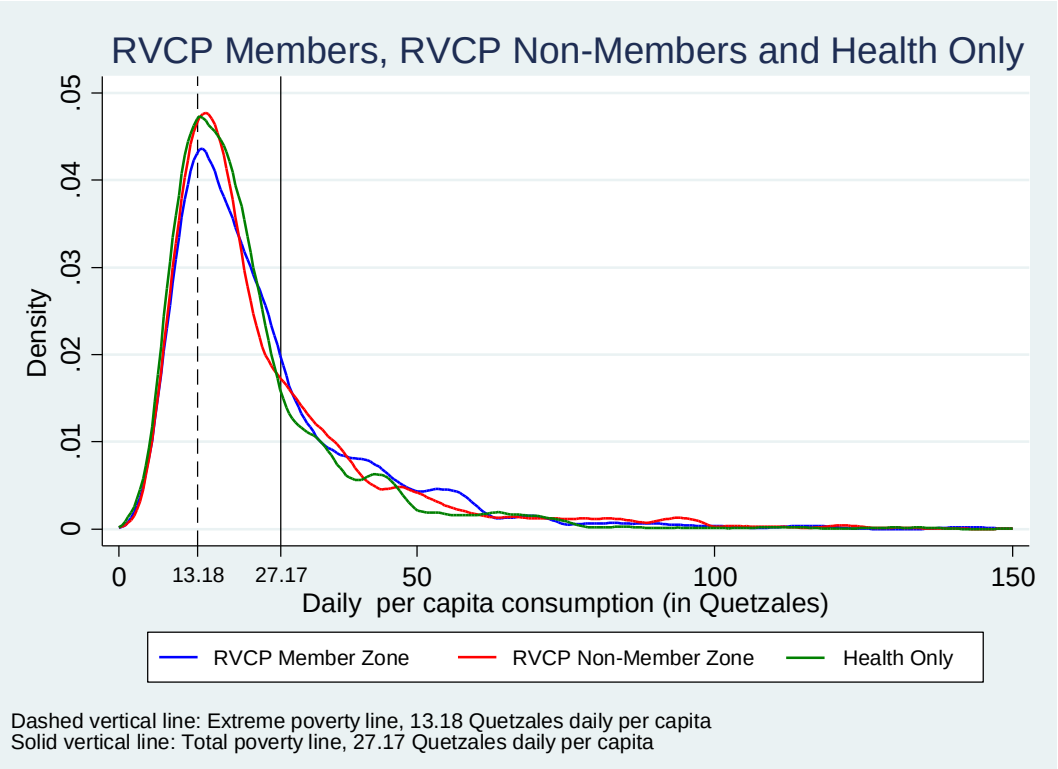
	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
In 2013 Quetzales:				
Average	25.06	24.57	22.36	22.90
Median	19.59	18.41	17.86	17.95
In 2010* USD				
Average	4.04	3.96	3.61	3.69
Median	3.16	2.97	2.88	2.89
Number of households	1,252	1,733	984	3,969

* The conversion factor is 0.16123638 2010 USD per 2013 Quetzal

Figure 5.1 shows the distributions of daily per capita consumption in the three ZOI domains. The total poverty line (27.17 Quetzales) and the extreme poverty line (13.18 Quetzales) are included. The distribution pattern is typical compared to other surveys, with a considerable concentration at the left

of the distribution. Similarly, it should be noted that the distribution is concentrated left of the total poverty line. A slightly greater left skew is apparent for the RVCP Direct Beneficiaries domain and for the Health Only domain. The distributions of these two groups are very similar.

Figure 5.1. Distribution of daily per capita consumption in ZOI domains.



Dashed vertical line: Extreme poverty line, 13.18 Quetzales daily per capita
Solid vertical line: Total poverty line, 27.17 Quetzales daily per capita

5.3. Consumption by Expense Type

Table 5.3 shows consumption by expense type in ZOI households. An estimated 42.4% of total consumption in ZOI households is allotted to food (43.5%, if meals outside the home are included). The next most important line items are the ones pertaining to household services, which constitute 11.8%, and housing, which represents 10.7%. The Household Services line item includes water, electricity, land telephone lines or mobile telephones, garbage collection, and energy sources used in the household (firewood, gas, batteries, etc.). These results are consistent with the poverty conditions of most ZOI households. It is important to note also that health expenses constitute 8.9% of ZOI household consumption. This line item includes expenses for acute and preventive care, medical consultations, medications, hospitalization, and other health-related expenses. The total expenditure in food, housing, household services and health constitutes almost three fourths of total consumption (73.8%). There is relatively little variation in consumption composition across ZOI domains.

Table 5.3. Consumption by Expense Type

Percent of total household expenditure by expense type, average values

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Food and drink	41.7	41.5	42.7	42.4
Meals outside the home	1.1	1.0	1.1	1.1
Housing	9.1	10.1	10.9	10.7
Household services	10.4	11.6	11.9	11.8
Education	4.7	4.0	4.0	4.0
Health	10.1	10.7	8.4	8.9
Household equipment	2.5	1.6	1.3	1.4
Donations	0.2	0.3	0.3	0.3
Household items, house cleaning and maintenance, and household appliances	5.1	5.1	5.3	5.3
Donations, taxes, funeral, pensions	2.1	2.1	1.8	1.9
Recreation, entertainment, and tourism	0.5	0.5	0.5	0.5
Clothing and shoes	3.5	3.3	3.4	3.4
Personal care	1.8	2.0	2.0	2.0
Others	7.2	6.2	6.4	6.3
Total	100.0	100.0	100.0	100.0
Number of households	1,252	1,733	984	3,969

6. Nutrition and Food Security

The nutritional status of boys and girls under five years old and of women was evaluated using anthropometric indices based on weight, height, and age; anemia was measured with portable Hemocue hemoglobinometers, and women's practices pertaining to breastfeeding, infant and child feeding, deworming treatments and micronutrient supplementation use were measured with relevant questions included in the women's questionnaire.

Anthropometric measurements were performed on all children under 60 months of age and all women from 15 to 49 years old in the household. Anemia tests were also performed on these two population groups, although children under 6 months of age were excluded. Using this protocol, anthropometric and anemia results include children whose natural mothers do not live in the household and/or are not age-eligible to participate in the women's questionnaire. Only the nautral born children of womens' questionnaire respondents are included in questions related to breastfeeding and other aspects of children's nutrition and health.

6.1. Children's Nutritional Status

6.1.1. Chronic, Acute, and Overall Malnutrition; Overweight and Obesity

In the ZOI, 67.4% of children under five years old suffer from moderate or severe chronic malnutrition (see Table 6.1), defined as height-for-age less than 2 standard deviations below the median for the reference population. This result is higher than the national prevalence reported by ENSMI 2008 for children ages 3 to 59 months (49.8%) and the prevalence corresponding to this age group in rural areas from the ENSMI (58.6%). Approximately 31% of children in the ZOI exhibit severe chronic malnutrition (defined as a height-for-age index less than 3 standard deviations below the reference population median). This also surpasses the percentages at the national level (21.2%) and at the rural level (26.7%) reported by ENSMI 2008. Within the ZOI, a lower percentage of children in RVCP Direct Beneficiary households (60.3%) suffer from chronic malnutrition compared to children in RVCP Indirect Beneficiary households (65.2%) or in Health Only areas (67.4%).

Global malnutrition (low weight-for-age) is less common (17.3% in the ZOI) than chronic malnutrition, and is slightly more prevalent in the ZOI than the 15.9% level recorded by ENSMI 2008 for children from 3 to 59 years old in rural areas. Global malnutrition is higher in the Health Only group (18.4%) than among RVCP Direct Beneficiary households (12.0%) or Indirect Beneficiary households (14.1%). Acute malnutrition or low weight-for-age is extremely rare. Less than 1% of children under five years old in the ZOI suffer from acute malnutrition and there is very little variation across ZOI domains.

Malnutrition, overweight, and obesity may contribute substantially to the disease burden in medium- and low-income countries.[4] The World Health Organization (WHO) recommends using body mass index (BMI) for age to measure overweight and obesity in children.[5] In the ZOI, the prevalence of a BMI for age that indicates overweight is low, 4.4%; however, borderline BMI indicating that the child is at risk of becoming overweight reaches 28.1%. No differences are apparent by domain. Obesity is very uncommon (0.3%). Overweight and obesity are somewhat more prevalent in RVCP Direct Beneficiary

[4] http://www.who.int/mediacentre/news/notes/2013/obesity_undernutrition_20130605/en/

[5] http://www.who.int/childgrowth/training/module_c_interpreting_indicators.pdf

households (7.2%) than RVCP Indirect Beneficiary households (5.5%) or the Health Only domain (4.5%).

Table 6.1. Malnutrition in Children

Percentage of boys and girls under 5 years old, by type and degree of malnutrition, according to domain.

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Chronic malnutrition (low height-for-age)				
None	11.7	11.5	7.8	8.7
Mild	28.0	23.3	24.0	23.9
Moderate	**35.7**	**34.8**	**36.6**	**36.2**
Severe	**24.7**	**30.4**	**31.7**	**31.2**
Total	100.0	100.0	100.0	100.0
Acute malnutrition (low weight-for-height)				
None	94.9	95.0	94.2	94.4
Mild	4.6	4.0	5.0	4.7
Moderate	**0.2**	**0.6**	**0.5**	**0.5**
Severe	**0.3**	**0.4**	**0.3**	**0.3**
Total	100.0	100.0	100.0	100.0
Global malnutrition (low weight-for-age)				
None	49.1	44.7	42.1	42.8
Mild	38.8	41.1	39.6	39.9
Moderate	**10.7**	**11.8**	**16.1**	**15.0**
Severe	**1.3**	**2.3**	**2.3**	**2.3**
Total	100.0	100.0	100.0	100.0
Overweight and obesity (high BMI for age)				
None	63.1	66.6	67.5	67.1
At risk of overweight	29.8	27.9	28.1	28.1
Overweight	6.5	5.1	4.2	4.4
Obesity	0.7	0.4	0.3	0.3
Total	100.0	100.0	100.0	100.0
Number of cases	1,030	1,448	834	3,312

6.1.2. Infant and Child Feeding Practices

a. Breastfeeding and Complementary Feeding

Exclusive breastfeeding during the first 6 months of a child's life is common but not universal, among children in the ZOI, 66.3% of whom were only given breastmilk on the day preceding the survey (See Table 6.2 and Figure 6.1). This prevalence is higher than the 49.6% reported by ENSMI 2008 at the national level. In the country's rural areas, according to ENSMI, the median period for exclusive breastfeeding is 4.6 months. Practically all other children between ages 0-5 months in the ZOI (29.1%) were breastfed during the previous day, but were also given other liquids. The national prevalence of this pattern reported by ENSMI is almost 32.5%. Less than 0.5% of mothers in the ZOI reported that they did not breastfeed their children who were less than 6 months old, and 4.3% reported giving complementary foods to these young infants. Early introduction of complementary foods is even higher nationally: 5.9% of children under age 6 months had not been breastfed the day before the ENSMI 2008 and 12.1% had been given complementary foods.

As shown in Table 6.2 and Figure 6.2, among children who should be receiving complementary foods (from ages 6 to 23 months) in the ZOI, between 11.1% and 18.1% were not being breastfed. However, most of the children in this age range (81.2%) had been breastfed and given solid, semi-solid, or soft foods the day before the survey, which constitutes the recommended pattern. The national estimate of continued breastfeeding plus complementary feeding among 6 to 23 month-olds is only slightly less than 66%, principally because of the lack of breastfeeding in this age group. Only 2.7% of children from 6 to 23 months old in the ZOI had been breastfed only or were breastfed and given other liquids only on the day preceding the survey. In all three domains the early introduction of non-breastmilk liquids and early termination of breastfeeding were common.

Table 6.2. Breastfeeding and Complementary Feeding

Percentage of last-born children under age 24 months, by breastfeeding status on the day preceding the survey, according to age group and domain

	RVCP Direct Beneficiaries		RVCP Indirect Beneficiaries		Health Only		ZOI	
	Age (months)		Age (months)		Age (months)		Age (months)	
	0-5	6-23	0-5	6-23	0-5	6-23	0-5	6-23
Breastfeeding conditions								
No breastfeeding	1.7	11.1	1.6	18.1	.	15.8	0.3	16.1
Exclusive breastfeeding	66.0	2.7	56.0	2.4	68.7	1.6	66.3	1.8
Breastfeeding and other liquids*	27.7	2.6	33.3	1.0	28.2	0.8	29.1	0.9
Breastfeeding and complementary feeding	4.6	83.6	9.1	78.5	3.1	81.9	4.2	81.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of cases	113	303	123	427	82	237	318	967

* Including water and milk substitutes

Figure 6.1. Percentage of last-born children under age 6 months by breastfeeding status on the day preceding the survey, according to domain.

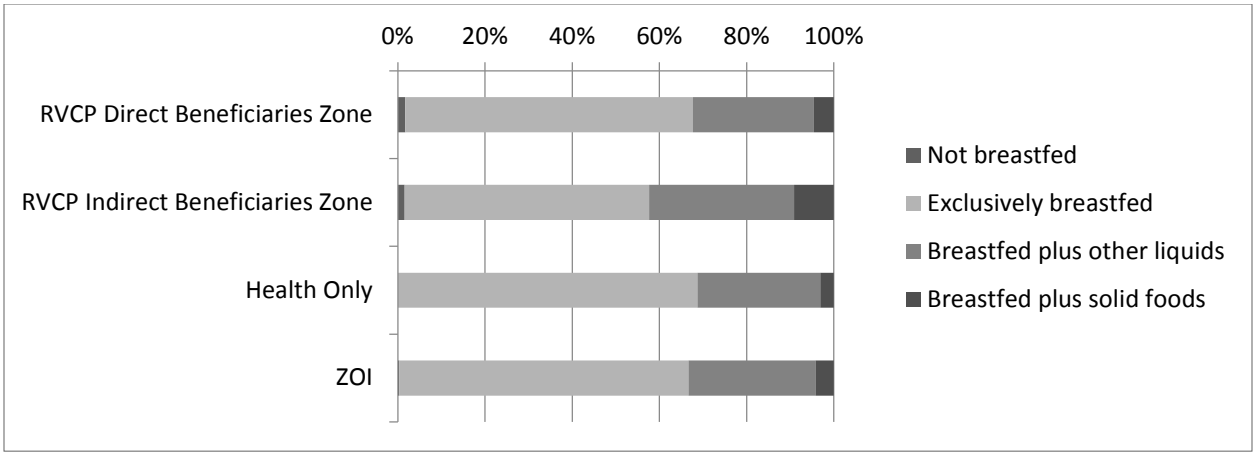
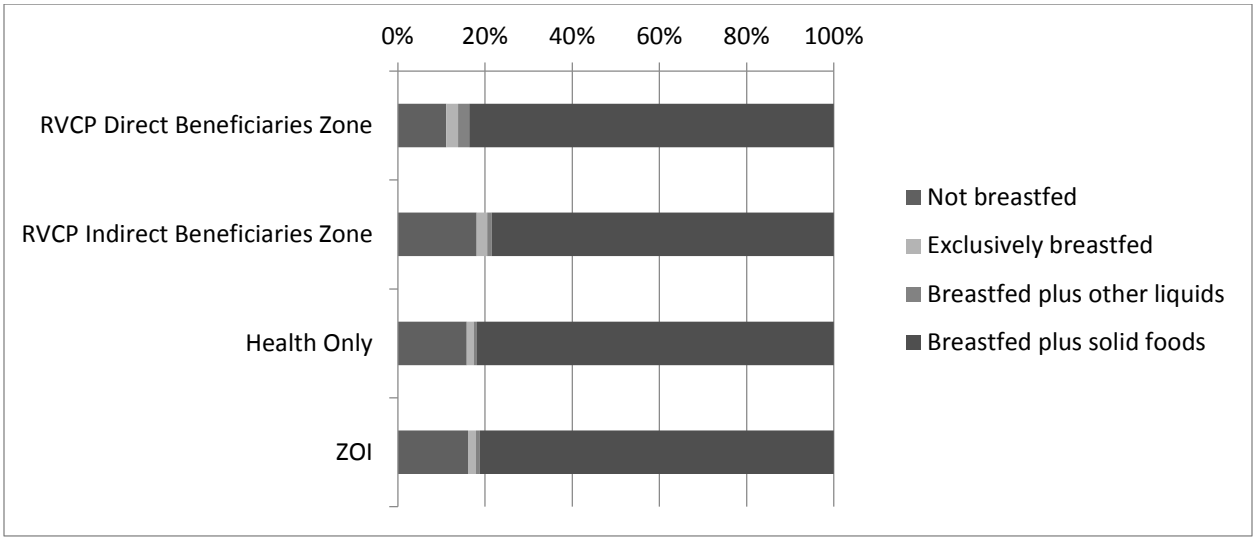


Figure 6.2. Percentage of last-born children under age 6 months by breastfeeding status on the day preceding the survey, according to domain.



b. Breastfeeding during the First Hour after Birth

Timely initiation of breastfeeding, preferably within the first hour after birth, is crucial to support newborn survival and healthy growth. In the ZOI, as well as in Guatemala in general, practically every newborn is breastfed at some point. Approximately 56% of the children in this age group were first breastfed within one hour of birth (see Table 6.3). Mothers started breastfeeding 30.4% of children in the ZOI after one hour of birth but still within 24 hours, and 12.2% of children were not breastfed until after the first day of life. At the national level, 55.5% of children are breastfed in the first house, and in the country's rural areas this percentage is slightly higher at 59.8%. Breastfeeding initiation between 1 and 23 hours after birth is 30.4% in the ZOI, higher than the national prevalence (23.7%) or the estimate for Guatemala's rural areas (21.2%).

Table 6.3. Breastfeeding Initiation

Percentage of last-born children under 5 years of age, by time of breastfeeding initiation, according to domain

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Time of first breastfeeding				
Within first hour after birth	59.4	55.4	56.5	56.4
After the first hour after birth	27.3	27.7	31.3	30.4
After the first day	12.8	15.4	11.2	12.2
Never breastfed	0.5	1.5	1.0	1.1
Total	100.0	100.0	100.0	100.0
Number of cases	768	1,035	589	2,392

c. Minimum Acceptable Diet in Children Aged 6 to 23 Months (includes both feeding frequency and dietary diversity)

"Minimum Acceptable Diet" reflects basic standards for feeding frequency and dietary diversity in children from 6 to 23 months old.[6,7] Dietary diversity is used as a proxy for the adequacy of micro-nutrient intake. The standard for children in this age range is consuming foods from at least four of the following food groups: grains, roots, and tubers, legumes and nuts, dairy products (milk, yogurt, and cheese), meats (beef, fish, poultry, and innards), eggs, fruits and vegetables high in Vitamin A, and other fruits and vegetables. Children who are not breastfed have stricter feeding frequency requirements for dietary adequacy.

Feeding frequency is a proxy for energy adequacy, and standards vary according to the child's breastfeeding status and age. Children who are breastfed should be given solid, semi-solid, or soft foods at least twice a day from 6 to 8 months of age, and three times a day after 9 months. Children from 6 to 23 months of age who are not been breastfed must be fed at least four times a day, including two milk feedings, to achieve dietary adequacy.

EMEPAO 2013 shows that approximately 40% of the children in the ZOI have a minimum acceptable diet, and that minimum acceptable diet levels are very similar in the three domains (see Table 6.4). The pattern was similar for both components of the measure: dietary diversity and feeding frequency. It is important to underscore that a higher percentage of children achieved acceptable feeding frequency (71.7%) than acceptable dietary diversity (48.8%). Based on these results, it appears that diets that are limited to a few staple foods are common in this age group – slightly more than half of children (51.2%) had unacceptably low dietary diversity, which could indicate risk for micronutrient deficiencies.

Non-breastfed children constitute 16.1% of the 6-23 month age group in the ZOI (Table 6.2). These children require two milk feedings per day and more frequent feedings with solids or semi-solids in order for their diets to be considered adequate. In the ZOI, only 16.1% of non-breastfed children in this age range had acceptable diets, while 44.4% of breastfed children did. The difference is largely a result

[6] http://whqlibdoc.who.int/publications/2008/9789241596664_eng.pdf?ua=1

[7] http://feedthefuture.gov/sites/default/files/resource/files/ftf_handbook_indicators_sept2013_2_0.pdf

of the considerable difference in feeding frequency adequacy (30.9% of children who were not breastfed versus almost 80% of the children who were breastfed showed acceptable feeding frequency). Children who were not breastfed also had lower dietary diversity compared with their counterparts who were breastfed, but the difference was considerably less (41.6% vs. 50.2%).

Table 6.4. Minimum Acceptable Diet (MAD)

Percentage of children ages 6 to 23 months with minimum acceptable diet, by breastfeeding status and domain

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Acceptable feeding frequency	70.1	72.5	71.5	71.7
Breastfed	74.4	81.6	79.1	79.5
Not breastfed	36.2	31.3	30.7	30.9
Acceptable dietary diversity	54.2	49.5	48.5	48.8
Breastfed	53.8	51.2	49.8	50.2
Not breastfed	57.3	41.7	41.2	41.6
Acceptable Minimum Diet	42.5	38.7	40.0	39.8
Breastfed	45.0	43.9	44.5	44.4
Not breastfed	22.8	15.2	16.2	16.1
Number of cases	303	427	237	967

d. Iron, Vitamin A, and Deworming Medications

As can be seen in Table 6.5, approximately one out of every five children under 5 years old in the ZOI (21.4%) had received an iron supplement in the seven days preceding the survey. Deworming treatment is more commonly given than iron supplementation, but is still administered to less than half of children in the ZOI: 41.7% of children under age 60 months had been given deworming medication in the previous 6 months. Vitamin A supplementation is even more common: 62.8% of children had been given a vitamin A supplement in the past 6 months. Prevalence of deworming treatment/micronutrient supplementation is slightly higher among indirect RVCP beneficiary households than in the other groups.

Table 6.5. Micronutrients and Deworming Medications

Percentage of children under 5 years old who received micronutrient supplements and deworming medications, by domain.

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Took iron in the previous 7 days	22.2	25.2	20.3	21.4
Took vitamin A during the preceding 6 months	62.4	67.7	61.4	62.8
Took deworming medication during the preceding 6 months	40.3	46.9	40.3	41.7
Number of cases*	1,018	1,415	825	3,259

*The number of cases varies slightly (from 1 to 3 cases) in some domains. With the aim of simplifying, only the minimum value for each variable is shown in this table.

6.1.3. Anemia in Children

Thirty-four percent of children from 6 to 59 months of age in the ZOI showed some degree of anemia (see Table 6.6). This prevalence is below the 47.7% reported at the national level and the 48.6% for rural areas reported by ENSMI 2008. Approximately 60% of anemia cases in the ZOI, or 20.6% of the children in this age range, had mild anemia. Most other cases reflected moderate anemia (13.2% of all children), while severe anemia was very infrequent (less than 1% of children). The prevalence of anemia and the pattern of its severity were very similar across study domains. Results suggest that although anemia may be less prevalent in the ZOI than at the national level, children's diets still commonly contain low levels of iron and/or parasite loads are high.[8]

[8] As in ENSMI 2008, anemia is defined according to criteria established by the Centers for Disease Control and Prevention (CDC) (MMWR, 1998): Boys and girls under age 24 months are classified as having anemia when they have < 11.0 mg/dl and boys and girls aged from 24 to 59 months are classified as such if they have < 11.1 mg/dl. In addition, adjustments are made to the cut-off points for locations more than 3,000 feet above sea level: From 3,001 to 4,000 feet, the cut-off is 0.2 mg/dl greater; from 4,001 to 5,000 feet, it is 0.3 mg/dl greater; from 5,001 to 6,000 feet it is 0.5 mg/dl greater; from 6,001 to 7,000 feet, 0.7 mg/dl greater; from 7,001 to 8,000 feet, 1.0 mg/dl greater; from 8,001 to 9,000 feet, 1.3 mg/dl greater; from 9,001 to 10,000 feet, 1.6 mg/dl greater, and from 10,001 to 11,000 feet, 2.0 mg/dl greater. For example, a boy who is 36 months of age, and who has a 12.2 mg/dl hemoglobin count would be classified as anemic at altitudes over 8,000 feet or more (12.2<11.1+1.3), but would not be considered anemic at lower altitudes (12.2≥11.1+1.0). (http://stacks.cdc.gov/view/cdc/8277)

Table 6.6. Anemia in children

Percentage of children 6 to 59 months old by anemia level, according to domain

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Has Anemia	35.4	32.8	34.5	34.2
Severity				
None	64.6	67.2	65.5	65.8
Mild	22.9	21.1	20.4	20.6
Moderate	12.5	11.5	13.8	13.2
Severe	.	0.1	0.3	0.3
Total	100.0	100.0	100.0	100.0
Number of cases	904	1,306	735	2,945

6.2. Women's Nutritional Status

6.2.1. Nutritional Status and Dietary Diversity

The nutritional status of reproductive-age women (15-49 years old) was measured in the study using height, body-mass index (BMI) and dietary diversity expressed as the average number of food groups (out of nine) consumed on the day preceding the interview. In this population of women, short stature and a high body-mass index are very common. In general, the study results suggest that chronic malnutrition during early childhood co-exists with overnutrition during adulthood for women in the ZOI.

As shown in Table 6.7, almost 43% of reproductive-age women are less than 145 centimeters tall and therefore at high risk for low birth weight, obstructed delivery, and other obstetric problems. At the national level according to ENSMI 2008, the percentage of low stature in women is less (31.2%) but slightly higher (35.4%) in rural areas. Low stature is slightly less prevalent in the RVCP Indirect Beneficiaries domain than other domains (39% versus 42.9% for RVCP Direct Beneficiary households and 43.5% in Health Only households). Moreover, 42.8% of women aged from 15 to 49 in the ZOI had a body-mass index (BMI) of 25 or more, indicating overweight or obesity. An estimated 11.5% of women had a body-mass index (BMI) classified as being obese or extremely obese. Women's BMI results were similar across study domains.

On average, women in the ZOI have access to foods from at least 4 out of the 9 key food groups. Although there is no established norm for adequacy on this indicator, higher values indicate a higher probability of sufficient micronutrient intake for women and their breastfed children. Dietary diversity is also similar across study domains.

Table 6.7. Nutrition in Women

Percentage of women aged 15 to 49, by height and body mass index category and average number of food groups consumed on the day before the survey, according to domain.

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Height				
Less than 145 centimeters	42.9	39.0	43.5	42.5
145 centimeters or more	57.1	61.0	56.5	57.5
Total	100.0	100.0	100.0	100.0
Number of cases	1,788	2,109	1,255	5,152
Body mass index (BMI)				
Low (<18.5)	1.6	2.5	2.3	2.3
Normal	57.0	55.6	54.5	54.8
Overweight (25 or more)	29.9	31.4	31.3	31.3
Obese	11.1	10.2	11.0	10.8
Extremely obese (40 or more)	0.5	0.4	0.8	0.7
Total	100.0	100.0	100.0	100.0
Number of cases	1,788	2,109	1,255	5,152
Average number of food groups	4.6	4.5	4.4	4.4
Number of cases	1,936	2,273	1,357	5,566

6.2.2. Anemia among Women

Anemia places women at high risk of maternal complications including death. Furthermore, women with anemia can also pass the condition on to their children. In the ZOI, 18% of reproductive-age women are anemic, and this prevalence varies little by domain (see Table 6.8). Most anemic women had mild anemia (14.8%), suggesting that the problem may be readily amenable to intervention.

Table 6.8. Anemia in Reproductive-Age Women

Percentage of women from 15 to 49 years old, by level of anemia, according to domain

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Has Anemia	17.0	18.0	18.1	18.0
Severity				
None	83.0	82.0	82.0	82.0
Mild	14.6	14.3	14.9	14.8
Moderate	2.4	3.6	2.8	2.9
Severe	0.1	0.1	0.4	0.3
Total	100.0	100.0	100.0	100.0
Number of cases	1,896	2,256	1,329	5,481

In the ZOI approximately 17% of non-pregnant women have anemia, while 28.8% of pregnant women and 23.1% of breastfeeding women do (see Table 6.9). According to ENSMI 2008, the national prevalence of anemia among non-pregnant women is higher at 21.4% and, similar to EMEPAO results

among pregnant women (29.1%). In the country's rural areas, these estimates are 23.1% and 30.0%, respectively.

In the ZOI overall and the three domains that constitute it, severe anemia is rare. In the RVCP Direct Beneficiaries domain, 16.8% of non-pregnant women were found to be anemic, along with 19.7% of pregnant women and 24.1% of breastfeeding mothers. In the RVCP Indirect Beneficiaries domain, 17.3% of non-pregnant women, 27.6% of pregnant women, and 21.8% of breastfeeding mothers were anemic. In the Health Only domain, anemia was detected in 17.1% of non-pregnant women, 28.8% of pregnant women, and 23.1% of breastfeeding mothers.

Table 6.9. Anemia in Women by Pregnancy and Breastfeeding Status

Percentage of pregnant and breastfeeding women from 15 to 49 years old with anemia, according to domain

	RVCP Direct Beneficiaries		RVCP Indirect Beneficiaries		Health Only		ZOI	
	Pregnant	Breast-feeding	Pregnant	Breast-feeding	Pregnant	Breast-feeding	Pregnant	Breast-feeding
Has anemia	19.7	24.1	27.6	21.8	29.4	23.4	28.8	23.1
Severity								
None	80.4	75.9	72.4	78.2	70.6	76.6	71.2	76.9
Mild	15.6	20.5	21.3	17.2	21.7	20.4	21.5	19.8
Moderate	4.0	3.5	6.3	4.5	6.7	2.6	6.6	3.0
Severe	.	0.1	.	.	0.9	0.4	0.7	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of cases	122	436	167	579	101	330	390	1,345

6.3. Food Security and Perceptions about Malnutrition

6.3.1. Prevalence of Food Insecurity (Using the Household Hunger Scale)

Food security was measured using the Household Hunger Scale (HHS), an instrument that has been cross-culturally validated. It includes a short series of questions relating to the adequacy of food supply and consumption and the physical consequences of hunger among members of the household during the four weeks preceding the survey.[9] The scale value begins at zero and is based on three source questions about situations pertaining to the lack of food: In the past four weeks "was there ever a time when there was no food in your house?"; "Have you or any member of your household gone to bed hungry at night because there was not enough food?" and "Have you or any member of your household spent one whole day and night without eating anything because there was not enough food?" For each affirmative response, participants are asked if the situation occurred, "A few times (1 or 2 times)" or "Sometimes (3 to 10 times);" if so, one point is added to the score. If the interviewee reports that the situation has occurred "many times (more than 10 times)," two points are added. The scale has a maximum value of six. Values totaling 2 or 3 indicate moderate hunger, while values from 4 to 6 indicate severe hunger.

[9] http://www.fantaproject.org/sites/default/files/resources/HHS-Indicator-Guide-Aug2011.pdf

Table 6.10 shows that moderate or severe hungers affect 13.7% of households in the ZOI. Household food insecurity occurs more rarely in RVCP Direct Beneficiary households: 7.2% versus 13.7% and 14.0% of households in the other domains.

Table 6.10. Household Food Security

Percentage of households by hunger level, according to domain

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Level of household hunger				
No hunger or mild hunger	92.8	86.3	86.0	86.3
Moderate hunger	6.6	12.3	12.8	12.5
Severe hunger	0.6	1.4	1.2	1.2
Total	100.0	100.0	100.0	100.0
Number of cases	1,264	1,745	997	4,006

6.3.2. Household Vegetable Gardens or Crops

Having access to land and agricultural crops for household consumption can promote household food security. As shown in Table 6.11, only 12.1% of households reported having food gardens or crops for household consumption. However, 44.3% indicated that they had a plot of land available for that purpose. The remaining households, 43.6%, do not produce any food for household use and have no access to land to do so. There are considerable differences across domains: Only 31.5% of RVCP Direct Beneficiary households did not produce food crops and reported that they could not produce food crops for their own use because they had no land to use; the same was reported by 41.8% of the households in Health Only sectors and 51.5% in the RVCP Indirect Beneficiaries domain.

Table 6.11. Household Food Security

Percentage of households with available food gardens or food crops for household consumption, according to domain

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Vegetable gardens and crops				
Produces food crops for household use	19.8	8.8	12.7	12.1
Does not produce but has available lot or land	48.7	39.7	45.5	44.3
Does not produce and has no available lot or land	31.5	51.5	41.8	43.6
Total	100.0	100.0	100.0	100.0
Number of cases	1,263	1,746	996	4,005

6.3.3. Perception of Malnutrition as a Problem

In those places where malnutrition occurs, residents can underestimate its seriousness as a personal problem and as a community public-health problem. When asked if they thought that malnutrition is a problem affecting their households, 52% of interviewees stated that it was (see Table 6.12). A slightly higher percentage, 60.0% said that malnutrition is a serious problem in their community. 21.1% of informants indicated that it is a moderate problem for the community; 13.1% answered that it was a slight problem, and 5.8% considered that malnutrition is not a problem in their communities. Results for these indicators were similar throughout the ZOI.

Table 6.12. Perceptions about Malnutrition

Percentage of households, by perception of interviewees about malnutrition as a problem in their households and communities, according to domain

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Believes malnutrition affects his/her household				
Yes	51.3	52.9	52.5	52.6
No	48.7	47.1	47.5	47.5
Total	100.0	100.0	100.0	100.0
Number of cases	1,263	1,745	996	4,004
Feels malnutrition is a serious problem in his/her community				
Serious	58.3	60.2	60.0	60.0
Moderate	23.4	22.1	20.7	21.1
Minor	13.3	12.0	13.4	13.1
None	5.0	5.8	5.9	5.8
Total	100.0	100.0	100.0	100.0
Number of cases	1,264	1,746	997	4,007

7. Maternal Health

7.1. First Births to Women under 18 Years Old

Pregnancy in adolescence can be dangerous for the mother and her child; it contributes to high population growth and limits a girl's educational opportunities. In the ZOI, 21.6% of women from 18 to 24 years old at the time of the survey had given birth before they were 18 years old (see Table 7.1). The prevalence of early pregnancy was identical in the RVCP Direct Beneficiaries domain and the Health Only domain, 21.0%, and only slightly higher in the RVCP Indirect Beneficiaries domain, 24.2%.

Table 7.1. First Births to Women under 18 Years Old

Percentage of women from 18 to 24 years old, by age at the time of their first delivery, according to domain

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Age at first birth				
<18	21.0	24.2	21.0	21.6
18 or more	30.6	32.6	31.2	31.5
No birth	48.4	43.2	47.8	46.9
Total	100.0	100.0	100.0	100.0
Number of cases	588	634	380	1,602

7.2. Prenatal Care and Counseling

Almost 93% of women in the ZOI who had given birth during the previous five years had received some type of pre-natal care, and 86.2% of women stated that they had received care from a physician or a nurse (see Table 7.2). ENSMI 2008 national estimates indicate that 93.2% of women at the national level and 91.7% of women in rural areas receive pre-natal care.

The World Health Organization (WHO) recommends that women have at least four pre-natal checkups during their pregnancies. This practice contributes to timely detection of possible obstetric problems and increases the probability of receiving recommended pre-natal services, such as tetanus toxoid vaccination. Most of the women in the ZOI, 76%, had 4 or more pre-natal checkups during their most recent pregnancy in the previous five years. The distribution is very similar across ZOI domains.

Timely initiation of prenatal care is also important. Ideally, women should start receiving prenatal care during the first trimester of their pregnancy. This was the case for 64.5% of women in the ZOI, and results were consistent across domains. ENSMI 2008 reported a similar percentage of women receiving timely prenatal checkups (60.4%). However, the percentage was lower in the country's rural areas, 54.5%. Most women who received prenatal checkups in the ZOI received counseling related to family planning, nutrition, and hygiene during their prenatal appointments, with total percentages by topic area ranging from 69.3 to 75.1. Counseling on these topics was most prevalent for women in the RVCP Direct Beneficiaries domain and slightly less common among RVCP Indirect Beneficiaries.

Table 7.2. Prenatal Checkups

Percentage of women aged 15 to 49, by prenatal care during most recent birth in the past 5 years and domain

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Received prenatal care				
Yes	93.6	93.9	92.2	92.6
No	6.4	6.1	7.8	7.4
Total	100.0	100.0	100.0	100.0
Number of cases	775	1,065	592	2,432
Personnel who provided prenatal care[1]				
Physician or ambulatory physician	34.5	39.7	40.4	40.1
Nurse	53.7	48.6	45.2	46.1
Trained midwife	5.1	5.1	6.3	6.0
Traditional birth attendant	0.4	0.2	0.1	0.1
Someone else/Nobody	6.4	6.5	8.0	7.6
Total	100.0	100.0	100.0	100.0
Number of cases	775	1,065	592	2,432
Number of prenatal checkups				
0	6.4	6.1	7.8	7.4
1-3	18.7	17.0	16.4	16.6
4 or more	74.9	76.9	75.8	76.0
Total	100.0	100.0	100.0	100.0
Number of cases	775	1,064	591	2,430
Time of first checkup [2]				
<4 months gestational age	64.0	65.5	64.2	64.5
4 or more months	36.0	34.5	35.8	35.5
Total	100.0	100.0	100.0	100.0
Number of cases	724	993	553	2,270
Received prenatal counseling on:[2]				
Family planning	72.6	66.0	70.9	69.9
Nutrition	72.9	68.0	69.6	69.3
Hygiene practices	77.7	71.2	76.1	75.1
Number of cases	725	993	553	2,271

1. If prenatal care was provided by more than one type of personnel, only the most qualified is shown.
2. Among women receiving prenatal checkups.

7.3. Birth Attendance

Expanding access to skilled care at birth is one of the most important maternal health interventions, since it has the potential to dramatically reduce maternal and neonatal mortality. At the national level, in 2008, 51.4% of all women and 36.5% of rural women were attended by a physician or a nurse during their most recent delivery in the previous 5 years. Table 7.3 shows EMEPAO results that indicate that this number is lower in the ZOI: 35.6%. In the country's rural areas, according to ENSMI, 54.4% of women were attended by a midwife during their deliveries (the report does not differentiate between skilled midwifes and traditional birth attendants). A higher percentage, 60.6% of ZOI women were

attended by a midwife during their deliveries (in 98% of these cases, a skilled midwife). Birth attendance provided by a physician or a nurse was less common among the RVCP Direct Beneficiaries (30.5%) versus RVCP Indirect Beneficiaries (39.5%) or in the Health Only areas (34.7%).

Approximately 35% of women in the ZOI gave birth at a health facility, the great majority (6 out of 7 cases) at a Ministry of Public Health and Social Assistance (MSPAS) facility. At the national level, according to ENSMI 2008, a higher percentage of women (51.2%) gave birth in a health facility. However, the EMEPAO result (35.3%) is very similar to the ENSMI result for women in rural areas, 36.4% of whom went to a health facility to give birth. Moderate differences can be seen across domains. The percentage of deliveries at health facilities was 30.4% in the RVCP Direct Beneficiaries domain, 39.3% in the RVCP Indirect Beneficiaries domain, and 35.3% in the Health Only domain.

Table 7.3. Birth Attendance

Percentage of children born during the past 5 years, by degree of qualification of birth attendant and by place of delivery, according to domain

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Type of personnel attending birth*				
Physician or ambulatory physician	29.0	35.8	30.8	31.8
Nurse	1.5	3.7	3.9	3.8
Trained midwife	59.5	54.9	58.1	57.4
Traditional birth attendant	3.4	2.7	3.3	3.2
Someone else	6.4	2.7	3.5	3.4
Nobody	0.3	0.3	0.4	0.4
Total	100.0	100.0	100.0	100.0
Number of cases	1,044	1,477	841	3,362
Place of delivery				
Home (including midwife's home)	69.6	60.7	65.7	64.7
MSPAS	25.6	30.4	30.5	30.4
Private hospital/clinic	2.9	6.2	2.6	3.4
APROFAM	0.6	0.7	0.4	0.5
IGSS	0.9	1.8	0.5	0.8
Others	0.5	0.1	0.2	0.2
Total	100.0	100.0	100.0	100.0
Number of cases	1,046	1,478	842	3,366

* If the delivery was attended by more than one type of personnel, only the most qualified is considered.

7.4. Post-Partum Care

Post-partum care is essential to diagnose and treat serious maternal problems, such as post-partum bleeding. It may also increase the prevalence of early breastfeeding initiation, which can help to prevent postpartum hemorrhage and support newborns' health. The qualification level of the care provider and the time that elapses between delivery and the first post-partum examination are also important contributing factors. Table 7.4 shows the results for these indicators in program domains.

In the ZOI, 72.1% of women received care during the post-partum period. An estimated 44% of women received post-partum care from a physician or a nurse, while 27.2% indicated that care was provided by an traditional birth attendant. Nearly 28% of women did not receive any post-partum care. ENSMI reports do not include the distribution of post-partum care by type of provider, instead showing the percentage of women who responded affirmatively when asked if they "had gone for post-partum checkups." At the national level, 25.7% of women and 20.8% of women in rural areas reported seeking post-partum care.

Almost 93% of women remained in the facility where they gave birth for 24 or more hours after delivery, and results were similar in all domains. Slightly more than 80% of women had their first post-partum checkup within two days of delivery. The lowest percentage of timely post-partum care was observed in the Health Only domain (78.6%); this percentage was slightly higher in the RVCP Direct Beneficiaries domain (82%) and higher still in the RVCP Indirect Beneficiaries domain (86.2%).

Table 7.4. Women's Post-Partum Care

Percentage of women aged 15 to 49, by post-partum care during most recent birth in the past 5 years, according to domain

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Received post-partum care				
Yes	72.1	74.5	71.9	72.5
No	27.9	25.5	28.1	27.5
Total	100.0	100.0	100.0	100.0
Number of cases	774	1,065	591	2,430
Type of personnel who provided post-partum care[8]				
Physician or ambulatory physician	25.4	28.0	24.8	25.5
Nurse	16.6	17.0	19.0	18.5
Trained midwife	29.5	28.3	26.9	27.2
Traditional birth attendant	0.7	0.9	1.3	1.2
Someone else	.	0.3	.	0.1
Nobody	27.9	25.5	28.1	27.5
Total	100.0	100.0	100.0	100.0
Number of cases	774	1,065	591	2,430
Duration of post-partum stay in the facility†				
Less than 24 hours	8.1	6.0	7.7	7.3
24 hours or more	91.9	94.0	92.3	92.7
Total	100.0	100.0	100.0	100.0
Number of cases	262	367	221	850
Time elapsed between delivery and first post-partum checkup‡				
2 days or less time	82.0	86.2	78.6	80.4
More than two days	18.0	13.8	21.4	19.6
Total	100.0	100.0	100.0	100.0
Number of cases	558	763	422	1,743

*. If post-partum care was provided by more than one type of personnel, only the most qualified is shown.
†. Among women who received post-partum care.
‡. Among women who received post-partum care.

7.5. Planning for Maternal Emergencies

Preparing or planning for delivery and recognizing danger signs can help families to be ready for a normal delivery and to prevent negative results in case there is a crisis from complications before, during, or immediately after giving birth. Approximately one in every four women (25.4%) in the ZOI had taken at least two out of the four essential birth-preparedness actions during her most recent pregnancy in the past five years (see Table 7.5). There were no significant differences across domains. The preparedness action most commonly adopted was saving money, which was done by 75.2% of ZOI women. A little over half of interviewees stated that they had selected a place for delivery and had ensured that there was transportation to the site, respectively. Identifying a blood donor was the least common action; only 7.5% of women in the ZOI indicated that they had done it before their most recent delivery. When differences were evident among domains, interviewees in the RVCP Direct Beneficiaries domain, in general, proved to be the most prepared.

Table 7.5. Planning for Maternal Emergencies

Percentage of women aged 15 to 49, by action taken to prepare for most recent birth during the past 5 years, according to domain

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Ensured transportation	68.4	54.4	55.2	55.4
Saved money	75.9	76.8	74.7	75.2
Identified blood donors	11.0	7.7	7.3	7.5
Selected a place for the delivery	57.7	52.0	54.7	54.1
Undertook two or more preparedness actions	26.4	27.3	24.8	25.4
Number of cases	776	1,065	592	2,433

7.6. Knowledge of Danger Signs

Women who are well informed about obstetric danger signs during pregnancy, delivery, and the post-partum/neonatal period can more readily seek timely care during emergencies, which could improve obstetric outcomes and prevent further complications. The EMEPAO baseline assessed women's unprompted ability to report key danger signs, as defined in the JHPIEGO document, "Monitoring Birth Preparedness and Complication Readiness."[10] Key danger signs during pregnancy include severe vaginal bleeding, swollen hands or face, and blurred vision. During delivery, danger signs include severe vaginal bleeding, prolonged labor, convulsions, and retained placenta. During the post-partum period, these include severe vaginal bleeding, foul-smelling vaginal discharge, and high fever. Key danger signs in newborns include convulsions/spasms/rigidity, difficulty breathing or fast breathing, very small baby, or lethargy/unconsciousness.

While approximately half of the women in the ZOI were able to name at least one danger sign, the ability to list two was less common (see Table 7.6). Women were better informed about the risks during delivery than at any other time; 18% or were able to name two or more key intrapartum danger signs. In contrast, only 13.3% of women were able to name two or more danger signs in the period immediately following delivery, and only 7.8% could name two or more key danger signals during

[10] http://www.jhpiego.org/files/BPCRtoolkit.pdf

pregnancy. When differences existed by domain, residents of households in the RVCP Indirect Beneficiary domain appeared to be the best informed.

Table 7.6. Knowledge of Key Danger Signs

Percentage of women aged 15 to 49 who can name key danger signs in women and newborns during pregnancy, delivery and post-partum, according to domain

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Knowledge of prenatal risks				
Named two or more key signs	7.6	9.0	7.4	7.8
Named one key sign	51.3	53.3	53.1	53.1
Named no key signs	41.2	37.7	39.4	39.1
Total	100.0	100.0	100.0	100.0
Knowledge of risks during delivery				
Named two or more key signs	19.0	21.0	16.8	17.8
Named one key sign	45.8	46.0	47.0	46.7
Named no key signs	35.3	33.0	36.2	35.5
Total	100.0	100.0	100.0	100.0
Knowledge of post-partum risks				
Named two or more key signs	14.8	15.3	12.7	13.3
Named one key sign	48.4	49.7	48.9	49.0
Named no key signs	36.8	35.0	38.4	37.6
Total	100.0	100.0	100.0	100.0
Knowledge of newborn risks				
Named two or more key signs	11.2	11.2	11.2	
Named one key sign	36.3	40.0	37.2	37.8
Named no key signs	52.5	48.8	51.6	51.0
Total	100.0	100.0	100.0	100.0
Number of cases	1,936	2,273	1,357	5,566

8. Fertility and Family Planning

8.1. Fertility

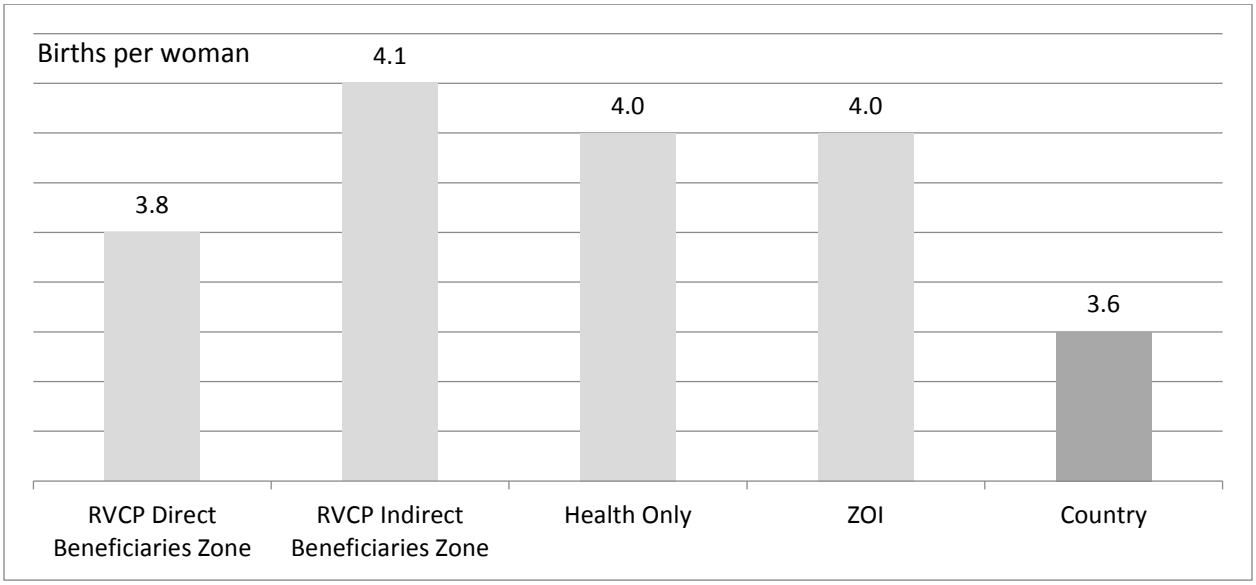
The relationship between fertility and poverty in developing countries is well-established, and Guatemala has one of the highest fertility rates in Latin America. Rates in the interior Northwestern and Southwestern Highlands region are even higher than the national average, according to data from the last ENSMI.

Fertility is expressed at the population level as the Total Fertility Rate (TFR) and specific fertility rates. These indicators are used because they are easy to interpret and because they are not affected by the age composition of the population.

EMEPAO gathered information to establish fertility rates using birth history questions. Figure 8.1 shows Total Fertility Rates, or the number of children that a woman would have during her reproductive years (15 to 49) at current fertility-per-age patterns registered by the survey. These values reflect the three years preceding the survey.

At current rates, reproductive-age women in the ZOI would give birth to an average of four children. The 2008 ENSMI reported TFR as 3.6 children per woman, nationally.

Figure 8.1. Total fertility rate (TFR).



Specific fertility rates, or fertility rates by 5-year age periods, reflect the fertility rate for every 1,000 women in each age range and show the births occurring in those age groups during the reference period. This indicator is frequently used to measure fertility at women's various ages.

Just as with the TFR, specific fertility rates from EMEPAO are close to those reported by the ENSMI. Figure 8.2 shows that, except for the 25-29 year-old group in the RVCP Direct Beneficiaries domain, the rest are almost identical to results obtained in the previous five years for the country as a whole. The line that stands out is the one that represents lower-level national averages.

The first age groups are most important from a public health perspective, because of the risks faced by young women during pregnancy and delivery. Results for the 15-19 year age group reflect adolescent fertility, which reaches high levels in Guatemala. There are 115 births for every one thousand 15-19 year old women in the ZOI. In the RVCP Direct Beneficiaries domain, the level is slightly lower; there are 106 births for every one thousand women in this age group.

The number of children that women bear during their reproductive years is also a useful indicator. As can be seen in Table 8.1, 32.5% of women in the ZOI had no children. Another 30% had more than four children, and nearly 40% had given birth to one to three children. The distribution of the number of live births is very similar across the domains in the ZOI.

The average number of live births is 2.5 and there is almost no variation across ZOI domains. Similarly, women's average number of living children at the time of the survey was 2.4 in all ZOI domains.

Figure 8.2. Specific fertility rates for the three years prior to the EMEPAO 2013 (July 2010 to June 2013).

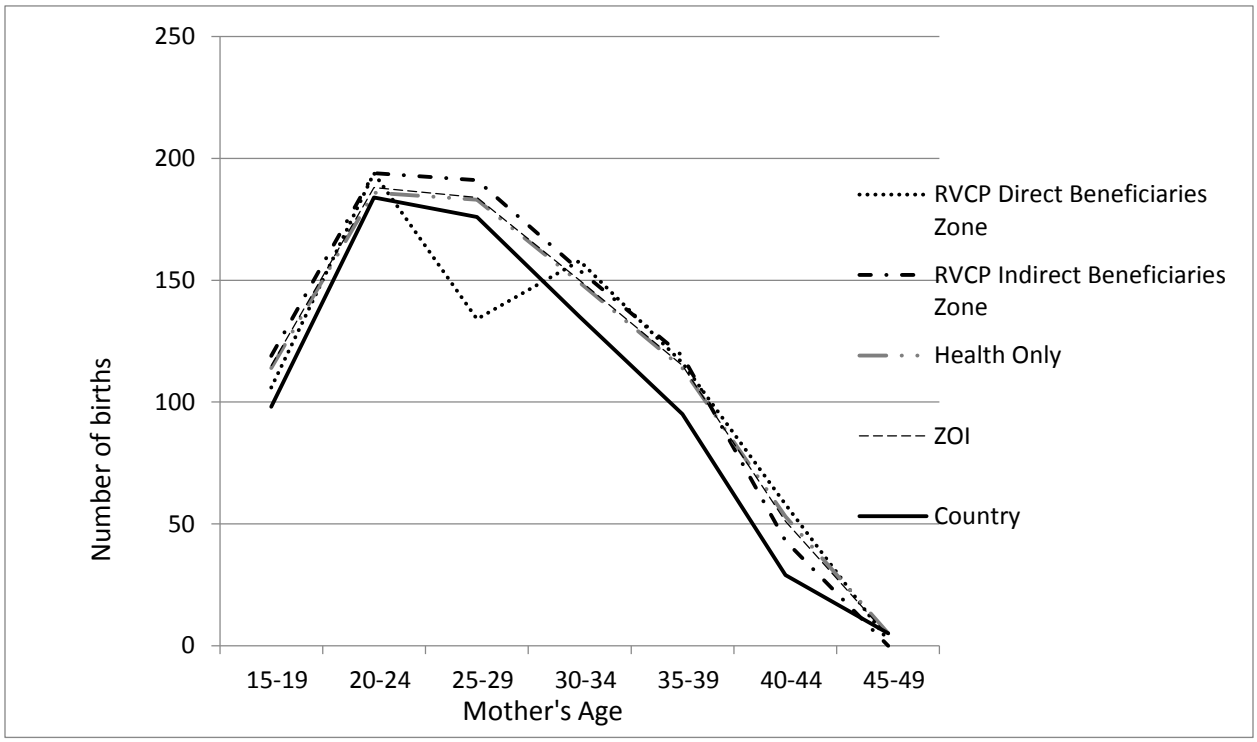


Table 8.1. Number of Live Births

Percentage distribution of women aged 15 to 49, according to number of live births

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Number of children				
No children	35.3	29.4	33.2	32.5
1	14.9	15.2	15.7	15.6
2	11.7	14.1	12.4	12.7
3	7.8	12.5	8.5	9.3
4	6.4	7.8	6.8	7.0
5	6.8	6.4	6.6	6.6
6	5.0	4.2	6.7	6.1
7 or more	12.1	10.6	10.1	10.3
Total	100.0	100.0	100.0	100.0
Average number of live births	2.5	2.6	2.5	2.5
Average number of living children	2.4	2.4	2.4	2.4
Number of cases	1,936	2,273	1,357	5,566

8.2. Use of Contraceptive Methods

Family planning is an important proximate determinant of fertility. EMEPAO gathered information to identify the prevalence in the use of family-planning methods, the supply source, and the unmet family-planning needs.

The prevalence of the use of contraceptive methods is considered a proxy for access to family planning services, and widely used to evaluate the performance of reproductive health programs. The indicator is usually expressed as the percentage of married women or women in a consensual union aged 15 to 49 who, at the time of the survey, were using a contraceptive method. A greater prevalence of contraceptive use results in lower Total Fertility Rates.

Table 8.2 shows current use of family planning methods. In the ZOI, almost half of women use a contraceptive method, and practically four out of every 10 (39%) use a modern method. There are no apparent differences between the RVCP Direct and Indirect Beneficiaries domains or in the rest of the intervention area.

The prevalence by type of method used is similar in all ZOI domains. The most common modern methods used by women include injections, 22.7%, and female sterilization, almost 11%.

ENSMI results from rural areas of Guatemala show similar rates of contraceptive use. The prevalence of injections and female sterilization is higher in the EMEPAO.

Table 8.2. Current Use of Contraceptive Methods

Percentage of women aged 15 to 49, married or in a consensual union, by contraceptive method used

Method	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Any method	51.4	50.7	49.1	49.5
Total modern methods	41.0	40.2	38.6	39.0
Feminine sterilization	11.6	11.6	10.7	10.9
Masculine method	0.6	.	0.1	0.1
IUD	0.9	1.8	0.6	0.9
Injection	22.7	22.4	22.8	22.7
Implant	1.8	1.3	1.6	1.5
Pill	0.9	1.2	0.4	0.6
Condom	2.0	1.2	1.5	1.4
Lactational Amenorrhea (LAM)	0.5	0.6	1.0	0.9
Total natural methods	10.4	10.5	10.4	10.4
Rhythm method	7.6	5.5	6.5	6.3
Withdrawal	2.8	5.0	3.9	4.1
Others	.	0.0	0.1	0.1
Number of cases	1,176	1,478	848	3,502

Figure 8.3. Current use of contraceptive methods by category, EMEPAO 2013 and ENSMI 2008.

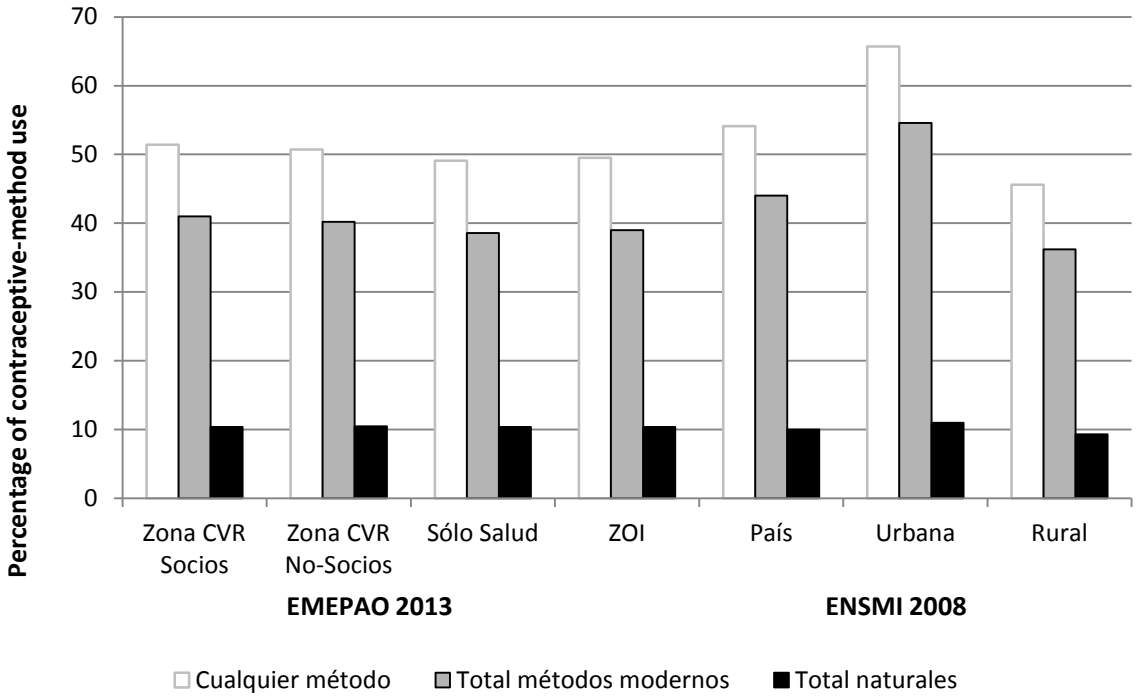


Table 8.3 shows the results for modern contraceptive method sources of supply. The main sources are public sector health facilities, which 80% of women using a modern method reported as their source. The most-utilized public sources are health posts, health centers, and public hospitals located in the ZOI. These three sources provide modern contraception to 57 percent of all users. In many cases, the other sources listed offer health services to rural populations, and supplying contraceptive methods is not typically one of their functions.

Table 8.3. Sources of Supply of Modern Contraceptive Methods

Percentage distribution of women aged 15 to 49 who use modern contraceptive methods, by source of supply

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Source of supply *				
Health post	21.3	19.9	24.0	23.0
Public hospital	15.5	18.2	18.8	18.5
Health center	12.1	18.7	15.5	16.1
Health community center	10.5	6.4	9.9	9.1
Permanent healthcare center	5.1	5.6	5.9	5.8
Convergence center	8.7	6.1	5.5	5.7
Other public-sector service	1.6	3.7	1.8	2.2
Pharmacy	9.5	8.3	8.3	8.3
APROFAM	7.9	5.3	4.7	4.9
Private hospital or clinic	6.1	4.7	4.1	4.3
Another private-sector service	0.5	2.0	1.0	1.2
Others	1.2	1.3	0.6	0.8
Total	100.0	100.0	100.0	100.0
Number of cases	489	576	331	1,396

*: See Annex 6 for definitions of types of health-facilities.

Women's use of modern contraceptive methods during their most recent sexual encounter is another indicator used to enumerate actions adopted by couples to prevent pregnancies and sexually transmitted infections. As indicated in Table 8.4, four out of ten women in the ZOI had used a modern method of family planning during their last sexual encounter. There is little variation in this result across study domains.

Table 8.4. Use of a Contraceptive Method during Most Recent Sexual Encounter

Percentage of women aged 15 to 49 who used a modern contraceptive method during their most recent sexual encounter in the past 12 months

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Total	41.8	42.2	40.2	40.6
Number of cases	1,159	1,457	839	3,455

8.3. Unmet Need for Family Planning

Unmet need for family planning measures the existing need for family planning methods in those women–married or in a consensual union–who are pregnant or whose last pregnancies were unwanted or unplanned. Additionally, this indicator includes fertile women who are not using contraception and who wish to prevent pregnancy or to space their next birth by at least two years, or those who are undecided about having another child or when to have one.

The indicator is divided into three components: total unmet need, unmet need to space births, and unmet need to limit births. This indicator complements contraceptive use prevalence and reflects the real needs of sexually active couples. The rates for contraceptive prevalence, on the other hand, do not fully reflect the preferences of individuals and couples in regard to their family planning. In contrast, the unmet needs indicator takes into account fertility intentions and desires, and facilitates assessment of whether women's needs to delay or prevent pregnancy are being satisfied.

Information on unmet need for family planning, along with contraceptive method use, provides data on the total demand for family planning. The percentage of women who wish to space and/or limit pregnancies can be considered, in principle, to reflect potential demand for family-planning services.

Table 8.5 shows EMEPAO 2013 results for family planning indicators. Unmet need among women in the ZOI is 17.3%; that is, this proportion of married or in-union sexually active women do not wish to become pregnant but are not currently using an effective method of family planning. There is little variation across domains in unmet need on this indicator. Almost 50% of women consider that their needs to space or limit pregnancies are being met. Total demand for contraceptive methods in the ZOI is 66.8%. Total demand is slightly higher in the RVCP Direct Beneficiaries domain (70.5%) than in the other two domains (67.8% and 66.4%).

Table 8.5. Unmet Need and Total Demand for Family Planning

Percentage of women aged 15 to 49 (married or in a consensual union) by aspects of family planning

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Unmet need				
To space	12.6	10.7	9.6	9.9
To limit	6.6	6.3	7.8	7.4
Total	19.1	17.0	17.3	17.3
Satisfied need				
To space	23.1	25.8	22.8	23.4
To limit	28.3	25.0	26.3	26.1
Total	51.4	50.7	49.1	49.5
Total demand				
To space	35.6	36.5	32.3	33.3
To limit	34.9	31.3	34.1	33.5
Total	70.5	67.8	66.4	66.8
Number of cases	1,176	1,478	848	3,502

9. Children's Health

WHIP emphasizes interventions that seek to improve the living conditions and survival of children under five years old, because of the special vulnerability of this population. EMEPAO gathered information on the population under five years old related to post-natal care, vaccination, diarrheal diseases, and acute respiratory infections.

9.1. Post-natal Care

Post-natal care is important to newborns' health because it allows for detecting and treating birth complications, and represents a window of opportunity to provide newborn healthcare services and counseling to mothers. EMEPAO data show that 85% of children born during the five years preceding the survey received post-natal care (Table 9.1). However, post-natal care was provided within the forst 48 hours in only 35.4% of births in the ZOI. There is little variation in these results across ZOI domains.

Table 9.1. Post-natal Care for Children

Distribution of children born during the five years prior to the survey, by post-natal care received

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Received post-natal care				
Yes	85.1	82.0	82.5	82.5
No	14.9	18.0	17.5	17.5
Total	100.0	100.0	100.0	100.0
Number of cases	773	1,065	591	2,429
Time elapsed between birth and the first post-natal checkup*				
Less than 2 days	31.5	32.0	36.5	35.4
2 or more days	68.5	68.0	63.5	64.6
Total	100.0	100.0	100.0	100.0
Number of cases	653	856	488	1,997

* Only children who received post-natal care

Table 9.2 shows that the main post-natal care providers in the ZOI are physicians (40.8%) and nurses (29.5%). A relatively high percentage of post-natal checkups were also performed by skilled midwives (28.2%).

Table 9.2. Post-Natal Healthcare Provider in the First Two Days after Birth

Distribution of children born during the five years prior to the survey, by type of personnel providing the first post-natal check-up within two days of the birth

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Type of personnel*				
Physician or ambulatory physician	36.9	44.4	40.1	40.8
Nurse	33.3	26.0	30.2	29.5
Trained midwife	28.5	28.4	28.1	28.2
Traditional birth attendant	1.1	0.4	1.1	1.0
Someone else	0.2	0.7	0.5	0.5
Total	100.0	100.0	100.0	100.0
Number of cases	207	282	183	672

* If post-natal care was provided by more than one type of personnel, only the most qualified is shown.

9.2. Vaccination

Vaccinating children under five years old, especially before they reach 24 months of age, is one of the most beneficial preventive measures for this population. Vaccines are not costly, but in the ZOI, difficulties with physical access as well as linguistic and cultural barriers are prevalent.

To obtain vaccination estimates, the health card for each child born in the past five years in selected households was reviewed. When the mother could not produce the card, verbal reconstruction was used to establish children's vaccination history. Table 9.3 shows the results pertaining to each one of the vaccines on which information was requested. Coverage of Pentavalent 1-3 and MMR/measles vaccination is high, nearly 100%. Pentavalent first booster vaccination also reaches high levels in children over 2 years old. Note that booster 2 is not indicated for children less than 24 months of age.

Table 9.3. Vaccination

Percentage of children age 12 to 59 months by age group and type of vaccines received, according to the health card or mother's self-report

	RVCP Direct Beneficiaries		RVCP Indirect Beneficiaries		Health Only		ZOI	
	12-23 months	24-59 months	12-23 months	24-59 months	12-23 months	24-59 months	12-23 months	24-59 months
Health card shown by mother	94.0	88.1	92.9	86.1	88.8	84.3	89.8	84.8
Vaccines received:								
Pentavalent 1	99.6	99.5	99.5	99.1	97.9	98.7	98.3	98.8
Pentavalent 2	99.6	99.3	98.3	99.0	97.2	97.8	97.5	98.1
Pentavalent 3	99.6	97.9	97.1	97.4	94.8	95.3	95.4	95.8
MMR/measles	94.8	98.1	93.6	98.4	86.2	96.2	88.0	96.7
Pentavalent booster 1	39.4	88.9	47.0	89.6	38.4	83.7	40.4	85.1
Pentavalent booster 2	0.0	23.2	0.0	24.3	0.0	22.0	0.0	22.5
All vaccines	0.0	23.2	0.0	24.3	0.0	22.0	0.0	22.5
None	0.4	0.4	0.5	0.9	2.1	1.3	1.7	1.2
Number of cases	202	589	303	843	172	499	677	1,931

9.3. Diarrheal Disease

Preventing diarrheal diseases in children under five years old is a priority for programs aimed at reducing child mortality and at improving children's living conditions. Unhealthy hygiene conditions, poor access to drinking water, and the lack of greywater-management systems can all lead to diarrhea which contributes to poor growth.

Table 9.4 shows the prevalence of diarrhea in children under five years old during the two weeks prior to the survey. Two out of every 10 children presented with diarrhea symptoms, and of those, four out of every 10 were taken to a health facility for treatment. Half of the children with diarrhea in the RVCP Indirect Beneficiaries domain were treated at a health facility, while this percentage was considerably lower (39.2%) in the Health Only domain. Less than half of children with diarrhea received oral rehydration salts and less than two percent were given zinc.

Over 30 percent of children with diarrhea were given less to drink than normal or nothing to drink at all during the period of illness, and six in 10 were given less food than usual or no food at all.

Table 9.4. Diarrhea

Percentage of children under 5 years old with diarrhea during the preceding 2 weeks, by type of illness management

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Had diarrhea in the past 2 weeks	21.1	23.4	21.4	21.8
Number of cases	1,021	1,415	826	3,262
Was taken to a health facility	46.0	50.8	39.2	42.1
Was taken to a community health facility (community center or convergence center)	12.7	9.7	9.8	9.8
Was given oral rehydration solution	49.1	53.0	34.8	39.3
Was given zinc (any form)	1.4	3.8	1.3	1.9
Number of cases	201	320	177	698
Amount of liquids given during the diarrhea episode				
Much less	9.9	8.3	6.2	6.8
A little less	25.3	23.8	23.5	23.6
The same amount	39.4	43.0	41.4	41.7
More	21.9	24.6	27.0	26.3
Nothing to drink	3.6	0.3	2.0	1.6
Total	100.0	100.0	100.0	100.0
Number of cases	201	320	177	698
Amount of food given during the diarrhea episode				
Much less	10.5	12.1	16.7	15.5
A little less	39.9	44.7	38.8	40.2
The same amount	26.0	27.3	28.2	27.9
More	5.3	7.4	6.2	6.5
Stopped offering food	4.9	3.5	3.3	3.4
Never offered food	13.3	5.0	6.8	6.6
Total	100.0	100.0	100.0	100.0
Number of cases	201	320	177	698

9.4. Acute Respiratory Infection (ARI)

Acute respiratory infections are often linked to conditions in the home and seasonal climate changes, especially in rural areas. Table 9.5 shows the prevalence of acute respiratory infection suffered by children under five during the two weeks before the survey.

An estimated 15.1% of children in the ZOI had ARI symptoms, with little variation across study domains. Approximately 62% of children with ARI were taken to a health facility, with notable differences across study domains. An undesirable practice is using antibiotics or medication without first seeking care at health services; the survey established that medications were administered to children in 85.6% of ARI cases. When examining other homecare practices, it was established that in

four out of every 10 cases, children were given less than usual to drink, and were fed less or not at all in 75.3% of cases.

Table 9.5. Acute Respiratory Infections (ARI)

Percentage of children under 5 years old with a cough and rapid breathing during the previous 2 weeks, by type of illness management

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Had ARI in the past 2 weeks	17.3	17.2	14.4	15.1
Number of cases	1,021	1,415	826	3,262
Was taken to a health facility	56.2	67.8	60.3	62.0
Was taken to a community health facility (community center or convergence center)	22.4	10.1	24.0	20.5
Was administered antibiotics or other medication [*, †]	85.1	90.3	84.1	85.6
Number of cases	160	226	119	505
Amount of liquids given during the infection				
Much less	7.2	6.0	8.3	7.7
A little less	33.5	37.2	31.5	33.0
The same amount	31.2	34.3	31.3	32.0
More	25.1	21.8	28.5	26.7
Nothing to drink	3.0	0.7	0.5	0.6
Total	100.0	100.0	100.0	100.0
Number of cases	160	226	119	505
Amount of food given during the infection [‡]				
Much less	10.7	8.0	14.8	13.0
A little less	48.2	52.9	50.1	50.7
The same amount	21.1	24.0	20.1	21.1
More	1.5	5.0	3.1	3.5
Stopped offering food	8.7	5.1	4.0	4.4
Never offered food	9.7	5.0	7.9	7.2
Total	100.0	100.0	100.0	100.0
Number of cases	160	226	119	505

* Includes antibiotics, other medication, and home remedies.

† Excluding one case without information on medications administered

‡ Excluding four cases without information on the amount of liquids and foods given during the illness

10. Women's Empowerment

Women play a prominent role in agriculture and because of the persistent economic constraints they face, women's empowerment is a main focus of Feed the Future. Empowering women is particularly important to achieving the Feed the Future objective of inclusive agriculture sector growth. The Women's Empowerment in Agriculture Index (WEAI) was developed to track the change in women's empowerment levels that occurs as a direct or indirect result of interventions under Feed the Future. Annex 7 contains additional details relating to the calculation and interpretation of the index. For more information, the WEAI questionnaires and manual can also be found online.[11] In the EMEPAO baseline, WEAI questionnaire use was limited to a representative subsample of households in the ZOI. WEAI and its sub-index results are summarized in table 10.1 and explained in further detail below.

Table 10.1. ZOI Population-Based Indicators

WEAI and sub-index values for Guatemala

	n (unweighted)	Value (weighted)	SD	95% CI	DEFF	Non-response Rate
WEAI	1,173	0.77				
5DE sub-index	1,173	0.77	0.23	0.73-0.80	6.57	3.65
GPI sub-index	829	0.83	0.19	0.80-0.86	6.52	9.86

10.1. WEAI Overview

The WEAI measures the empowerment, agency, and inclusion of women in the agriculture sector in an effort to identify and address the constraints that limit women's full engagement in the agriculture sector.[12] The 5DE score ranges from zero to one, in which the highest values indicate greater empowerment.

For Guatemala, the WEAI score is 0.77. The WEAI is composed of two sub-indices: the five domains of empowerment sub-index (5DE) that measures the empowerment of women in five areas, and the Gender Parity Index (GPI) that measures the relative empowerment of men and women within the household. The WEAI score is computed as the weighted sum of the ZOI-level 5DE and the GPI (both discussed in the following section). Thus, improvements in either the 5DE or GPI will increase the WEAI score. The formula for the Index is: WEAI = 0.9 x 5DE + 0.1 x GPI.

The WEAI is an aggregate index reported at the ZOI level and is based on individual-level data from men and women in the same household, as well as data from women living in households with no adult male. The respondents are primary male/female decision makers in the household.

[11] International Food Policy Research Institute (IFPRI). (2013). http://www.ifpri.org/publication/womens-empowerment-agriculture-index.

[12] Alkire, S., Malapit, H., Meinzen-Dick, R., Peterman, A., Quisumbing, A., Seymour, G., & Vaz, A. (2013). Instructional Guide on the Women's Empowerment in Agriculture Index

10.1.1. 5DE

The 5DE sub-index assesses whether women are empowered across the five domains included explicitly in the WEAI. Each domain is weighted equally, as are each of the indicators within a domain. The five domains, the corresponding ten indicators, and their weights for the 5DE are shown in Table 10.2.

Table 10.2. WEAI Indicators

Domain (each weighted 1/5 of the 5DE sub-index	Indicators	Weight of indicator in 5DE sub-index
Production	Input in productive decisions	1/10
	Autonomy in production	1/10
Resources	Ownership of assets	1/15
	Purchase, sale, or transfer of assets	1/15
	Access to and decisions on credit	1/15
Income	Control over use of income	1/5
Leadership	Group member	1/10
	Speaking in public	1/10
Time	Workload	1/10
	Leisure	1/10

Table 10.3 shows that the 5DE in Guatemala is 0.77. As reflected in the formula above, this score is calculated using the percentage of women in the survey who are not yet empowered (disempowered headcount ratio – H), which is 57.5, and the average inadequacy score among not-yet empowered women (A), which is 40.8 %.[13]

Table 10.3. Women's 5DE Sub-Index

	Baseline Value
5DE sub-index	0.77
% of women achieving empowerment (score of 0.80 or greater) (1-Hn)	42.50
% of women not achieving empowerment (score below 0.80) (Hn)	57.50
Average adequacy score for women not yet empowered (1-A)	59.25
Average inadequacy score for women not yet empowered (A)	40.75
Number of cases	1,173

Table 10.4 reports the percentages of primary decision-maker females who are not yet empowered and have inadequacy for the ten indicators within each of the five domains of empowerment (i.e. the censored headcount). Refer to IFPRI documents for descriptions of each of the ten indicators including adequacy cutoffs.[14] In Table 10.5, results are shown for all women from both household types who responded to the WEAI module in the survey. Women who score above the 80% empowerment

[13] These are the results based on the calculations of this indicator, recognizing that most women in agriculture are subsistence farmers. For more information on the WEAI utilization by Feed the Future visit the following site: http://feedthefuture.gov/article/release-womens-empowerment-agriculture-index

[14] USAID. (2013b). Feed the Future Indicator Handbook: Definition Sheets (updated October 18, 2013).

threshold are not counted against the censored headcounts. To compute a censored headcount ratio for each indicator, the number of not yet empowered women who did not achieve adequacy on that indicator is divided by the total number of women who responded. The censored headcounts illustrate the profile of inadequate achievements of the not yet empowered. Focusing on women who are not yet empowered is important because it emphasizes specific ways that empowerment can be improved. Improvements in the achievements of women who are already empowered do not increase the 5DE score, an important property of the sub-index.

Table 10.4. Percentage of Women Who Are Not Yet Empowered and Who Have Inadequate Achievement (Censored Headcount) in the 5DE Indicators

Domain	Indicator	Censored Headcount*
Production	Input in productive decisions	40.52
	Autonomy in production	5.81
Resources	Ownership of assets	16.57
	Purchase, sale, or transfer of assets	32.12
	Access to and decisions on credit	53.43
Income	Control over use of income	25.75
Leadership	Group member	14.48
	Speaking in public	33.66
Time	Workload	14.69
	Leisure	5.60

*The censored headcount ratio for a particular indicator is the number of not-yet-empowered people who did not achieve adequacy on that indicator divided by the total population

10.1.2. GPI

The second sub-index in the WEAI is the the Gender Parity Index (GPI), which measures women's empowerment relative to that of men by comparing the 5DE profiles of women and men in the same households. A woman is assumed to achieve gender parity if her achievements in the five domains are at least as high as the primary male decision-maker in her household. The GPI reflects the percentage of women who have achieved parity and, in cases of gender disparity, the average empowerment gap that women experience relative to their male counterparts. While the 5DE score is calculated using all women in the sample, the GPI score is calculated using only women living in a household with at least one adult man (often her partner).

Table 10.5 shows the details of the baseline values by GPI variables.

Table 10.5. GPI

	Baseline Value
GPI	0.83
% of women achieving gender parity (1-H_{GPI})	35.44
% of women without gender parity (H_{GPI})	64.56
Average Empowerment Gap (I_{GPI})	26.51
N	829

Table 10.6 shows that men and women in dual households report significant differences in eight of the ten 5DE indicators. Significantly more women than men are not yet empowered and are inadequate in all of the indicators, except autonomy in production and satisfaction with leisure time.

Table 10.6. Percentage of Women Who Are Not Yet Empowered And Who Have Inadequate Achievement (Censored Headcount) in the 5DE Indicators

Domain	Indicator	Male censored Headcount* (n=829)	Female censored Headcount† (n=829)
Production	Input in productive decisions	0.50[a]	48.86[a]
	Autonomy in production	4.13	6.16
Resources	Ownership of assets	2.87[b]	20.62[b]
	Purchase, sale, or transfer of assets	8.49[c]	35.68[c]
	Access to and decisions on credit	14.55[d]	60.58[d]
Income	Control over use of income	0.02[e]	30.73[e]
Leadership	Group member	5.92[f]	16.37[f]
	Speaking in public	3.03[g]	38.71[g]
Time	Workload	3.85[h]	17.32[h]
	Leisure	4.31	6.00

[a-h] Subgroups with the same superscript are significantly different at the 0.05 level. The comparisons are across columns. Comparison and estimates for men and women living in male and female adult households.

* Male censored headcounts are the percentage of men who are not yet empowered and have inadequate achievement in the indicator.

† Female censored headcounts are the percentage of women who are not yet empowered and have inadequate achievement in the indicator.

11. Participation in Agricultural Activities

It is important to understand the baseline conditions in which the WHIP agricultral component will operate. These conditions include a series of inputs, such as: human resources in agriculture; land ownership; ownership of agricultural/livestock materials and equipment, etc., that are available in households and that are essential for improving productive output. Proper understanding of baseline characteristics will also help to design the best possible impact evaluation.

This chapter covers indicators related to the level of participation of household members in agricultural and livestock-raising activities or the production of other animal products. In addition, it summarizes the production assets owned by households and establishes if households received any type of production assistance in the 12 months before the survey. The analysis was performed in the three groups of households constituting the Zone of Influence.

11.1. Participation in Agricultural Activities

An estimated 70.1% of ZOI households reported that at least one household member age 12 years or older worked as a farmer or farm laborer during the previous 12 months (see Table 11.1). This percentage was higher in the RVCP Direct Beneficiaries domain, where 90.8% of households had at least one member performing this type of work. In the RVCP Direct Beneficiaries domain, most field workers were farmers, that is, individuals who owned the land where they worked, while in the RVCP Indirect Beneficiaries and Health Only domains a considerable percentage (approximately 20%) were employed as farm laborers, that is, working the land of third parties for a wage. At the individual level, approximately 30% of people in the ZOI reported working in agriculture. The percentage was slightly higher in the RVCP Direct Beneficiaries group.

Signficant variations were evident in households food production for personal consumption, and those in the RVCP Direct Beneficiaries domain were, by far, the most likely to grow food for their own use (approximately 20%). This contrasts with 8.9% and 12.7% in the RVCP Indirect Beneficiaries and Health Only domains, respectively.

Table 11.1. Participation in Agricultural or Livestock/Raising Activities

Characteristics	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Percentage of households with a member 12 years or over whose main occupation is farming	86.2	49.5	46.6	48.3
Percentage of households with a member 12 years or over whose main occupation is working as a farm laborer	4.6	24.9	21.5	21.8
Number of cases	1,233	1,477	850	3,560
Percentage of household members 12 years or over who work in agriculture *	33.9	30.3	26.0	27.1
Number of cases	5,592	6,256	3,803	15,651
Percentage of households that produce food for household consumption†	19.8	8.9	12.7	12.1
Number of cases	1,264	1,746	997	4,007

* Excluding 32 cases without any information on occupations

† Excluding one case with no information on food produced for household consumption

11.2. Participation in Agricultural, Commercial or Exporters' Associations

In almost all RVCP Direct Beneficiary households (98.1%) at least one member participates in an agricultural, commercial or export association, committee, or cooperative (see Table 11.2). This result is not surprising, since the RVCP Direct Beneficiaries group includes members of RVCP associations by definition. However, this percentage contrasts radically with reports from households in the other two domains, where a mere 1% reported participating in such an association or group.

Table 11.2. Participation in Producers' Associations

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Percentage of households in which a member participates in an agricultural, commercial or export association, committee or cooperative [2]	98.1	0.8	1.1	3.7
Number of cases	1,264	1,746	997	4,007
Percentage of households in which a member participates in some type of association, committee or cooperative, by type of cooperative or association				
Agricultural	81.0	50.7	13.6	63.9
Commercialization	11.7	4.9	8.2	10.6
Savings and loans	6.2	44.0	54.3	19.1
Artisan	1.7	0.0	0.0	1.3
Transportation	0.0	0.0	12.9	3.0
Others	0.3	0.4	0.0	0.2
Number of cases	1,232	20	11	1,263

*Others: housing, insurance, education, livestock, consumption

The vast majority of producers' association members stated that they participated in agricultural associations, followed by associations linked to product commercialization and savings and loans activities. Of note, a very low percentage of households –less than 2%– reported participating in artisans' associations.

11.3. Agricultural Production

In most households –nearly 85%– there was at least one member who reported having had land to plant or harvest agricultural products, raise or have animals or cut trees in the 12 months preceding the survey. As shown in Table 11.3, this percentage was higher than for the RVCP Direct Beneficiaries domain. Nearly all households in the RVCP Direct Beneficiaries domain with land for production use (96.5%) reported using it to harvest a food crop, while in the other two groups, only approximately 75% of households reported using the land for agricultural production.

The most commonly harvested products among ZOI households were coffee, corn, and black beans. Approximately 82% of households produced coffee; 67% harvested corn, and 45.1% produced black beans. In the RVCP Indirect Beneficiaries domain the three main products were also corn, coffee, and black beans, in that order. Unlike the groups exposed to the RVCP component, the Health Only group was found to have slightly greater agricultural product diversification. These households tended to grow corn, black beans, potatoes, and fava beans, and to a lesser extent, coffee.

Table 11.3. Agricultural Production

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Percentage of households who had access to land to plant or harvest agricultural products, raise animals, or cut trees, in the previous 12 months	98.4	81.8	84.9	84.6
Percentage of households that harvested an agricultural product	96.5	72.0	76.2	75.8
Number of cases	1,252	1,733	984	3,969
Percentage of households that harvested an agricultural product during the previous 12 months, by number of products harvested				
One agricultural product	23.2	35.0	31.2	31.7
Two agricultural products	22.9	32.7	34.5	33.7
Three agricultural products	25.5	19.5	18.6	19.0
Four agricultural products	16.4	8.5	8.9	9.1
Five or more agricultural products	12.1	4.4	6.8	6.5
Total	100.0	100.0	100.0	100.0
Number of cases	1,216	1,326	762	3,304
Percentage of households that harvested any agricultural product during the previous 12 months				
White, yellow or black corn	66.9	78.0	86.7	84.2
Coffee	81.7	49.0	15.8	24.9
Black beans	45.1	37.9	40.2	39.9
Potatoes	1.0	1.9	11.1	8.9
Fava beans	0.2	0.3	5.7	4.4
Number of cases	1,216	1,326	762	3,304

11.4. Animal Husbandry

In addition to harvesting food crops, most households in the ZOI (70.1%) raised farm animals in the 12 months preceding the survey. This activity was undertaken in 82.1% of households in the RVCP Direct Beneficiaries domain, 65.2% of households in the RVCP Indirect Beneficiaries domain, and 71% of households exposed only to health interventions. Table 11.4 shows that hens and chickens were most preferred for farming in the ZOI, followed by pigs, ducks, and turkeys. Horses, donkeys, or mules were raised by 27.7% of RVCP Direct Beneficiaries households, a considerably higher percentage than that observed in the other two groups, especially the Health Only domain. Other important differences were evident in the proportion raising sheep or *peligüeyes*, which was more common in the Health Only domain, as well as in bee production and goat raising, which were reported the most frequently in the RVCP Direct Beneficiaries domain. Few households reported having raised goats or farming bees, fish, or shrimp.

Table 11.4. Animal Husbandry

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Percentage of households that raised animals such as poultry, cattle, pigs, horses, sheep, fish or bees	82.1	65.2	71.0	70.1
Number of cases	1,252	1,733	984	3,969
Percentage of households that raised a farm animal during the previous 12 months, by type of animal				
Hens or chickens	92.1	91.1	90.5	90.7
Pigs	40.0	35.2	47.8	45.0
Horses, donkeys, and mules	27.7	15.1	6.8	9.2
Ducks	23.6	19.4	20.3	20.2
Turkeys	21.5	16.2	27.3	24.9
Cows, bulls or calves	12.8	8.6	14.7	13.4
Sheep or *peligüeyes*	6.8	4.8	12.7	10.9
Goats	2.6	0.8	0.7	0.8
Bees	2.1	0.7	0.2	0.4
Fish or shrimp	0.3	0.3	0.0	0.1
Number of cases	1,058	1,216	713	2,987

11.5. Animal Products

As part of the expenditures and consumption questionnaire, interviewees were asked if they produced animal products such as milk, cheese, cream, honey, eggs, lard, sausages, butter, wool, and meat. Table 11.5 shows that 45.5% of households in the Zone of Influence made or produced one of the previously mentioned products during the 12 months preceding the survey. The vast majority, more than 80% of households, produced eggs, and meat production was the next most common category. In all cases, a higher percentage of households in the RVCP Direct Beneficiaries domain performed these activities, compared to households in the other groups.

Table 11.5. Producing or Gathering Animal Products

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Percentage of households that produced or generated an animal product during the previous 12 months	57.4	42.2	46	45.5
Number of cases	1,252	1,733	984	3,969
Percentage of households that produced or generated an animal product during the previous 12 months, by type of product				
Hen eggs	88.8	86.2	81.7	82.9
Meat	76.8	69.2	66.5	67.4
Dairy products: milk, cheese, butter, or cream	5.9	5.0	4.3	4.5
Wool	1.2	0.3	3.7	2.9
Other products: sausages, lard or honey	3.6	1.2	1.3	1.4
Number of cases	748	812	457	2,017

11.6. Ownership of Agricultural/Livestock Equipment

Significant variations were found in regard to ownership of agricultural/livestock equipment. Households in the RVCP Direct Beneficiaries domain were better equipped and, consequently, in a better position to undertake agricultural/livestock activities. As shown in Table 11.6, 61.7% of households in the RVCP Direct Beneficiaries domain have a sprayer, while 36% of other households reported having one. Other differences also favored households in the RVCP Direct Beneficiaries domain, including higher ownership of a wagon or cart, a chainsaw, a truck or pickup, and irrigation equipment.

Table 11.6. Ownership of Agricultural/Livestock Equipment

Percentage of households reporting ownership of selected agricultural/livestock equipment

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Sprayer	61.7	37.6	34.5	36.0
Bin, barrel or others	12.8	8.8	11.8	11.2
Wagon or cart	12.3	7.5	9.4	9.1
Chainsaw	8.6	4.0	2.2	2.8
Truck or pick-up truck	6.6	1.0	1.5	1.6
Saddle	3.8	4.1	1.0	1.8
Irrigation equipment	4.0	1.0	0.6	0.8
Horse-drawn plow	1.2	0.6	0.7	0.7
Irrigation pump	1.0	0.4	1.6	1.4
Number of cases	1,233	1,477	850	3,560

In contrast to production assets, ownership of agricultural/livestock facilities was not widespread in ZOI households. Scarcely 35% of households reported that they had a henhouse (see Table 11.7). The other two facilities that were most reported were pigpens and general pens, present in almost 17% of households. Less than 5% of households in the ZOI reported having silos, sheds, stables, mills, troughs, and driers. There are some evidence of differences indicating that households in the RVCP Direct Beneficiaries domain are more likely to own production facilities such as silos, sheds, stables, mills, troughs, and driers; however, those differences were not significant.

Table 11.7. Ownership of Agricultural/Livestock Facilities

Percentage of Households with Certain Agricultural/Livestock Facilities

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Henhouse	34.1	33.7	35.4	35.0
Pigpen	12.8	8.4	19.6	17.1
General pen	14.1	11.9	18.3	16.8
Silo	5.9	3.2	4.3	4.1
Shed	5.9	2.7	3.4	3.3
Stable	5.1	2.0	2.4	2.4
Mill	5.9	3.9	1.1	1.8
Well	1.5	1.1	1.8	1.7
Trough	6.5	4.2	0.7	1.6
Feeding trough	1.7	0.9	0.7	0.8
Drier	4.3	1.6	0.2	0.6
Number of cases	1,233	1,477	850	3,560

11.7. Technical Assistance

Lastly, indicators on technical assistance received by households during the twelve months preceding the survey reveal that 65% of households in the RVCP Direct Beneficiaries domain had received assistance for production. This percentage contrasts radically with the 3.5% and the 2.3% of the households in the RVCP Indirect Beneficiaries and Health Only domains, respectively, which reported receiving this kind of technical assistance (see Table 11.8). When asked about the source of the assistance, respondents mentioned cooperatives and private companies most often in the RVCP Direct Beneficiaries domain, while the Government (through the Ministry of Agriculture, Livestock, and Food), the private sector, and NGOs were the institutions most mentioned by the RVCP Indirect Beneficiaries and those in the Health Only domain.

Table 11.8. Agricultural/Livestock Technical Assistance

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Percentage of households in which a member received technical assistance in the previous 12 months	65.0	3.5	2.3	4.6
Number of cases	1,233	1,477	850	3,560
Percentage of households that received agricultural/livestock technical assistance in the previous 12 months, by institution that provided the assistance				
Cooperatives	68.6	11.0	9.5	36.5
Private companies	25.5	18.1	34.7	27.8
Ministry of Agriculture, Livestock and Food (MAGA)	4.8	54.6	35.6	24.8
Non-Governmental Organization (NGO)	6.5	13.3	13.4	10.3
International institution	2.2	0.5	7.6	4.0
Individual	0.5	3.9	5.9	3.1
Number of cases	825	56	21	902

Overall, results suggest that households in the RVCP Direct Beneficiaries domain have greater productive potential due to a higher prevalence of related asset ownership and technical assistance received, which could be related to the membership criteria of supporting associations, including RVCP selection criteria.

12. Health Facilities

Health services in Guatemala are provided mainly by the Ministry of Public Health and Social Assistance (MSPAS in Spanish), the Instituto Guatemalteco de Seguridad Social (Guatemalan Social Security Institute–IGSS in Spanish), non-governmental organizations (NGOs) hired as service providers by the MSPAS, and private service providers. In the Northwestern and Southwestern Highlands, the MSPAS is the entity meeting the need for these services.

The MSPAS organizes its facilities into three levels of care. The first level is directly linked to the community and it is made up entirely of preventive care services. The second level includes facilities with more staff, equipment and supplies, such as birth-care centers and centers with the capability to provide basic hospital care. The third level is the hospital system.

Fifteen years ago, an alternative proposal was introduced, the Integral Health-Care System (Sistema Integral de Atención en Salud–SIAS in Spanish), which was based on establishing a direct relationship with the community in order to meet preventive care needs. Currently, there are several models based on community work: the program that the MSPAS established is called the Programa de Extensión de Cobertura (Coverage Extension Program–PEC in Spanish). The other models are not well-developed.

The following tables show the survey results for facilities located in WHIP Zone of Influence. Most facilities in the ZOI are first or primary level establishments providing services at the community level. See Table 12.1.

Table 12.1. Percentage Distribution of Health Facilities by Level of Care

Level and Type of Facility	ZOI	Number of cases
Level		
First (primary)	88.7	141
Second (secondary)	11.3	18
Total	100.0	159
Type of facility		
Health center	3.8	6
Health post	19.5	31
Community health center	13.2	21
Mother/Child Integral Care Center	0.6	1
Permanent Medical Healthcare Center	6.9	11
Convergence center	54.1	86
Other public sector facilities	1.9	3
Total	100.0	159

Of facilities designed to offer basic maternal and child health care in accordance with MSPAS norms, 31% appear to be in complinace with said norms. Birth attendance and related services are offered by 34% of these facilities. See Table 12.2.

Table 12.2. Percentage of Health Facilities Providing Basic Mother/Child Care

	ZOI
Type of service	
All services	31.5
Distribution of family planning methods	98.7
Family planning counseling	100.0
Prenatal care	97.5
Vaccination for pregnant women	98.7
Birth attendance	34.0
Children's post-natal care	96.2
Well-child checkups	98.7
Care for diarrheal diseases	99.4
Care for acute respiratory illness in children	86.8
Nutritional supplements for children	98.7
Number of cases	159

The type of staff working at health care facilities is closely related to the level of care provided. Medical professionals are highly concentrated in Mother/Child Integral Care Centers and in Permanent Care Centers. Nursing personnel are present in all service categories. See Table 12.3.

Table 12.3. Percentage of Health Facilities by Type of Medical Staff Available

Type of facility	General Physicians	Nurses	Nursing Assistants	Health Promoters	Obstetricians	Gynecologists	Pediatricians	Dentistry Students or Interns	Medical Students or Interns	Number of cases
Health center	83.3	83.3	100.0	50.0	0.0	0.0	0.0	16.7	0.0	6
Health post	19.4	45.2	100.0	22.6	0.0	0.0	0.0	0.0	32.3	31
Community health center	0.0	33.3	71.4	33.3	0.0	0.0	0.0	0.0	4.8	21
Mother/Child Integral Care Center	100.0	100.0	100.0	0.0	0.0	100.0	100.0	100.0	100.0	1
Permanent Medical Healthcare Center	100.0	90.9	100.0	18.2	0.0	0.0	9.1	0.0	9.1	11
Convergence center	7.0	27.9	88.4	60.5	1.2	0.0	0.0	0.0	0.0	86
Other public-sector facilities	33.3	33.3	100.0	33.3	0.0	0.0	0.0	0.0	0.0	3
Total	18.9	39.0	89.9	45.3	0.6	0.6	1.3	1.3	8.2	159

More recently constructed facilities including Mother/Child Integral Care Centers and Permanent Medical Healthcare Centers are in better physical condition than other facilities, since they were built recently. There is significant need for infrastructiure improvement. See Tables 12.4 and 12.5 for details.

Table 12.4. Percentage of Health Facilities with Roofs, Walls, Windows, and Floors in Good Condition

	ZOI
Type of facility	
Health center	16.7
Health post	12.9
Community health center	33.3
Mother/Child Integral Care Center	0.0
Permanent Medical Healthcare Center	9.1
Convergence center	19.8
Other public-sector facilities	0.0
Total	18.87
Number of cases	159

Table 12.5. Percentage of Health Facilities with Basic Infrastructure

	Percentage with:				
		Components of Basic Infrastructure:			
Type of facility	All Basic Infrastructure	Electricity	Drinking Water	Refrigerator	Instrument Sterilizer
Health center	83.3	100.0	100.0	83.3	100.0
Health post	64.5	90.3	83.9	93.6	77.4
Community health center	0.0	61.9	47.6	19.1	0.0
Mother/Child Integral Care Center	100.0	100.0	100.0	100.0	100.0
Permanent Medical Healthcare Center	100.0	100.0	100.0	100.0	100.0
Convergence center	4.7	68.6	58.1	22.1	9.3
Other public-sector facilities	0.0	33.3	33.3	33.3	0.0
Total	25.8	74.8	66.0	44.0	31.5

On-site pharmacies are universal at Mother/Child Integral Care Centers and Permanent Medical Healthcare Centers. A considerable percentage of health centers, health posts, and other public sector facilities also reported on-site pharmacy services. See Table 12.6.

Table 12.6. Percentage of Health Facilities with a Pharmacy in the Facility

	ZOI
Type of facility	
Health center	66.7
Health post	48.4
Community health center	14.3
Mother/Child Integral Care Center	100.0
Permanent Medical Healthcare Center	100.0
Convergence center	27.9
Other public-sector facilities	33.3
Total	37.1
Number of cases	159

Most facilities, even community level ones, report having essential equipment: a scale, measuring board, and blood pressure cuff. See Table 12.7.

Table 12.7. Percentage of Health Facilities with Essential Medical Equipment

	Has all three	Percentage that have:		
		Scale	Measuring Board	Blood Pressure Cuff
Type of facility				
Health center	100.0	100.0	100.0	100.0
Health post	61.3	90.3	100.0	71.0
Community health center	33.3	85.7	76.2	42.9
Mother/Child Integral Care Center	0.0	100.0	100.0	0.0
Permanent Medical Healthcare Center	90.9	100.0	100.0	90.9
Convergence center	67.4	97.7	90.7	69.8
Other public-sector facilities	0.0	66.7	100.0	0.0
Total	62.9	94.3	91.8	67.3

Informants at 94% of facilities stated that during the six months preceding the survey they had experienced at least one stockout. Stockouts of family-planning methods were common, as were vaccine stockouts, which affected 40% of facilities. See Table 12.8.

Table 12.8: Percentage of Health Facilities with Supply Stockouts during the Previous 6 Months

Type of facility	At least one stockout	Contraceptive methods	Iron supplements	Vitamin A for women	Tetanus toxoid vaccines	Folic acid	Vitamin A for children	BCG Vaccines	Pentavalent vaccines	Pneumococcus vaccines	OSR packages	Nutrition supplements for children	Disposable needles	Disposable gloves
Health center	83.3	66.7	16.7	50.0	16.7	16.7	50.0	16.7	16.7	16.7	50.0	33.3	16.7	16.7
Health post	100.0	58.1	48.4	54.8	16.1	51.6	61.3	22.6	16.1	22.6	54.8	16.1	48.4	48.4
Community health center	90.5	61.9	33.3	61.9	57.1	42.9	57.1	71.4	71.4	66.7	38.1	42.9	57.1	76.2
Mother/Child Integral Care Center	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0
Permanent Medical Healthcare Center	81.8	54.6	27.3	45.5	18.2	36.4	45.5	18.2	27.3	27.3	45.5	54.6	36.4	36.4
Convergence center	94.2	66.3	30.2	48.8	45.4	30.2	51.2	43.0	45.4	50.0	39.5	39.5	53.5	53.5
Other public-sector facilities	100.0	66.7	66.7	100.0	66.7	66.7	100.0	66.7	66.7	66.7	66.7	66.7	66.7	66.7
Total	93.7	62.9	34.0	52.8	38.4	36.5	54.1	40.3	40.9	44.0	44.0	36.5	50.3	53.5

Micronutrients were available in 19% of facilities; over 90% had a supply of ferrous sulphate and folic acid in stock. See Table 12.9.

Table 12.9. Percentage of Health Facilities with a Supply of Micronutrient Supplements

Type of facility	All available supplements	Had a supply of: Ferrous sulphate (solution or tablets)	Folic acid	Zinc	Vitamin A
Health center	16.7	100.0	83.3	66.7	33.3
Health post	35.5	96.8	90.3	83.9	45.2
Community health center	0.0	81.0	81.0	71.4	0.0
Mother/Child Integral Care Center	0.0	100.0	100.0	100.0	0.0
Permanent Medical Healthcare Center	54.6	100.0	90.9	90.9	63.6
Convergence center	15.1	93.0	96.5	67.4	16.3
Other public-sector facilities	0.0	100.0	100.0	66.7	0.0
Total	19.5	93.1	92.5	73.0	23.3

Medications that are considered basic were widely available across facility categories. See Table 12.10.

Vaccine availability is related to facility service level and is seasonal, since facilities establish their own strategies to vaccinate as many children as possible. See Table 12.11.

Table 12.10. Percentage of Health Facilities with Basic Medications Available, by Type of Medication

Type of Facility	Type of Medication																
	Analgesics	Anesthesia	Cardiology	Dermatology	Endocrinology and metabolism	Infectious and parasitic diseases	Immuno-allergic illnesses	Gastroenterology	Gynaeco-obstetrics	Hematology	Nephrology and urology	Pneumology	Neurology	Nutrition	Ophthalmology	Rheumatology and traumatology	Electrolytic solution
Health center	100.0	100.0	33.3	0.0	0.0	100.0	66.7	66.7	33.3	100.0	0.0	83.3	16.7	100.0	66.7	66.7	83.3
Health post	93.5	87.1	25.8	32.3	3.2	100.0	87.1	54.8	51.6	96.8	0.0	74.2	3.2	100.0	87.1	83.9	93.5
Community health center	95.2	9.5	0.0	0.0	0.0	95.2	95.2	85.7	0.0	85.7	0.0	52.4	0.0	85.7	23.8	4.8	90.5
Mother/Child Integral Care Center	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0	100.0	0.0	100.0	100.0	100.0	100.0
Permanent Medical Healthcare Center	100.0	90.9	72.7	18.2	9.1	100.0	81.8	63.6	63.6	100.0	0.0	81.8	36.4	100.0	90.9	90.9	100.0
Convergence center	93.0	23.3	2.3	0.0	0.0	96.5	82.6	76.7	4.7	93.0	0.0	54.7	0.0	97.7	14.0	1.2	93.0
Other public-sector facilities	100.0	33.3	0.0	0.0	0.0	100.0	33.3	100.0	0.0	100.0	0.0	0.0	0.0	100.0	33.3	33.3	100.0
Total	94.3	42.1	13.2	7.5	1.9	97.5	83.6	73.0	18.9	93.7	0.0	60.4	3.8	96.9	37.7	27.7	93.1

* Classification of the first level of care according to the "Basic Medication Table and Catalog", 2009 edition, Consejo de Salubridad, Mexico. Taken from: http://www.who.int/selection_medicines/country_lists/Mexico_medicamentos2009.pdf

Table 12.11. Percentage of Health Facilitiess with Available Vaccines, by Type of Vaccine

Type of facility	Type of Vaccine													
	Tetanus and diphtheria toxoid	Influenza	Pneumococcal	Pertussis with diphtheria and tetanus toxoids (DPT)	Oral Polio (OPV)	Canine anti-rabies	Human anti-rabies	BCG	Rotavirus	Hepatitis B	Pediatric hepatitis B	Double viral (MR)	Triple viral (MMR)	Pentavalent
Health center	83.3	33.3	83.3	83.3	83.3	66.7	66.7	83.3	83.3	0.0	83.3	0.0	83.3	83.3
Health post	74.2	35.5	77.4	74.2	77.4	9.7	6.5	61.3	71.0	16.1	64.5	0.0	74.2	80.7
Community health center	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mother/Child Integral Care Center	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0	100.0	0.0	100.0	100.0
Permanent Medical Healthcare Center	100.0	54.6	90.9	100.0	90.9	81.8	81.8	100.0	90.9	18.2	90.9	0.0	100.0	90.9
Convergence center	7.0	2.3	7.0	7.0	7.0	0.0	0.0	4.7	7.0	0.0	3.5	0.0	7.0	3.5
Other public-sector facilities	33.3	0.0	33.3	33.3	33.3	0.0	0.0	33.3	33.3	0.0	33.3	0.0	33.3	33.3
Total	30.2	13.8	29.6	29.6	29.6	10.7	10.1	25.8	28.3	4.4	25.2	0.0	29.6	28.3

Contraceptive methods are also widely available in health facilities but prevalence differs by facility level. See Table 12.12.

Table 12.12. Percentage of Health Facilities with Contraceptive Method Availability

Type of facility	Progesterone 1 and 3 months, injectable	Condom	Oral combined with pills	Copper T (IUD)
Health center	100.0	66.7	66.7	83.3
Health post	83.9	93.6	90.3	6.5
Community health center	33.3	19.1	14.3	0.0
Mother/Child Integral Care Center	100.0	100.0	100.0	100.0
Permanent Medical Healthcare Center	90.9	90.9	63.6	90.9
Convergence center	50.0	41.9	38.4	0.0
Other public-sector facilities	33.3	33.3	33.3	0.0
Total	59.1	53.5	48.4	11.3

13. Community

The EMEPAO 2013 Community Survey was aimed at gathering information on the characteristics of communities where WHIP households are located. The characteristics being examined are those that may affect behaviors and decisions pertaining to individuals' health, as well as factors linked to agricultural production. The community survey also sought to obtain basic information on the presence of public services, other programs and community organizations, availability and access to health services, and markets and organizations connected to production activities.[15]

Information was gathered through in-person interviews with local leaders familiar with the communities' characteristics. Generally, interviewees included local civil authorities, school teachers, health facility directors or community workers.

13.1. Road Infrastructure and Public Transportation

Table 13.1 shows that slightly more than half of households in the ZOI (52.4%) are located in communities with paved or ballasted access roads. Almost all households are located in communities accessible by a dirt road.

Table 13.1. Means of Access

Percentage of households located in communities, by means of access

	RVCP Direct and Indirect Beneficiaries	Health Only	ZOI
Type of access			
Paved or ballasted road	53.5	52.1	52.4
Dirt road	94.3	100.0	98.5
Horse trail with no ballast	57.7	37.2	42.7
Trails	100.0	100.0	100.0
Number of cases	89	34	123

Access to public transportation services is not universal. Only 60.6% of households are located in communities with public transportation (see Table 13.2).

[15] Since the Community Survey was applied in census tracts that were selected for the household survey, community indicators must be interpreted as the "percentage of households located in communities with an X characteristic", or as the "percentage of households with community services Y". Additionally, given that the Community Module considers the community or the census tract as the analysis unit, the effective number of cases is the number of census tracts in each domain. In the RVCP Beneficiaries Zone (domains 1 and 2) 89 census tracts were selected and in the Health Only Zone, 34 were selected. Given the reduced number of cases, it is recommended that the results be interpreted only at the ZOI level.

Table 13.2. Public Transportation

Percentage of households located in communities with public transportation

	RVCP Direct and Indirect Beneficiaries	Health Only	ZOI
With public transportation service	68.1	57.8	60.6
Number of cases	89	34	123
Part of the community with access to service			
Whole community	74.4	81.8	76.6
More than half	25.6	13.4	21.9
Half	.	4.9	1.5
Total	100.0	100.0	100.0
Number of cases	21	59	80

13.2. Water, Sanitation, and Garbage Collection

Almost every household in the ZOI is located in a community with piped water services (96.2%), most of them provided by the community itself, and to a lesser extent, by the municipal system (see Table 13.3). Most communities reported this was a permanent service. However, only half of households (55.2%) are located in communities in which the entire community has access to piped water.

Table 13.3 Piped Water Service

Percentage of households located in communities with piped water service

	RVCP Direct and Indirect Beneficiaries	Health Only	ZOI
Has piped water service	96.9	94.1	96.2
Number of cases	89	34	123
Source of service supply			
Municipal system	16.3	11.8	13.0
Community	81.2	88.2	86.4
Others	2.5	.	0.6
Total	100.0	100.0	100.0
Number of cases	83	33	116
Availability of the service during the dry season (frequency)			
Permanently or always	62.0	60.1	60.6
Only at night	11.9	12.0	12.0
Only during the day	6.8	.	1.8
Only some hours per day	0.8	4.2	3.3
Only some days of the week	10.3	13.4	12.6
Only some hours per day during certain days of the week	3.1	3.1	3.1
Other answers	5.1	7.1	6.6
Total	100.0	100.0	100.0
Number of cases	83	33	116
Availability of the service during the rainy season			
Permanently or always	95.1	97.9	97.1
Only at night	.	.	.
Only during the day	.	2.1	1.6
Other answers	4.9	.	1.3
Total	100.0	100.0	100.0
Number of cases	83	33	116
Perception of water quality			
Good	52.5	72.9	67.6
Fair	47.5	19.6	26.9
Bad	.	7.5	5.6
Total	100.0	100.0	100.0
Number of cases	83	33	116
Part of the community with access to the service			
Whole community	51.5	56.6	55.2
More than half	38.7	43.4	42.2
Half	7.7	.	2.0
Less than half	2.1	0.0	0.6
Total	100.0	100.0	100.0
Number of cases	83	33	116

As shown in Table 13.4, almost all households are located in communities with a latrine or a cistern (98.4%) but less than half (42.5%) are located in communities with toilet facilities connected to a sewage system. Only 9.7% of households are located in communities with garbage collection service.

Table 13.4. Sanitary Facilities and Garbage Collection Service

Percentage of households located in communities with access to sanitary facilities and garbage collection services

	RVCP Direct and Indirect Beneficiaries	Health Only	ZOI
Type of sanitary facility			
Toilets or washable latrines connected to a sewer system or drainage	41.5	42.9	42.5
Latrine or cistern	94.6	99.9	98.4
Toilets or washable latrines connected to a septic tank	47.4	36.2	39.2
With garbage collection or elimination service	17.4	6.9	9.7
Number of cases	89	34	123
Part of the community with access to garbage-collection service			
Whole community	44.3	2.7	22.6
More than half	42.6	97.3	71.1
Half	13.1	.	6.3
Total	100.0	100.0	100.0
Number of cases	9	4	13

13.3. Social Development Programs and Organizations

The vast majority of ZOI households are located in communities where the *Bono Seguro* program is being implemented (92.3%) and where the fertilizer program is active (81.8%), see Table 13.5. Other programs have a very limited presence in ZOI communities. There is, however, a considerable presence of community organizations in the ZOI. The vast majority of households are located in communities with a neighborhood association or committee (92.6%); water, waste disposal or garbage committee (97%) committee; or a religious group (100%). 63.3% of households are located in communities that have health committees. Only 18.3% of households are located in communities with agricultural producer groups, and 21.6% in communities with savings and loan groups.

Table 13.5. Social Development Programs and Organizations

	RVCP Direct and Indirect Beneficiaries	Health Only	ZOI
Percentage of households located in communities with access to social assistance programs and organizations			
Program or organization:			
Bolsa segura[*]	29.2	12.9	17.3
Bono seguro[†]	99.5	89.6	92.3
Household silo	0.0	0.0	0.0
Household vegetable garden	8.1	7.7	7.8
School vegetable garden	6.6	8.1	7.7
Fertilizer program	77.6	83.3	81.8
"Nixtamalized" corn and soy flour	4.1	10.5	8.8
Fruit production	0.0	0.0	0.0
Apiary development	0.0	0.0	0.0
Technological package	0.0	2.6	1.9
Agro-forestry system implementation	4.2	5.0	4.8
Mini-irrigation systems	1.6	6.4	5.1
Agricultural/livestock technical assistance	4.8	0.0	1.3
Number of cases	89	34	123
Percentage of households located in communities with community organizations			
Type of organization			
Neighborhood association or committee	94.3	92.0	92.6
Indigenous association	9.4	15.3	13.7
Agricultural, artisan cooperative or others	27.2	18.3	20.7
Civic group	0.0	0.0	0.0
Sports group	74.0	69.2	70.5
School committee	96.4	96.9	96.8
Women's committee	77.6	73.7	74.8
Water, waste, garbage committee	89.0	100.0	97.0
Producers' committee	40.6	10.1	18.3
Business association	8.1	0.0	2.2
Loan group	20.1	22.1	21.6
Political group	18.6	38.3	33.0
Youth group	35.8	32.7	33.5
Religious group	100.0	100.0	100.0
Cultural group or association	17.6	5.5	8.7
Parents' association	57.5	49.7	51.8
Non-government organization (NGO)	67.1	55.9	58.9
Housing committee	10.0	6.8	7.6
Health committee	70.1	60.8	63.3
Number of cases	89	34	123

*: Bolsa Segura is a temporary Government program that periodically distributes a bag of foodstuffs to families who are vulnerable due to poverty and/or crises, and that live in Guatemala's risk areas. Source: Guatemala. Fuente: http://www.mides.gob.gt/programas-sociales/mi-bolsa-segura

†: Bono Seguro is a Government program aimed at households living in poverty or extreme poverty. It provides for Conditional Cash Transfers (CCT) that encourage greater use of health and education services among beneficiaries. Source: http://www.mides.gob.gt/programas-sociales/mi-bono-seguro

13.4. Schools

As shown in Table 13.6, almost all ZOI households are located in communities with primary schools (99.8%) and pre-primary schools (91.5%). Almost 80% of households are located in communities with at least one bilingual school (in which Spanish and at least one Mayan language are spoken).

Table 13.6. Schools

Percentage of households located in communities with access to public education services

	RVCP Direct and Indirect Beneficiaries	Health Only	ZOI
At least one school offering:			
Pre-primary	81.1	95.3	91.5
Primary	99.5	100.0	99.8
Lower secondary	38.8	50.8	47.6
Upper secondary	4.9	15.0	12.3
Number of cases	89	34	123
At least one school with instruction in:			
Both languages: Spanish and Mayan, or bilingual	77.7	80.4	79.7
Only Spanish	21.7	19.5	20.1
Total	100.0	100.0	100.0
Number of cases	89	34	123
School attendance among primary school-aged students			
All of them attend	29.9	32.5	31.8
Most of them attend	66.9	67.5	67.4
Half of them attend	0.3	.	0.1
Few attend	0.5	.	0.1
Very few or almost none attend	.	.	.
Does not know	2.4	.	0.6
Total	100.0	100.0	100.0
Number of cases	89	34	123
School attendance among secondary school-aged students			
All of them attend	9.2	11.0	10.5
Most of them attend	38.7	59.6	53.6
Half of them attend	7.8	.	2.2
Few attend	10.2	3.4	5.3
Very few or almost none attend	4.6	.	1.3
Does not know	29.5	26.1	27.0
Total	100.0	100.0	100.0
Number of cases	88	31	119

13.5. Health Facilities

Convergence centers and health centers are the most widely available health facilities in communities in which ZOI households are located, 41.1% and 26.1%, respectively (Table 13.7). Other types of facilities are less commonly available.

Table 13.7. Health Facilities

Percentage of households that are located in communities with access to public health services

	RVCP Direct and Indirect Beneficiaries	Health Only	ZOI
Type of facility providing health services			
Public hospital	0.3	2.0	1.6
Health center	9.1	16.8	14.7
Health post	24.1	26.9	26.1
Community health center	14.2	5.0	7.4
Mother/Child Integral Care Center	1.3	.	0.4
Permanent Medical Healthcare Center	15.9	5.5	8.3
Convergence center	33.7	43.9	41.1
Other public-sector facilities	1.5	.	0.4
Total	100.0	100.0	100.0
Number of cases	89	34	123
Operating hours of the health center or health post in the community			
There is no center/post	76.1	63.5	66.9
Every day	9.3	8.7	8.9
Some days per week	4.5	8.3	7.3
Once a week	1.5	.	0.4
Five days (Monday through Friday)	8.7	17.2	14.9
Others	.	2.3	1.7
Total	100.0	100.0	100.0
Number of cases	89	34	123

Table 13.8 shows the distance to the nearest facility. We found that 46.5% of households are located in communities less than 5 kilometers from the nearest health post. Furthermore, 46.1% of households are located in communities less than 5 kilometers from a convergence center. As expected, hospitals are farther away: 67.3% of households are in communities more than 20 kilometers from the nearest hospital.

Table 13.8. Distance to the Nearest Health Facility

Percentage distribution of households located in communities by distance in kilometers from the nearest health facility

	RVCP Direct and Indirect Beneficiaries	Health Only	ZOI
Distance in kilometers to the nearest facility:			
Public hospital			
Less than 5	1.5	2.0	1.9
5 - 9	1.8	.	0.5
10 - 19	23.5	27.7	26.6
20 or more	69.0	66.7	67.3
Does not say/know/go	4.3	3.5	3.7
Total	100.0	100.0	100.0
Health center			
Less than 5	10.4	19.5	17.1
5 - 9	10.4	13.4	12.6
10 - 19	18.1	24.0	22.4
20 or more	11.5	8.8	9.5
Does not say/know/go	49.5	34.3	38.4
Total	100.0	100.0	100.0
Health post			
Less than 5	38.2	49.6	46.5
5 - 9	18.2	3.7	7.5
10 - 19	2.0	.	0.5
20 or more	0.8	.	0.2
Does not say/know/go	40.9	46.8	45.2
Total	100.0	100.0	100.0
Community center			
Less than 5	8.0	.	2.1
Does not say/know/go	92.0	100.0	97.9
Total	100.0	100.0	100.0
Mother/Child Integral Care Center			
Less than 5	1.3	3.5	2.9
5 - 9	.	3.1	2.3
10 - 19	-	-	-
20 or more	1.7	5.0	4.1
Does not say/know/go	97.0	88.4	90.7
Total	100.0	100.0	100.0
Permanent Medical Healthcare Center			
Less than 5	14.0	11.6	12.2
5 - 9	15.5	3.0	6.4
10 - 19	9.9	17.4	15.4
20 or more	12.9	12.4	12.5
Does not say/know/go	47.7	55.6	53.5
Total	100.0	100.0	100.0
Convergence center			
Less than 5	47.5	45.6	46.1
5 - 9	2.1	.	0.6
10 - 19	0.1	4.2	3.1
20 or more	0.2	.	0.0
Does not say/know/go	50.1	50.2	50.2
Total	100.0	100.0	100.0
Number of cases	89	34	123

13.6. Markets and Businesses

Only 7.3% of households are located in communities with a formal market for agricultural and consumption products (see Table 13.9). However, 26.2% of households are located in communities where this type of market is less than 5 kilometers away, while 19.9% must travel more than 20 kilometers to reach a market. Additionally, only 6.9% of households are in communities that have a bank office, and just 5.8% have a savings and loans cooperative. However, 40.1% of households are located in communities with a pharmacy.

Table 13.9 Markets and Businesses

Percentage of households that are located in communities with access to markets and businesses

	RVCP Direct and Indirect Beneficiaries	Health Only	ZOI
Average distance to the nearest market			
Within the community	5.5	12.4	7.3
Less than 5	29.6	16.9	26.2
5-9	8.4	23.0	12.3
10-19	36.8	27.3	34.3
20 or more	19.7	20.4	19.9
Total	100.0	100.0	100.0
Number of cases	89	34	123
There is a bank branch	10.9	5.5	6.9
There is a savings and loans cooperative	12.7	3.2	5.8
There is a pharmacy or a store selling medicines	42.0	39.3	40.1
There are stores or places to rent or buy agricultural equipment and to buy fertilizers	26.1	13.9	17.1
Number of cases	89	34	123

14. Balance between Program Groups and Comparison Groups

In order to evaluate the similarities, or balance, among program groups and their respective comparison groups, we examined if the average values for the groups were statistically equivalent. In order to do so, lineal regression models with correction for clustering were applied to 75 main outcome indicators and the basic characteristics of individuals and households. The working hypothesis was that there were no significant differences in the average values on indicators between these groups. Statistical tests were performed to compare the RVCP domains (1 and 2) with comparison group 4, and the Health Only domain (3) with comparison group 5. The level of statistical confidence used in the tests was 95% (which is equal to a 0.05 level of statistical significance).

As can be seen in Table 14.1, it was established that the RVCP domains (1 and 2) are similar to comparison group 4 on 56 out of 75 indicators; that is, on 75% of the indicators used. This degree of similarity is moderate, but still a good result. In fact, it is better than expected given that the program and comparison groups do not originate from an experimental design, and the most recent available data for use in the matching procedure for comparison group identification were nine-plus years old (from the 2002 population census and the 2004 Agricultural/Livestock Census 2004).

Table 14.2 shows the results of comparisons between the Health Only domain and comparison group 5. Statistical similarity was identified between the average values on 65 out of 75 indicators, or 87% of those studied. This degree of similarity is high, and significantly greater than in the RVCP domains.

Given that the comparison group for the WHIP evaluation was obtained by means of quasi-experimental methods, these results are encouraging for the impact evaluation. Nevertheless, results do indicate some differences between program groups and comparison groups, which will have to be controlled for during impact estimation.

Table 14.1. Comparing the RVCP Domains (1+2) Program Group with the Comparison Group (4)

Indicator	Value		Difference	Standard Error	t Value	Prob > |t|
	RVCP (1+2)	Comparison 4				
WHIP-FTF Indicators						
Poverty: USD 1.25 (USD 2005 PPP) per capita per day	4.70	4.61	0.09	1.10	0.08	0.935
Poverty: USD 2.00 (USD 2005 PPP) per capita per day	27.96	24.93	3.02	2.34	1.29	0.198
Poverty: 13.18 Quetzales per capita per day	24.90	21.12	3.79	2.19	1.73	0.084
Poverty: 27.17 Quetzales per capita per day	71.68	69.02	2.66	3.60	0.74	0.461
Consumption expenses per capita per day, average (USD 2010 constant)	3.97	4.32	-0.35	0.30	-1.17	0.242
Chronic malnutrition in children under 5 years old (height for age)	64.72	59.94	4.78	3.14	1.52	0.129
Global malnutrition in children under 5 years old (weight for age)	13.93	16.55	-2.62	1.71	-1.53	0.127
Acute malnutrition in children under 5 years old (weight for height)	0.89	1.28	-0.39	0.37	-1.07	0.288
Prevalence in modern method use (15-49 year-old women)	40.31	40.37	-0.06	2.62	-0.02	0.981
Births attended by a physician or nurse	38.39	47.41	-9.02	4.17	-2.16	0.032
Anemia in 15-49 year-old women	17.89	21.96	-4.08	2.12	-1.92	0.056
Dietary diversity in women: Average number of food groups ingested	4.50	4.37	0.13	0.08	1.73	0.085
Low body-mass index (<18.5) in 15-49 year-old women	2.36	2.06	0.30	0.52	0.58	0.563
Anemia in boys and girls from 6 to 59 months of age	33.05	41.14	-8.09	2.65	-3.05	0.003
Exclusive breastfeeding in children under 6 months of age	57.54	65.88	-8.35	5.85	-1.43	0.156
Percentage of boys and girls from 12 to 59 months old who received 3 doses of Pentavalent vaccine	97.41	93.40	4.01	1.49	2.69	0.008
Percentage of boys and girls from 6 to 23 months of age with a minimum acceptable diet	39.11	33.12	5.99	3.44	1.74	0.083
Percentage of households with moderate or severe hunger	13.00	16.91	-3.91	1.93	-2.02	0.044
Total Fertility Rate	4.08	4.16	-0.08	0.26	-0.29	0.77
Percentage of 15-49 year-old women who had 4 or more pre-natal checkups during their last birth in the previous 5 years	76.68	68.34	8.34	2.41	3.46	0.001
Individual and household characteristics						
Percentage of households with women from 15 to 49 years old	90.38	88.67	1.70	1.23	1.39	0.166
Average number of individuals in the household	5.66	5.66	0.00	0.14	-0.01	0.990
Percentage of households that live in rural areas	82.11	73.90	8.21	6.60	1.24	0.215
Percentage of indigenous households	64.42	58.43	5.99	5.15	1.16	0.246
Average age of household members	22.61	23.16	-0.55	0.50	-1.10	0.272
Percentage of household members 15 years old or more, married or in a consensual union	63.85	62.34	1.51	1.15	1.31	0.190
Percentage of household members 18 years old or more, with no education	35.04	31.66	3.38	2.33	1.45	0.148
Percentage of household members 18 years old or more, with primary education (completed or not completed)	47.24	48.75	-1.51	1.82	-0.83	0.408
Percentage of household members 18 years old or more, with secondary education (completed or not completed)	15.09	17.26	-2.18	1.88	-1.16	0.248
Percentage of household members 15 years old or more, who cannot read or write	30.49	27.47	3.02	2.06	1.46	0.144
Percentage of household members 5 to 18 years old who are presently studying	65.75	68.47	-2.72	2.17	-1.25	0.212
Percentage of households that received government benefits through the fertilizer program during the previous 12 months	24.68	31.23	-6.54	3.09	-2.12	0.035
Percentage of households that received government benefits through the Bono Seguro program during the previous 12 months	28.51	28.85	-0.34	2.53	-0.13	0.894

Indicator	Value		Difference	Standard Error	t Value	Prob > |t|
	RVCP (1+2)	Comparison 4				
Housing Physical Characteristics						
Percentage of households with dirt or sand floors	49.22	41.84	7.38	4.13	1.79	0.075
Percentage of households with cement floors	37.07	40.95	-3.88	2.98	-1.30	0.194
Percentage of households with corrugated zinc or metal sheeting roofs	82.01	76.55	5.46	3.47	1.57	0.117
Percentage of households with concrete, reinforced concrete, or ceramic roofs	11.89	11.92	-0.03	2.42	-0.01	0.991
Percentage of households with cinder-block walls	41.94	46.72	-4.78	4.14	-1.16	0.249
Percentage of households with adobe o covered adobe walls	31.33	23.85	7.48	4.15	1.80	0.073
Percentage of households with electricity	75.46	88.72	-13.26	2.65	-5.01	<.0001
Percentage of households with drinking-water source connected to the public water system	73.59	64.90	8.69	5.11	1.70	0.091
Percentage of households where a place with water and soap for hand washing was observed	80.47	80.04	0.43	2.28	0.19	0.850
Percentage of households with latrine/outhouse/cesspits	51.40	50.10	1.30	4.62	0.28	0.779
Percentage of households with toilet connected to the sewage system	31.01	25.82	5.19	5.25	0.99	0.323
Percentage of households that have a room used exclusively for cooking	66.01	61.36	4.66	2.67	1.75	0.082
Percentage of households that use firewood as cooking fuel	93.21	89.54	3.67	2.59	1.42	0.158
Percentage of households with a microwave oven	10.03	11.21	-1.18	2.28	-0.52	0.605
Percentage of households with a blender	32.64	41.38	-8.74	3.77	-2.32	0.021
Percentage of households with a refrigerator	23.39	28.61	-5.22	3.74	-1.40	0.164
Percentage of households with a manual sewing machine	6.46	9.88	-3.42	1.22	-2.80	0.006
Percentage of households with a television set	47.75	58.08	-10.33	3.71	-2.79	0.006
Percentage of households with a recorder or radio/recorder	18.20	21.85	-3.64	1.82	-2.00	0.046
Percentage of households with a pick-up truck	6.74	6.45	0.28	1.07	0.26	0.793
Percentage of households with a motorcycle	6.63	7.43	-0.80	1.52	-0.53	0.599
Percentage of households with a bicycle	5.98	17.82	-11.84	2.41	-4.92	<.0001
Nutritional Status and Vegetable Gardens						
Percentage of boys and girls under 5 years old who are overweight or obese	5.72	5.09	0.63	0.88	0.72	0.475
Percentage of 15-49 year-old women who are overweight or obese	41.88	44.21	-2.33	2.09	-1.12	0.266
Percentage of boys and girls from 0 to 59 months old who were breastfed within the first hour after birth	55.87	48.31	7.56	2.57	2.94	0.004
Percentage of boys and girls under 5 years old who were given iron in the previous 7 days	24.86	18.16	6.70	1.76	3.82	0.000
Percentage of boys and girls under 5 years old who received a dose of vitamin A in the previous 6 days	67.12	58.21	8.90	2.56	3.48	0.001
Percentage of boys and girls under 5 years old who received medication against intestinal parasites in the previous 6 months	46.14	42.19	3.95	2.26	1.75	0.081
Percentage of households that produce vegetables for household consumption	10.08	10.84	-0.75	1.89	-0.40	0.690
Percentage of households that consider that malnutrition affects their household	52.70	50.46	2.24	2.50	0.89	0.372
Percentage of households that consider that malnutrition is a serious problem in their community	59.94	65.37	-5.43	1.91	-2.85	0.005

Indicator	Value		Difference	Standard Error	t Value	Prob > |t|
	RVCP (1+2)	Comparison 4				
Maternal Health						
Percentage of women from 18 to 24 years old gave birth for the first time before they were 18 years old	23.73	26.64	-2.92	2.57	-1.13	0.259
Percentage of 15-49 year-old women who received pre-natal care during last birth in the 5 previous years	93.88	90.23	3.65	1.18	3.08	0.002
Percentage of 15-49 year-old women who received post-natal care during last birth in the 5 previous years	74.22	74.40	-0.18	2.59	-0.07	0.946
Fertility and Family Planning						
Average live births to 15-49 year-old women	2.58	2.58	0.00	0.10	-0.02	0.985
Percentage of 15-49 year-old women, married or in a consensual union, with unmet family-planning needs	17.29	18.72	-1.43	1.70	-0.84	0.401
Child Health						
Percentage of boys and girls born in the 5 previous years who received postnatal care	82.34	68.85	13.49	2.89	4.67	<.0001
Percentage of boys and girls under 5 years old with diarrhea in the previous 2 weeks	23.16	27.87	-4.70	2.30	-2.05	0.042
Percentage of boys and girls under 5 years old with diarrhea in the previous 2 weeks who received oral rehydration salts	52.55	43.85	8.70	4.25	2.05	0.042
Percentage of boys and girls under 5 years old who had a cough accompanied by rapid breathing in the previous 2 weeks and who were provided care at a community center or a convergence center	11.55	8.72	2.83	3.83	0.74	0.461
Infant mortality rate for the previous 5 years	28.00	22.00	6.00	7.07	0.85	0.40
Child mortality rate for the previous 5 years	37.00	29.00	8.00	9.22	0.87	0.39

Table 14.2 Comparing the Health Only Program Group (3) with the Comparison Group (5)

Indicator	Value		Difference	Standard Error	t Value	Prob > |t|
	Health Only (3)	Comparison 5				
WHIP-FTF Indicators						
Poverty: USD 1.25 (USD 2005 PPP) per capita per day	6.25	5.99	0.26	1.81	0.14	0.886
Poverty: USD 2.00 (USD 2005 PPP) per capita per day	30.19	29.49	0.69	4.08	0.17	0.866
Poverty: 13.18 Quetzales per capita per day	27.72	26.77	0.95	4.10	0.23	0.818
Poverty: 27.17 Quetzales per capita per day	77.57	76.31	1.25	3.73	0.34	0.738
Consumption expenses per capita per day, average (USD 2010 constant)	3.60	3.50	0.10	0.24	0.42	0.677
Chronic malnutrition in children under 5 years old (height for age)	68.26	64.39	3.87	4.32	0.90	0.374
Global malnutrition in children under 5 years old (weight for age)	18.33	22.16	-3.84	2.99	-1.28	0.204
Acute malnutrition in children under 5 years old (weight for height)	0.81	1.29	-0.48	0.47	-1.02	0.310
Prevalence in modern method use (15-49 year-old women)	38.60	38.71	-0.11	4.56	-0.02	0.982
Births attended by a physician or nurse	34.70	33.41	1.29	6.18	0.21	0.836
Anemia in 15-49 year-old women	18.05	28.15	-10.10	3.77	-2.68	0.010
Dietary diversity in women: Average number of food groups ingested	4.40	4.22	0.18	0.14	1.21	0.229
Low body-mass index (<18.5) in 15-49 year-old women	2.32	2.16	0.16	0.56	0.29	0.773
Anemia in boys and girls from 6 to 59 months of age	34.52	47.82	-13.30	4.59	-2.90	0.005
Exclusive breastfeeding in children under 6 months of age	68.73	46.21	22.52	7.40	3.04	0.004
Percentage of boys and girls from 12 to 59 months old who received 3 doses of Pentavalent vaccine	95.15	93.53	1.63	1.54	1.06	0.296
Percentage of boys and girls from 6 to 23 months of age with a minimum acceptable diet	40.04	32.82	7.21	4.32	1.67	0.101
Percentage of households with moderate or severe hunger incidence	13.97	16.32	-2.34	2.63	-0.89	0.377
Total Fertility Rate	4.02	5.06	-1.05	0.58	-1.81	0.07
Percentage of 15-49 year-old women who had 4 or more pre-natal checkups during their last birth in the previous 5 years	75.78	66.39	9.39	3.39	2.77	0.008
Individual and household characteristics						
Percentage of households with women from 15 to 49 years old	92.23	88.67	3.55	1.63	2.17	0.034
Average number of individuals in the household	5.84	5.82	0.02	0.20	0.09	0.927
Percentage of households that live in rural areas	75.83	83.94	-8.11	9.85	-0.82	0.414
Percentage of indigenous households	79.49	67.81	11.69	7.96	1.47	0.147
Average age of household members	22.51	22.51	-0.01	0.77	-0.01	0.993
Percentage of household members 15 years old or more, married or in a consensual union	62.82	64.97	-2.16	2.00	-1.08	0.285
Percentage of household members 18 years old or more, with no education	36.58	35.36	1.22	3.83	0.32	0.751
Percentage of household members 18 years old or more, with primary education (completed or not completed)	48.95	48.92	0.03	2.79	0.01	0.992
Percentage of household members 18 years old or more, with secondary education (completed or not completed)	13.23	14.64	-1.41	2.96	-0.48	0.635
Percentage of household members 15 years old or more, who cannot read or write	31.38	32.69	-1.31	3.57	-0.37	0.715
Percentage of household members 5 to 18 years old who are presently studying	65.22	66.80	-1.58	3.42	-0.46	0.646
Percentage of households that received government benefits through the fertilizer program during the previous 12 months	26.86	33.72	-6.86	6.30	-1.09	0.281
Percentage of households that received government benefits through the Bono Seguro program during the previous 12 months	24.84	33.43	-8.58	4.26	-2.01	0.049

Indicator	Value		Difference	Standard Error	t Value	Prob > |t|
	Health Only (3)	Comparison 5				
Housing Physical Characteristics						
Percentage of households with dirt or sand floors	47.77	53.22	-5.46	6.74	-0.81	0.422
Percentage of households with cement floors	38.03	35.90	2.13	5.94	0.36	0.721
Percentage of households with corrugated zinc or metal sheeting roofs	74.20	79.16	-4.96	5.63	-0.88	0.382
Percentage of households with concrete, reinforced concrete, or ceramic roofs	11.97	8.25	3.72	3.10	1.20	0.235
Percentage of households with cinder-block walls	39.47	40.92	-1.45	7.10	-0.20	0.839
Percentage of households with adobe o covered adobe walls	36.49	33.15	3.35	8.28	0.40	0.688
Percentage of households with electricity	85.08	80.37	4.71	6.46	0.73	0.469
Percentage of households with drinking-water source connected to the public water system	76.41	62.36	14.05	8.53	1.65	0.105
Percentage of households where a place with water and soap for hand washing was observed	79.30	76.69	2.61	4.74	0.55	0.584
Percentage of households with latrine/outhouse/cesspits	61.75	71.72	-9.96	7.54	-1.32	0.191
Percentage of households with toilet connected to the sewage system	20.72	11.58	9.14	6.78	1.35	0.183
Percentage of households that have a room used exclusively for cooking	64.79	64.81	-0.02	4.31	0.00	0.997
Percentage of households that use firewood as cooking fuel	93.47	96.98	-3.51	1.89	-1.86	0.068
Percentage of households with a microwave oven	6.42	5.21	1.21	1.69	0.72	0.475
Percentage of households with a blender	31.09	30.78	0.31	5.48	0.06	0.955
Percentage of households with a refrigerator	16.54	16.63	-0.09	4.19	-0.02	0.984
Percentage of households with a manual sewing machine	6.99	4.99	2.00	1.48	1.35	0.182
Percentage of households with a television set	49.97	46.00	3.97	5.84	0.68	0.500
Percentage of households with a recorder or radio/recorder	19.48	20.33	-0.85	2.72	-0.31	0.757
Percentage of households with a pick-up truck	7.37	5.13	2.23	1.83	1.22	0.227
Percentage of households with a motorcycle	5.31	3.54	1.77	1.30	1.36	0.179
Percentage of households with a bicycle	13.03	11.41	1.62	3.44	0.47	0.640
Nutritional Status and Vegetable Gardens						
Percentage of boys and girls under 5 years old who are overweight or obese	4.48	5.25	-0.78	1.18	-0.66	0.512
Percentage of 15-49 year-old women who are overweight or obese	43.20	41.85	1.35	3.61	0.38	0.709
Percentage of boys and girls from 0 to 59 months old who were breastfed within the first hour after birth	56.51	48.77	7.74	5.30	1.46	0.150
Percentage of boys and girls under 5 years old who were given iron in the previous 7 days	20.34	28.06	-7.72	3.29	-2.35	0.022
Percentage of boys and girls under 5 years old who received a dose of vitamin A in the previous 6 days	61.40	63.78	-2.37	3.82	-0.62	0.537
Percentage of boys and girls under 5 years old who received medication against intestinal parasites in the previous 6 months	40.30	41.72	-1.42	3.45	-0.41	0.681
Percentage of households that produce vegetables for household consumption	12.74	18.09	-5.35	4.21	-1.27	0.208
Percentage of households that consider that malnutrition affects their household	52.50	57.33	-4.82	3.81	-1.27	0.210
Percentage of households that consider that malnutrition is a serious problem in their community	60.00	61.92	-1.91	3.44	-0.56	0.580
Maternal Health						
Percentage of women from 18 to 24 years old gave birth for the first time before they were 18 years old	21.01	26.40	-5.39	3.77	-1.43	0.158
Percentage of 15-49 year-old women who received pre-natal care during last birth in the 5	92.21	91.78	0.43	2.65	0.16	0.873

Indicator	Value		Difference	Standard Error	t Value	Prob > |t|
	Health Only (3)	Comparison 5				
previous years						
Percentage of 15-49 year-old women who received post-natal care during last birth in the 5 previous years	71.99	65.45	6.54	4.20	1.56	0.125
Fertility and Family Planning						
Average live births to 15-49 year-old women	2.53	2.80	-0.27	0.13	-1.99	0.051
Percentage of 15-49 year-old women, married or in a consensual union, with unmet family-planning needs	17.34	20.71	-3.37	2.60	-1.30	0.200
Child Health						
Percentage of boys and girls born in the 5 previous years who received postnatal care	82.52	66.71	15.81	4.23	3.74	0.000
Percentage of boys and girls under 5 years old with diarrhea in the previous 2 weeks	21.43	28.00	-6.57	2.12	-3.11	0.003
Percentage of boys and girls under 5 years old with diarrhea in the previous 2 weeks who received oral rehydration salts	34.77	49.33	-14.56	6.54	-2.23	0.030
Percentage of boys and girls under 5 years old who had a cough accompanied by rapid breathing in the previous 2 weeks and who were provided care at a community center or a convergence center	23.96	8.89	15.07	9.29	1.62	0.110
Infant mortality rate for the previous 5 years	24.00	31.00	-7.00	10.30	-0.68	0.50
Child mortality rate for the previous 5 years	30.00	39.00	-9.00	12.53	-0.72	0.47

Annex 1. Note on Identifying the Comparison Group

In the absence of an experimental design, impact evaluations must include a comparison group that is as similar as possible to the group receiving treatment, based on a series of observable characteristics and minimizing all possible selection biases to the fullest extent possible. Two matching techniques, the Mahalanobis Distance (MD) and the Propensity Score Matching (PSM) methodologies, were tested for use in this study. In both cases, the purpose was to identify two comparison groups, one for domains 1 and 2 (RVCP) and one for domain 3 (Health Only).

The MD requires that for each treated subject (that is, those in the program group) the nearest non-treated subject(s) is/are selected according to the Mahalanobis score, which is a measure of statistical distance. When using the PSM, one or several non-treated subjects with similar propensity scores to each treated subject are chosen. The propensity score denotes the estimated probability of receiving the program, given a set of observable factors. Their estimation is performed by means of a Logit or Probit model.

Matching was performed at the census-tract level using information contained in the 2002 Population Census and the 2002 Agricultural Census. The purpose of testing two techniques was to find a procedure that would maximize the number of characteristics in which the comparison group was similar to the intervention group, not only in average values (median or percentage difference test) but also as on distributions (using the Kolmogorov-Smirnov test for differences in probability distributions).

The following steps were used to identify comparison groups:

1. Three groups of potential controls were identified for domains 1 and 2:
    a. Census tracts outside the 30 WHIP priority municipalities, but within those municipalities eligible for the FTF project;
    b. Census tracts outside the 30 WHIP priority municipalities, but within municipalities considered to be potentially eligible according to their IFPRI classification;
    c. Census tracts outside the 30 WHIP priority municipalities, but within the 5 priority departments.
2. Two potential control groups were identified for domain 3:
    a. Census tracts outside the 30 WHIP priority municipalities, but within those municipalities eligible for the FTF project, and not selected as control groups for domains 1 and 2;
    b. Census tracts outside the 30 WHIP priority municipalities, but within the 5 priority departments, and not selected as control groups for domains 1 and 2.
3. Geographic convenience was an additional criterion that was considered. Comparison groups that were geographically close to intervention groups were sought in order to prevent considerably higher operational costs.

4. MD and PSM matching were performed for each one of the potential controls mentioned in step 1, based on the following variables:

    - Population
    - % of houses with improved walls
    - % of houses with improved roofs
    - % of households with piped water in the home
    - Women's average age
    - % of households with toilet facilities
    - % of households with improved fuel for cooking
    - % non-indigenous individuals
    - % of individuals who can speak Spanish
    - % of individuals who had worked the previous week
    - % of unskilled farmers, livestock breeders, and fishermen
    - % of producers/total population
    - % of producers with a complete primary school education
    - Number of farms with temporary crops and single-crop farming
    - Number of farms with temporary crops and associated-crop or intercropping farming
    - Whether coffee is produced
    - % of producers who received some kind of assistance
    - % of producers with assistance for commercialization
    - % of area used for permanent or semi-permanent crops
    - Number of household members working as farm laborers
    - Census tract eligible for FTF (only the group specified in item c)
    - Custom variables by department

    In the case of MD matching, all variables were standardized.

    In the case of models to identify the comparison group for domain 3 (step 2), the following were used:

    - Population
    - % of houses with improved walls
    - % of households with piped water in the home
    - % of households with toilet facilities
    - % of households with electric lighting
    - % of households with a room used exclusively for cooking
    - Women's average age
    - % non-indigenous individuals
    - % of individuals who can speak Spanish
    - % public administrators

- % of agricultural workers, artisans and others
- % of producers/total population
- Number of farms with temporary crops and single-crop farming
- Number of farms with temporary crops and associated-crop or intercropping farming
- Whether coffee is produced
- Number of temporary workers in the farm
- FTF-eligible census tract (only group specified in item c)
- Custom variables by department

5. After using MD and PSM procedures with the various potential comparison groups, it was determined that Propensity Score Matching (PSM), using the control group mentioned in item 1.a, was the strategy through which the best balance among groups was achieved, both for domains 1 and 2 and for domain 3.
6. Matching results were as follows:

Selected Census Tracts		
	Domains 1 and 2	Domain 3
Intervention	95	37
Control	78	30

Annex 2. Survey Methodology

A.2.1. Sampling Framework

The sampling framework for the survey was developed based on the Master Sampling Framework of the National Statistics Institute (INE), which was developed by INE shortly after the 2002 Population Census. This Master Framework is used by all official surveys in the country, with standard guidelines on the use of strata and conglomerates.

In this survey we started with a list of census tracts (INE's primary sampling units) for the 5 departments to which the 30 selected municipalities belong. From these tracts, we took into account INE's identification fields, the area (rural or urban), and the number of homes and households (at the time of the census).

The tracts that belong to the 30 municipalities selected by the programs are the combination of domains 1, 2, and 3; while the remaining sectors are used to select the households of the comparison groups included in the impact evaluation.

Based on the information provided by the RVCP, we identified the tracts where at least one member of an RVCP association resides. These sectors are defined as the combination of domains 1 and 2. In each one of these tracts, households with at least one member of an RVCP association constitute domain 1, while the rest of the households constitute domain 2.

Since some associations provided only partial information, we were not able to directly identify the tracts in which there are member households. In this case, we first identified a larger area composed of 2 to 16 tracts and we identified them as "census areas." These constituted the new primary sampling units.

Thus, the survey sampling framework was composed of a list of these census areas, the tracts that did not have to be combined to establish census areas, plus the maps and lists of households in all of these census tracts, developed by INE for the last census.

A.2.2. Sample Size

To determine the sample size, we first applied the formula suggested in the FTF project guide (*Volume 8 Population Based Survey Instrument for FTF, Final October 2012*) to obtain an initial value. Second, we adjusted that value, considering that there might not be children under 5 years old in some households.

Third, we applied an adjustment for non-response. Fourth, we applied an adjustment for finite populations, considering that the population being studied is relatively small, especially in domain 1. Fifth, we made a last adjustment considering that, in the impact evaluation values for the same indicator at two different times will be compared.

To calculate the sample size for each domain, we considered a 0.05 significance level (α), a 0.20 statistical power (β), a 2.0 design effect (DEFF), a 0.3 correlation (r) between the baseline and target values and the following initial and target values established for the two key indicators:

Domain	Indicator	Baseline	Goal 2015	Goal 2017	Expected Change as of 2017
1 and 2	Percentage of individuals living in extreme poverty	17.9	16.2	14.4	- 3.5
3	Chronic malnutrition (0-59 months old)	67.1	60.9	56.9	- 10.2

In addition, two comparison groups with a similar number of census tracts were planned for domains 1 and 2 (95 tracts) and for domain 3 (37 tracts), with 20 and 30 households selected within each tract of the respective comparison group.

A.2.3. Sampling Procedure

In order to select the households for the sample in domains 1 and 2, we used a 3-stage procedure described below. During the first stage, census areas were selected. This selection was performed randomly, proportionate to the size of each census area which was determined by the number of RVCP members' households in the tract.

Given that census areas are comprised of several tracts, census tracts from each selected census area were chosen. To that end, additional field information was used to complement the information previously provided by the producers' associations.

Initially, we selected 95 tracts for the sample in domains 1 and 2, but we later discovered that some selected tracts had no member households and, thus, did not belong to these domains. Thus, we opted to select 20 additional tracts in order to obtain a final sample of 115 tracts for domains 1 and 2.

Throughout this sampling procedure, we identified the following probabilities, which we later used to estimate the selection probability for each selected tract, as well as the selection probabilities and weights for households and individuals surveyed.

PAC1 Probability of selecting the census area for the initial sample

PSC1 Probability that area tracts would be selected for the initial sample

PAC2 Probability that the census area would be selected for the additional sample

PSC2 Probability that the area tract would be selected for the additional sample

= (1 − PAC1) * PAC1 * PSC2

PSC3 Probability that the tract would be selected for the definitive sample

= PSC1, if the tract belongs to the initial sample

= PSC2, if the tract belongs to the additional sample

Cartographic updates were performed for these sample tracts, order to develop a list of direct and indirect RVC beneficiary households at the time of the survey. Then, based on these lists, the third sampling stage was undertaken. For this stage, 20 households per tract were selected for each domain sample. To that end, member and non-member households were listed separately. Then, one of the households from each group was selected by simple random sampling, and based on that household all the other households that would be surveyed in each group were selected correlatively.

In order to obtain the sample households for domain 3, the standard procedure used for national surveys was used. In the first stage, census tracts were selected as primary sampling units, proportionate to their size, which was determined by the number of households at the time of the last census. The lists of households for selected tracts were also updated, and during a second sampling stage, 30 households per tract were selected for this domain sample.

To select the census tracts to be included in the comparison groups for domains 1, 2, and 3, we started with all the census tracts of the 5 departments that include the 30 municipalities selected by the programs, but that do not belong to these municipalities. We used a matching procedure for these tracts with the purpose of selecting 78 tracts for the comparison group that would closely correspond to the sample of domains 1 and 2 (this group we identified as domain or group 4) and 30 tracts for the comparison group corresponding to domain 3 (this group we identified as domain or group 5).

For every tract in the domain 3 sample and samples 4 and 5 that constitute comparison groups, the households identified in the cartographic update were listed, then one was selected by simple random sampling, and based on this household, the other households that would be surveyed were chosen correlatively.

In census tracts for the domain 3 sample, 30 households were chosen with the aim of having a total sample of 1,100 households. For sample 4 (the comparison group for domains 1 and 2), 20 households were selected, while for sample 5 (the comparison group for domain 3), 30 households were selected.

A.2.4. Operational Aspects of the Survey

The final versions of the instruments were pilot tested during a four week period. During this trial period, 254 household questionnaires, 364 women's questionnaires, 435 empowerment questionnaires, and 252 expenditure and consumption questionnaires were applied in communities that were not a part of the sampling framework. The questionnaires were pilot tested with the purpose of identifying problems in respondent comprehension, verifying the logic of responses, and reviewing the consistency of skips and filters to enable quality control measures

to be established. Emphasis was placed on the comprehension difficulties pertaining to questions on the empowerment and expenditures and consumption questionnaires.

The locations selected for pilot testing were four municipalities in the departments of Chimaltenango, Sololá, Totonicapán, and Quetzaltenango. Annex 3 shows the communities where the questionnaires were pilot tested, and the dates of said test.

Field personnel were trained during a four week period. This training was aimed at supervisors, editors, surveyors, and data-entry clerks. Anthropometrists were trained in a separate course on topics including theoretical aspects of anthropometry, tests given at health facilities, and anthropometric standardization. Candidates who displayed superior consistency and precision in weight, height, and length measurements for children under 5 years old were selected.

Eleven training and reference manuals were developed. Each of the training participants was provided manuals in accordance with his/her role.[16] Training included fieldwork practice, in which each team practiced planning, organization, and distribution of assigned tasks.

Before data collection commenced, the teams and the routes were organized, fieldwork supplies and the cartographic material for each selected tract were prepared, and notices were sent to all local authorities. Seven working teams were organized; each composed of a supervisor, an anthropometrist, two editors, six surveyors, and two surveyor-drivers. Each team had several bilingual members (Quiché, Kaqchikel, Tzu'utujil, Q'eqchí, Mam). Data were gathered from July to November 2013, in five separate fieldwork commissions. To promote participation by communities and households, educational materials relating to questionnaire topics were developed and distributed in households and at community institutions.

With the purpose of maintaining pre-established standards for this study, EMEPAO 2013 fieldwork monitoring included two levels of quality control. The first level was implemented directly in the field, while the second level was conducted at the main offices. Annex 3 describes quality control procedures in greater detail.

EMEPAO 2013 data processing was performed in the following stages: reception at the central level, coding, data entry and 100% verification, as well as editing and correcting data inconsistencies. These tasks were performed by 23 data entry clerks and 10 central editors. Annex 3 describes the programs designed to capture information and the computer systems that were developed to manage data entry.

A.2.5. Weighting

Weights for households and interviewees were estimated considering, first, the inverse probability of selection for the census tract to which they belonged. This is probability PSC3

[16] List of manuals developed for EMEPAO 2013: 1. Female Interviewer's Manual, 2. Male Interviewer's Manual, 3. Anthropometry Manual, 4. HemoCue Manual, 5. Field Editing Manual, 6. Supervisor's Manual, 8. Cartography Manual, 9. Data Entry Manual, 10. Cartography Update Routing Manual, and 11. Manual of Procedures.

mentioned in the previous section, which is based on the size of tracts, determined by the census information and the information provided by WHIP program associations. Specifically, we used the following variables:

NHOG Total number of households, according to the sampling framework

NASO Total number of members, according to the sampling framework

By means of the cartographic update of each census tract selected, the values for these additonal variables were also determined:

NHOG2 Total number of households at the time of the survey

NHASO2 Total number of member households at the time of the survey

Next, the total number of eligible households in each tract was determined by domain, as follows:

Domain	Total Number of Households (NHOG3)
1	NHASO2
2	NHOG2 − NHASO2
3, 4, and 5	NHOG2

The number of households to be surveyed was then determined for each domain, and recorded in the NHSEL variable:

Domain	No. of households to be surveyed (NHSEL)
1, 2 and 4	Minimum {20, NHOG3}
3 and 5	Minimum {30, NHOG3}

However, while survey teams were visiting selected households assigned to them, they determined that some did not exist or were ineligible to be included in the domain. In those cases, interviewers replaced that household with the household with the next number on the list assigned in the updated map. Ultimately, then, the values for the following variables for each tract had been determined:

NHENC Number of surveyed households

NHCOR Number of substituted households

Given that it was not possible to establish the eligibility of some households until the interviewers arrived, especially in domains 1 and 2, we adjusted the initial household weight according to the following factor:

NHENC / (NHENC + NHCOR)

Consequently the weight for surveyed households is as follows:

PESOHOG = (1 / PSC5) (NHOG3 / NHSEL) * NHENC / (NHENC + NHCOR)

Similarly, when interviewers' work had been completed, the values for the following variables were established for surveyed households. We used these variables to calculate the weights for women and children in the survey.

NPER	Total number of individuals in the household
NMUJ	Total number of eligible women
NNIÑ	Total number of eligible children
NMENT	Total number of eligible women interviewed
NMMED	Total number of eligible women measured
NNIMED	Total number of eligible children measured

Given that all eligible women and children should have been interviewed in each surveyed household, selection probabilities and weights for these individuals had to equal the household selection probabilities and weights. However, as all eligible women and children did not participate, we adjusted the household weights described above as follows:

Individual	Weight
Woman's interview participant	PESOHOG * NMUJ / NMENT
Woman's anthropometry participant	PESOHOG * NMUJ / NMMED
Child anthropometry participant	PESOHOG * NNIÑ / NNIMED

Annex 3. Information on How the Survey Was Organized

List of pilot test communities and visit dates:

No.	Department	Municipality	Community	Date
1	Chimaltenango	San José Poaquil	Aldea Hacienda María	05/08/2013
2	Sololá	San Andrés Semetabaj	Aldea Godínez	05/11/2013
3	Sololá	San Andrés Semetabaj	Aldea Los Robles	05/11/2013
4	Totonicapán	Totonicapán	Caserío Xeman	05/14/2013
5	Totonicapán	Totonicapán	Aldea Panquix	05/14/2013
6	Totonicapán	Totonicapán	Aldea de Teja	05/16/2013
7	Totonicapán	Totonicapán	Caserío Pamesebal	05/16/2013
8	Quetzaltenango	Salcajá	Aldea Santa Rita	05/17/2013
9	Quetzaltenango	Salcajá	Aldea Marroquín	05/17/2013

The following educational materials were developed and distributed during fieldwork in households and communities:

- 3 pamphlets: "How to Eat Healthy", "Vaccines", and "Hygiene and Health"
- A brochure with general survey information
- 4 types of posters
- A vinyl banner
- A CD to be distributed to local radio stations and radio stations in municipal markets
- Introduction letters for area, district, and health-center authorities
- Introduction letters for local authorities, households, and community leaders

A.3.1. Considerations on Data Collection Quality Control

EMEPAO 2013 field work monitoring was performed at two levels:

Level 1. Field quality control. Field editors, field supervisors, and general supervisors conducted the following activities:

a) Observing interviewers' performance to assess their introduction technique, proper use of informed consent, and the way in which they conducted the interview, filled out questionnaires, and used the equivalence sheet (for the consumption questionnaire);
b) Re-editing questionnaires, which entailed identifying errors committed when filling out questionnaires, providing feedback and and verifying the accuracy of information collected;
c) Sending reports on inconsistencies and mistakes identified on questionnaires by the central editing to each EMEPAO-2013 working group;
d) Periodic meetings organized by the central editing coordinating team and general supervisors, with the purpose of promoting quality in data collection.

Level 2. Central quality control. This control was performed at headquarters and the following activities were undertaken:

a) Re-editing questionnaires;
b) Generating error and inconsistency reports;
c) Providing feedback on contents;
d) Holding periodic meetings with each working team.

The critical points in the quality control process were: verifying birth dates; verifying ages; verifying birth history; reviewing filters in the birth history section, and verifying the accurate use of weights and equivalences.

A.3.2. Description of the Data Entry System

Data entry programs were developed using Census and SurveyProcess (CSPro), version 5 for Windows interactive package. A local area network (LAN) for 12 computers was designed and implemented in order to enter questionnaire data in parallel and to centralize information in a server that operated as manager of the database and files. Two computer systems were developed to control and monitor computer equipment and as temporary storage for the files that had been entered. Each one kept a record of the status of each package of questionnaires, the data entry clerk in charge, the status within the general data entry process, and data quality control reports. These programs were developed as web services in the Java programming services, and had the following characteristics:

Administration System and EMEPAO Survey Management (SAGE in Spanish): Its function was to keep a digital record of the questionnaires in each package; each package was assigned to a cartographic sector. Questionnaires were identified with a numeric code, and at the top, they had an identifying barcode which could be read with a laser barcode scanner.

Questionnaires were recorded when each package was prepared for the field and checked when they came back completed, with the purpose of corroborating that the questionnaires returned from the field were included in the same package to which they had been assigned. Another important function of SAGE was registering the time in which data entry clerks started and stopped working, assigning entry tasks and controlling assigned work.

JDigitador: This application managed data entry clerks' activities. It was used in the clerks' computers to record time spent entering data, and to control files and folders of the entered packages and the CSPro data gathering program.

The database was developed by transforming files entered into CSPro to a format for statistical analysis, SAS 9.1 version for Windows. It uses a structured programming language that made it possible to process and generate the various indicators and tables that are part of this report.

A.3.3. Average Time to Apply Questionnaires

The average time needed to complete the household questionnaire was 34 minutes, but in the RVCP domains this time was increased by 3 minutes. Two hours and ten minutes were needed to

fill out the expenditure and consumption questionnaire, with a variance that ranged from 4 minutes under the average time to 7 minutes over the average time.

Conducting the interview for the women's questionnaire took 41 minutes; variations across domains were under one minute. The average time needed to complete the empowerment questionnaire, both for male and female respondents, was 32 minutes.

Community questionnaire interviews lasted an average of 34 minutes in the RVCP domains and one minute less in the Health Only domain, and health service interviews lasted 56 minutes on average. Interviews held in community health centers and convergence centers were the fastest, with average durations of 46 and 49 minutes, respectively. The longest interviews took place in Permanent Medical Healthcare Centers and health centers, averaging 82 and 76 minutes, respectively. Only one Mother/Child Integral Care Center was visited and three other facilities apart from the types mentioned above were also surveyed.

Table A.3.1. Average Time for Household Interview

Average time needed to complete household interview, in minutes

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Average (minutes)	37	33	33	34
Standard deviation	14	14	14	14
Minimum	10	3	2	2
Maximum	151	150	107	151
Number of unweighted cases	1,209	1,664	945	3,818

Table A.3.2. Average Time to Complete the Expenditure and Consumption Interview

Average time needed to complete expenditure and consumption interview, in minutes

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Average (minutes)	136	128	126	130
Standard deviation	38	35	36	37
Minimum	14	12	25	12
Maximum	367	480	308	480
Number of unweighted cases	1,220	1,691	942	3,853

Table A.3.3. Average Time to Complete the Women's Interview

Average time needed to complete women's interview, in minutes

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI
Average (minutes)	40	42	41	41
Standard deviation	22	23	27	24
Minimum	3	3	6	3
Maximum	311	330	507	507
Number of unweighted cases	1,864	2,203	1,283	5,350

Table A.3.4. Average Time to Complete the Empowerment Interview

Average time needed to complete empowerment interview, in minutes

	RVCP Direct Beneficiaries		RVCP Indirect Beneficiaries		Health Only		ZOI	
	Male	Female	Male	Female	Male	Female	Male	Female
Average (minutes)	33	32	32	31	30	30	32	32
Standard deviation	13	14	15	13	12	12	14	13
Minimum	11	4	5	8	9	10	5	4
Maximum	145	218	240	150	91	76	240	218
Number of unweighted cases	572	674	600	811	223	299	1,395	1,784

Table A.3.5. Average Time to Complete the Community Interview

Average time needed to complete community interview, in minutes

	RVCP (Direct and Indirect Beneficiaries)	Health Only	ZOI
Average (minutes)	34	33	34
Standard deviation	14	14	14
Minimum	15	16	15
Maximum	170	198	198
Number of unweighted cases	583	213	796

Table A.3.6. Average Time to Complete the Health Facility Interview

Average time needed complete health facility interview, in minutes

	RVCP (Direct and Indirect Beneficiaries)	Health Only	ZOI
Average (minutes)	55	57	56
Standard deviation	26	20	24
Minimum	20	30	20
Maximum	181	112	181
Number of unweighted cases	119	37	156

Table A.3.7. Average Time to Complete the Health Facility Interviews

Average time needed to complete health facility interview, in minutes, by type of facility

	Health Center	Health Post	Community Health Center	Mother/Child Integral Care Center	Permanent Medical Healthcare Center	Conver-gence center	Other public-sector facilities	ZOI
Average (minutes)	76	65	46	113	82	49	66	56
Standard deviation	25	23	11	.	30	22	33	24
Minimum	49	30	26	113	30	20	30	20
Maximum	120	130	70	113	120	181	95	181
Number of unweighted cases	6	30	21	1	10	85	3	156

Annex 4. FTF Indicators

The following tables show the fourteen indicators required for *Feed the Future* (FTF) reporting

Table A.4.1. Key FTF Indicators: Prevalence of Poverty and Consumption Expenses, Per Capita

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI	No. of Households
Prevalence of poverty: Percentage of individuals who live below the poverty line:					
1.25 USD per day, per capita (USD 2005 PPP)	4.6	4.7	6.3	5.9	3,969
Type of household					
Adult female and male	4.6	4.8	6.8	6.3	3,436
Adult male only	0.0	0.0	0.0	0.0	68
Adult female only	5.0	4.1	2.2	2.6	464
Child no adults	--	0.0	--	0.0	1
2.00 USD per day, per capita (USD 2005 PPP)	26.2	28.2	30.2	29.7	3,969
Type of household					
Adult female and male	26.4	29.6	31.0	30.5	3,436
Adult male only	12.9	5.1	13.0	10.7	68
Adult female only	21.0	17.9	24.2	22.9	464
Child no adults	--	0.0	--	0.0	1
Consumption expenses, per day, per capita, average (USD 2010 constant)	4.04	3.96	3.61	3.69	3,969
Type of household					
Adult female and male	3.98	3.82	3.51	3.59	3,436
Adult male only	12.20	6.03	6.93	6.74	68
Adult female only	4.90	5.13	4.23	4.42	464
Child no adults	--	3.53	--	3.53	1
Number of households	1,252	1,733	984	3,969	

Table A.4.2. Key FTF Indicators: Nutrition, Fertility, and Health

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI	No. of Cases
Prevalence of low height-for-age in children under 5 years old (chronic malnutrition, stunting)	60.4	65.3	68.3	67.4	3,312
Sex					
Male	62.4	67.0	68.0	67.6	1,664
Female	58.2	63.5	68.6	67.2	1,648
Number of cases	1,030	1,448	834	3,312	
Prevalence of low weight-for-age in children under 5 years old (global malnutrition, underweight)	12.0	14.2	18.3	17.3	3,312
Sex					
Male	12.7	12.5	19.5	17.8	1,664
Female	11.3	15.8	17.1	16.7	1,648
Number of cases	1,030	1,448	834	3,312	
Prevalence of low weight-for-height in children under 5 years old (acute malnutrition, wasting)	0.5	0.9	0.8	0.8	3,312
Sex					
Male	0.2	1.2	1.2	1.2	1,664
Female	0.8	0.7	0.4	0.5	1,648
Number of cases	1,030	1,448	834	3,312	
Prevalence of low body-mass index in non-pregnant women from 15 to 49 years old	1.6	2.5	2.3	2.3	5,152
Number of cases	1,788	2,109	1,255	5,152	
Prevalence of households with moderate or severe hunger	7.2	13.7	14.0	13.7	4,006
Type of household					
Adult female and male	7.1	12.8	13.1	12.8	3,470
Adult male only	*	18.8	*	20.4	68
Adult female only	9.4	19.2	18.7	18.7	467
Child no adults	.	*	.	*	1
Number of cases	1,264	1,745	997	4,006	
Percentage of children from 6 to 23 months receiving a minimum acceptable diet	42.5	38.7	40.0	39.8	967
Sex					
Male	46.6	40.1	34.1	35.7	496
Female	38.6	37.2	46.9	44.5	471
Number of cases	303	427	237	967	
Dietary diversity in females: average number of food groups consumed (15 to 49 years old)	4.6	4.5	4.4	4.4	5,566
Number of cases	1,936	2,273	1,357	5,566	

* Less than 25 cases

Table A.4.3. Key FTF Indicators: Nutrition, Fertility and Health

	RVCP Direct Beneficiaries	RVCP Indirect Beneficiaries	Health Only	ZOI	No. of Cases
Prevalence of exclusive breastfeeding in children under 6 months old	66.0	56.0	68.7	66.3	318
Sex					
Male	64.3	68.1	84.2	80.7	163
Female	67.7	42.1	50.0	49.1	155
Number of cases	113	123	82	318	
Percentage of anemia in children from 6 to 59 months old	35.4	32.8	34.5	34.2	2,945
Sex					
Male	35.4	34.8	35.5	35.3	1,482
Female	35.5	30.7	33.5	32.9	1,463
Number of cases	904	1,306	735	2,945	
Prevalence of anemia in reproductive-age women (15 to 49 years old)	17.0	18.0	18.1	18.0	5,481
Pregnancy status					
Pregnant	19.6	27.6	29.4	28.8	390
Not pregnant	16.8	17.3	17.1	17.1	5,091
Number of cases	1,896	2,256	1,329	5,481	
Women's Empowerment in Agriculture Index (WEAI)	NA	NA	NA	0.77	1,173

Annex 5. Updating Poverty Lines to 2013 and Consumption Conversion Factors

A.5.1. Updating Poverty Lines

EMEPAO 2013 applied the procedure used by the USAID/Guatemala M&E Project (implemented by DevTech Systems) to estimate the equivalent of the 2011 national poverty lines in 2013 Quetzales. With the aim of being consistent with the poverty line being used in other measurements by USAID/Guatemala, the 2011 national extreme poverty line was updated by the M&E Project in 2013.

Although the extreme poverty line is based on the basic food basket necessary for survival, the M&E Project updated the line using the overall Consumer Price Index (CPI) and not the Food CPI. USAID/Guatemala considered that using the Food CPI overestimates inflation for the extremely poor, since this group is very sensitive to price changes, and thus, may adjust their consumption to their budget. Therefore, these households would be unlikely to continue to purchase a food basket whose cost increased dramatically over two years, as is the case for the Food CPI (which increased by approximately 20% over this period). Consequently, although it is an approximation, the overall CPI was used to update poverty lines.

<u>The following processes were used:</u>

Extreme poverty line (Government of Guatemala - Encuesta Nacional de Condiciones de Vida (Living Standards Measurement Survey) 2011: Q4,380/year (Q12.00/day)

Total poverty line (Government of Guatemala - Encuesta Nacional de Condiciones de Vida (Living Standards Measurement Survey) 2011: Q9,030.93/year (Q24.74/day)

Consumer Price Index (CPI) Guatemala, May 2011 (May 2011 was the midpoint of ENCOVI field work 2011, base year: 103.68

Consumer Price Index (CPI) Guatemala September 2013 (the midpoint of field work for the Poverty Assessment Tool by DevTech Systems): 113.85

Extreme Poverty: Q12.00 *(113.85/103.68) = Q13.18 per capita, per day

Total Poverty: Q24.74 *(113.85/103.68) = Q27.17 per capita, per day

A.5.2. Converting USD 1.25 and USD 2.00 (2005 PPP) to 2013 Quetzales

EMEPAO 2013 applied the procedures used by USAID's FEEDBACK program to estimate the equivalent in Quetzales 2013:

1. Poverty line (USD, 2005 PPP): 1.25
2. PPP conversion factor for private consumption, Quetzales per US International Dollar 2005: 4.54033
   (Source: World Development Indicators, World Bank, *Economic Policy & Debt, Purchasing Power Parity* series. http://databank.worldbank.org/data/views/reports/tableview.aspx#)
3. CPI, Guatemala, 2005: 100.0 base year
4. CPI, Guatemala, 2013 (EMEPAO): 152.522
   (Source: World Development Indicators , World Bank, *Financial Sector, Exchange rates & prices* series http://databank.worldbank.org/data/views/reports/tableview.aspx#, and CPI 2013 data, INE, Guatemala)

The USD 1.25 (2005 PPP) poverty line in Quetzales 2013 is: 1.25 x 4.54033 x (152.522/100) = 8.66

The USD 2.00 (2005 PPP) poverty line in Quetzales 2013 is: 2.00 x 4.54033 x (152.522/100) = 13.85

A.5.3. Obtaining the Conversion Factor for 2003 Quetzales to constant 2010 US Dollars

1. CPI, Guatemala, 2005: 100.0 base year
2. CPI, Guatemala, 2013: 152.522
3. Conversion factor from 2013 Quetzales to 2005 Quetzales: 100.0/152.52 = 0.65564312
4. Conversion factor PPP, for private consumption, Quetzales per US International Dollar, 2005: 4.54033
5. Conversion factor USD 2005 (PPP) per 2005 Quetzal: 1 / 4.54033 = 0.22024816
6. CPI, U.S., 2005: 100.0
7. CPI, U.S., 2010: 111.6563
8. Conversion factor from 2005 USD to 2010 USD: 111.6563/100 = 1.116563

The conversion for 2013 Quetzales to constant 2010 US Dollars is:

0.65564312 x 0.22024816 x 1.116563 = 0.16123638

Annex 6. Health Facilities in Guatemala—Definitions

1. **Public Hospitals**: These are the facilities providing the most complex array of healthcare services, and they are classified according to their degree of capacity. They are identified as follows:

   a) National Referral Hospitals

   Located in the capital city and cover the entire country. They provide care for all types of conditions and have the fullest complement of human resources and services on offer.

   b) Regional Hospital

   Located strategically to provide services to a region composed of several departments. They are referral hospitals for specialized and sub-specialized medical care. They provide specialized medical services to patients referred by lower level facilities, especially departmental and district hospitals within their area, including emergency case, hospitalization, and intensive care. Staffing includes general physicians and physicians specializing in internal medicine, obstetrics and gynecology, pediatrics, general surgery, traumatology and orthopedics, and anesthesiology, and other specialists such as biological chemists, pharmaceutical chemists, radiologists, psychologists, social service workers, professional nurses, and nursing assistants.

   c) Departmental Hospitals

   Located in departmental capitals, they provide health services pertaining to health promotion, prevention, and community-based rehabilitation services. Their service portfolio is strengthened in accordance to the epidemiological profile and they have specialists and diagnostic equipment adjusted to service supply in order to provide medical services. Human resources include general physicians, specialized physicians, and other professionals who work in areas including: internal medicine, general surgery, gynecology/obstetrics, trauma/orthopedics, anesthesiology, dentistry, psychiatry/psychology, clinical laboratory, radiology, and emergency. They provide healthcare 24 hours a day throughout the year.

   d) District Hospitals

   Located in Health Districts, generally in a municipality. They provide care for moderately complex conditions. They provide health services pertaining to health promotion, prevention and community-based rehabilitation services. They provide services according to the epidemiological profile, with hospitalization according to specialty. Services are offered by general physicians and physicians specializing in five basic areas: medicine, surgery, obstetrics, pediatrics, and trauma care.

2. **Mother/Child Integral Care Centers (CAIMI)**: Health facilities providing integrated care 24 hours a day throughout the year for mothers and children. Includes out-patient and in-patient care, stabilization and referral of obstetric and neonatal emergencies. CAIMIs are located in geographic areas with maternal mortality ratios above the national average and in places where more than one hour of travel by vehicle is required to transport a patient to another public service that has the capability for Cesarean deliveries. These centers are equipped for normal childbirth and for surgical deliveries; they have in-patient and birth-care areas, and

operating room. Personnel include a general physician, an obstetrician, a pediatrician, an anesthesiologist, a professional nurse, a nursing assistant, and a clinical laboratory technician.

3. **Health Centers**: These are facilities at the secondary level of care. They are divided into Type B health centers and Type A health centers, according to the services they provide.

    a) **Type B Health Centers:** These are healthcare facilities that do not include hospitalization services. They are in charge of directing, supervising, and controlling the health posts in their jurisdictions.

    If patients cannot be cared for in a Type B health center, they may be transferred to a Type A health center, and if the problem is more complex they can be transferred to a hospital. The Type B center has a birthing room for normal childbirth and offers simple surgeries (sutures, casts for lineal fractures and extraction of foreign objects, for example). They are designed to provide healthcare coverage to a population of between 10,000 and 20,000.

    b) **Type A Health Centers:** These are general healthcare facilities located in municipal capitals or in towns that, due to accessibility issues or significant population size, must have in-patient mother/child services services; they are equipped with from 6 to 9 beds. They can refer patients to hospitals as needed. In the Type A health center, there are administrative and supervisory services. These centers operate 24 hours a day, including Saturdays and Sundays. Their coverage area ranges from 20,000 to 40,000 inhabitants.

4. **Permanent Medical Healthcare Centers**: Health facilities with permanent medical care for childbirth without complications, and stabilization and referral of emergencies. They are located in selected densely populated areas and must have facilities with in-patient capabilities for maternal and child care. They also perform out-patient care and provide ambulatory care, especially through home visits to new mothers. They provide health promotion, prevention, curative, and recovery services. They have hospitalization services (from six to ten beds) and a birthing room. They operate 24 hours a day.

5. **Health Posts**: These are health facilities providing preventive care, located in municipal capitals and villages. By mutual agreement with the population in their jurisdictions, health posts must cover the health needs of areas with 2,000 to 10,000 inhabitants. Human resources for these posts must include a nursing assistant, and whenever necessary, a rural health technician.

6. **Community Health Centers**: They are the less complex health facilities under the MSPAS that are the entry point to the healthcare network for any individual, because they are located within communities. They are able to implement coordinated actions with traditional therapists, thus establishing a dynamic and participative relationship with the various community actors. They are located in each health sector, and cover a population that may range from 1,200 to 4,000 inhabitants. Actions aimed at individuals, families, and communities are implemented in these centers, which provide culturally-relevant health promotion, prevention, surveillance, recovery, and rehabilitation services, with gender and inter-cultural approaches, and according to established healthcare norms.

7. **Convergence Centers**: These centers are another entry point to the healthcare network, providing culturally-relevant prevention, health promotion, curative, rehabilitation and recovery services, with a gender-sensitive approach, and community participation. Services are aimed at individuals, families and communities, with the participation of institutional personnel and volunteers (birth attendants, health workers, counselors, vector volunteers and traditional therapists, among others)

Annex 7. WEAI Sub-Indices: Concepts and Calculations

A.7.1. The Five Domains of Empowerment (5DE)

The 5DE is a measure of empowerment rather than disempowerment. As such, the sub-index describes women as "empowered" or "not yet empowered," rather than disempowered. A woman is defined as empowered in the five domains if she has achievements[17] in 80% or more of the weighted indicators. Within the 5DE, the 80 % threshold is also called the empowerment threshold. For women who are not yet empowered, the 5DE captures the percentage of indicators in which those women do have adequate achievement. The 5DE contributes 90% of the weight to the WEAI. The 5DE score ranges from zero to one, where higher values indicate greater empowerment.

The 5DE is calculated by first constructing the disempowerment index (M^0), and then converting M^0 to empowerment. The formula is: 5DE = 1- M^0. The disempowerment index is constructed using a multidimensional methodology known as the Alkire Foster Method.[18]. M^0 is calculated by multiplying the disempowered headcount (H) and the average inadequacy score (A). The disempowered headcount reflects the proportion of women who are not yet empowered. The average inadequacy score reflects the average percentage of indicators in which women who are not yet empowered did not yet achieve adequacy.[19]. In sum, the 5DE is expressed as: 5DE = 1 – H x A. It is important to note that Table 10.3 reports H and A as percentages, but in the 5DE formula, the equivalent proportions are used.

The results presented in this section do not represent the levels of empowerment of all adult women in the population. These results represent the status of primary decision-makers within the household, who are likely to be the most empowered relative to other adults in the household.

In addition to examining the 5DE for the sample as a whole, 5DE scores were analyzed and compared by household type. As shown in Table A.7.1, the 5DE sub-index differs significantly by household type. Women in male and female adult households have a significantly lower value for 5DE (0.75) than women in female adult-only households (0.94).

Table A.7.1 Women's 5DE Sub-Index and Household Type

WEAI and sub-index values for Guatemala

Household Type*	Baseline value	SD	n (unweighted)
Male and female adults	0.75[a]	0.24	1,072
Female adult only	0.94[a]	0.13	101

*The difference between household types is statistically significant at the 0.05 level; comparisons across rows.

17 Having "adequate achievement" means an individual score above an adequacy cutoff established for each indicator.

18 University of Oxford. (2013). Oxford Poverty & Human Development Initiative (OPHI). Alkire Foster Method: OPHI's method for multidimensional measurement. Retrieved from http://www.ophi.org.uk/research/multidimensional-poverty/alkire-foster-method.

19 Alkire, S., Meinzen-Dick, R., Peterman, A., Quisumbing, A., Seymour, G., & Vaz, A. (2013). The Women's Empowerment in Agriculture Index. World Development, 52(C), 71-91.

The five domains include:

a. Production Domain

Input in Productive Decisions. Results shown in Table 10.4 indicate that among women in the ZOI, 40.5% are not yet empowered and have inadequate input into productive decisions.

Autonomy in Production. With respect to autonomy in production, 5.8% of women are not yet empowered and have inadequacy in the indicator.

b. Resources Domain

Ownership of Assets. Among women in the ZOI, 16.6% are not yet empowered and experience inadequacy in ownership of assets.

Purchase, Sale, or Transfer of Assets. The percentage of women who are both not yet empowered and have inadequate achievement in terms of controlling the purchase, sale, or transfer of assets is 32.1%.

Access to and Decisions on Credit. The indicator tracking access to and decisions on credit shows the highest percentage of inadequacy among women, with 53.4% not yet empowered and not having adequate achievement.

c. Income Domain

Control Over Use of Income. The percentage of women who are both not yet empowered and lack adequacy in the control over use of income is 25.8%.

d. Leadership Domain

Participation in Formal and Informal Groups. In the ZOI, the percentage of women who are both not yet empowered and experience inadequacy in the group membership indicator is 14.5%.

Speaking in Public. A higher percentage of women (33.7 %) are both not empowered and lack adequacy in the speaking in public indicator compared to group membership.

e. Time Allocation Domain

Workload. With respect to workload, 14.7% of women are not yet empowered and are inadequate on this indicator, similar to the group participation indicator.

Leisure Time. The lowest percentage of women in the ZOI who are both not yet empowered and have inadequacy occurs for leisure time (5.6%).

A.7.2 Gender Parity Index (GPI)

The GPI is calculated by multiplying two factors. The first one is the percentage of women without gender parity (H_{GPI}), defined as women with lower achievements in the five domains than those of their male counterparts. Empowered women, meaning those who score above the empowerment threshold of the 5DE, are automatically counted as having parity with their male counterpart. The second factor is the average empowerment gap (IGPI), which measures the average percentage shortfall in empowerment between women and men living in households without gender parity across all indicators. The GPI is calculated with the formula: GPI = 1 – (H_{GPI} x I_{GPI}). The GPI ranges from zero to one, with higher values indicating greater gender parity.[20]

In Guatemala, the GPI is 0.83, which is calculated with the formula above that is based on the percentage of women without gender parity (64.6) and the average empowerment gap (26.5).

Table 10.6 presents men's and women's censored headcounts, or the percentage not yet empowered and inadequate in the ten indicators of 5DE. Note that, unlike Table 10.4, which showed percentages for all primary decision-making women in the survey, in Table 10.6, the percentages reported are based only on primary decision-making males and females in dual households, those households with both a male and a female adult.

[20] Alkire, S., Meinzen-Dick, R., Peterman, A., Quisumbing, A., Seymour, G., & Vaz, A. (2013). The Women's Empowerment in Agriculture Index. *World Development*, *52*(C), 71-91.

Annex 8. Sampling Errors

The indicators have been calculated based on the survey database, and they estimate the population parameters under study with a margin of error. This margin of error is reported in the tables included in this section, by means of indicator confidence intervals. These intervals correspond to the 95% level of confidence, so the population parameter must be included in this interval with a probability of 95%.

The margin of error for each indicator can be seen as the radius of the confidence interval, which is calculated as twice the standard error (2*SE) using a 95% confidence level. The standard error of the indicator estimates the standard deviation of possible indicator values, calculated as the square root of the variance of these possible values.

Given that the survey sample is based on a complex design, which includes the use of strata (domains, mainly) and conglomerates (census tracts), the variance of each indicator is estimated using the intra-class correlation of the values for household indicators in each census tract. To that end, we applied the Taylor method for linearization or approximation.

In order to evaluate survey sample efficiency, we also calculated the design effect (DEFT), which is equal to the square root of the indicator known as DEFF. The latter is equal to the ratio of the variance of the indicator calculated considering the complex design used for sample selection, divided by the variance calculated assuming that the sample was obtained by means of a simple design.

The tables in this section show the results for the main survey indicators, at the level of the three domains and the sub-domains defined by the main characteristics of the households and individuals surveyed. These tables specifically report the following values:

Estimated Value (V)	The estimated indicator value
Standard Error (SE)	The standard error for the indicator
No. of cases	The number of units in the sub-domain sample
Relative Error (SE/V)	The Standard Error as a proportion of the indicator value
Confidence Interval	The upper and lower bounds of the 95% confidence interval

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
Prevalence of Poverty: USD 1.25 per capita per day (USD 2005 PPP)	RVCP (1+2)	4.70	0.50	3,010	0.11	3.71	5.69
	ZOI (1+2+3)	5.88	0.95	4,007	0.16	4.01	7.75
	RVCP Direct Beneficiaries (1)	4.63	0.76	1,264	0.16	3.12	6.14
	RVCP Indirect Beneficiaries (2)	4.71	0.56	1,746	0.12	3.59	5.83
	Health Only (3)	6.25	1.23	997	0.20	3.74	8.76
	Comparison 4	4.61	0.98	1,438	0.21	2.65	6.57
	Comparison 5	5.99	1.33	856	0.22	3.27	8.71
Prevalence of poverty: USD 2.00 per capita per day (USD 2005 PPP)	RVCP (1+2)	27.96	1.43	3,010	0.05	25.14	30.78
	ZOI (1+2+3)	29.65	2.30	4,007	0.08	25.11	34.20
	RVCP Direct Beneficiaries (1)	26.18	2.06	1,264	0.08	22.08	30.27
	RVCP Indirect Beneficiaries (2)	28.22	1.61	1,746	0.06	25.02	31.42
	Health Only (3)	30.19	2.99	997	0.10	24.10	36.27
	Comparison 4	24.93	1.86	1,438	0.07	21.23	28.64
	Comparison 5	29.49	2.78	856	0.09	23.80	35.19
Prevalence of poverty: 13.18 Quetzales per capita per day (extreme poverty line)	RVCP (1+2)	24.9	1.26	2,985	0.05	22.41	27.40
	ZOI (1+2+3)	27.0	2.22	3,969	0.08	22.68	31.42
	RVCP Direct Beneficiaries (1)	23.8	1.86	1,252	0.08	20.10	27.51
	RVCP Indirect Beneficiaries (2)	25.1	1.43	1,733	0.06	22.23	27.90
	Health Only (3)	27.7	2.88	984	0.10	21.86	33.58
	Comparison 4	21.1	1.78	1,415	0.08	17.56	24.67
	Comparison 5	26.8	2.91	846	0.11	20.81	32.74
Prevalence of poverty: 27.17 Quetzales per capita per day (total poverty line)	RVCP (1+2)	71.68	2.35	2,985	0.03	67.04	76.32
	ZOI (1+2+3)	76.16	2.30	3,969	0.03	71.63	80.69
	RVCP Direct Beneficiaries (1)	70.91	2.64	1,252	0.04	65.66	76.15
	RVCP Indirect Beneficiaries (2)	71.79	2.67	1,733	0.04	66.48	77.10
	Health Only (3)	77.57	2.91	984	0.04	71.65	83.48
	Comparison 4	69.02	2.73	1,415	0.04	63.59	74.45
	Comparison 5	76.31	2.34	846	0.03	71.53	81.10
Consumption expenses per capita per day, average (USD 2010 constant)	RVCP (1+2)	3.97	0.17	3,010	0.04	3.64	4.31
	ZOI (1+2+3)	3.69	0.16	4,007	0.04	3.38	4.00
	RVCP Direct Beneficiaries (1)	4.04	0.17	1,264	0.04	3.70	4.38
	RVCP Indirect Beneficiaries (2)	3.96	0.19	1,746	0.05	3.58	4.34
	Health Only (3)	3.60	0.20	997	0.05	3.20	4.01
	Comparison 4	4.32	0.24	1,438	0.06	3.83	4.80
	Comparison 5	3.50	0.14	856	0.04	3.21	3.79

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
Prevalence of low height for age in children under 5 years old (chronic malnutrition)	RVCP (1+2)	64.72	1.94	2,478	0.03	60.88	68.55
	ZOI (1+2+3)	67.40	2.39	3,312	0.04	62.69	72.10
	RVCP Direct Beneficiaries (1)	60.36	1.53	1,030	0.03	57.32	63.41
	RVCP Indirect Beneficiaries (2)	65.27	2.17	1,448	0.03	60.95	69.59
	Health Only (3)	68.26	3.08	834	0.05	61.98	74.53
	Comparison 4	59.94	2.46	1,167	0.04	55.03	64.85
	Comparison 5	64.39	3.03	737	0.05	58.18	70.59
Prevalence of low weight for age in children under 5 years old (global malnutrition)	RVCP (1+2)	13.93	0.91	2,478	0.07	12.14	15.73
	ZOI (1+2+3)	17.26	1.59	3,312	0.09	14.12	20.39
	RVCP Direct Beneficiaries (1)	12.03	0.77	1,030	0.06	10.49	13.56
	RVCP Indirect Beneficiaries (2)	14.17	1.02	1,448	0.07	12.15	16.20
	Health Only (3)	18.33	2.07	834	0.11	14.11	22.54
	Comparison 4	16.55	1.45	1,167	0.09	13.67	19.44
	Comparison 5	22.16	2.15	737	0.10	17.76	26.57
Prevalence of low weight for height in children under 5 years old (acute malnutrition)	RVCP (1+2)	0.89	0.19	2,478	0.21	0.52	1.25
	ZOI (1+2+3)	0.83	0.23	3,312	0.27	0.38	1.27
	RVCP Direct Beneficiaries (1)	0.47	0.17	1,030	0.36	0.13	0.80
	RVCP Indirect Beneficiaries (2)	0.94	0.21	1,448	0.22	0.53	1.35
	Health Only (3)	0.81	0.29	834	0.36	0.21	1.41
	Comparison 4	1.28	0.32	1,167	0.25	0.65	1.91
	Comparison 5	1.29	0.37	737	0.28	0.54	2.04
Total Fertility Rate	RVCP (1+2)	4.08	0.16	4,209	0.04	3.77	4.39
	ZOI (1+2+3)	4.03	0.19	5,566	0.05	3.66	4.40
	RVCP Direct Beneficiaries (1)	3.84	0.24	1,936	0.06	3.36	4.32
	RVCP Indirect Beneficiaries (2)	4.10	0.17	2,273	0.04	3.77	4.44
	Health Only (3)	4.02	0.24	1,357	0.06	3.53	4.50
	Comparison 4	4.16	0.21	1,864	0.05	3.74	4.57
	Comparison 5	5.06	0.53	1,129	0.10	4.01	6.11
Prevalence in modern contraceptive method use (15-49 year-old women, married or in a consensual union)	RVCP (1+2)	40.31	1.44	2,654	0.04	37.46	43.15
	ZOI (1+2+3)	39.01	2.34	3,502	0.06	34.40	43.62
	RVCP Direct Beneficiaries (1)	40.99	1.49	1,176	0.04	38.03	43.94
	RVCP Indirect Beneficiaries (2)	40.21	1.63	1,478	0.04	36.97	43.46
	Health Only (3)	38.60	3.04	848	0.08	32.41	44.79
	Comparison 4	40.37	2.19	1,126	0.05	36.00	44.74
	Comparison 5	38.71	3.40	702	0.09	31.75	45.66

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
Percentage of births attended by a physician or nurse in the previous 5 years	RVCP (1+2)	38.39	2.51	2,521	0.07	33.44	43.34
	ZOI (1+2+3)	35.60	2.61	3,362	0.07	30.44	40.75
	RVCP Direct Beneficiaries (1)	30.44	2.44	1,044	0.08	25.58	35.31
	RVCP Indirect Beneficiaries (2)	39.41	2.81	1,477	0.07	33.83	44.99
	Health Only (3)	34.70	3.34	841	0.10	27.89	41.50
	Comparison 4	47.41	3.33	1,184	0.07	40.78	54.05
	Comparison 5	33.41	5.20	753	0.16	22.76	44.06
Anemia in 15-49 year-old women (pregnant and not pregnant)	RVCP (1+2)	17.89	1.15	4,152	0.06	15.61	20.16
	ZOI (1+2+3)	18.01	1.38	5,481	0.08	15.28	20.74
	RVCP Direct Beneficiaries (1)	16.99	0.82	1,896	0.05	15.36	18.61
	RVCP Indirect Beneficiaries (2)	18.02	1.31	2,256	0.07	15.41	20.63
	Health Only (3)	18.05	1.79	1,329	0.10	14.41	21.68
	Comparison 4	21.96	1.78	1,830	0.08	18.41	25.52
	Comparison 5	28.15	3.32	1,112	0.12	21.35	34.95
Dietary diversity in women: Average number of food groups ingested (women from 15 to 49 years old)	RVCP (1+2)	4.50	0.05	4,209	0.01	4.42	4.59
	ZOI (1+2+3)	4.42	0.07	5,566	0.02	4.28	4.56
	RVCP Direct Beneficiaries (1)	4.60	0.05	1,936	0.01	4.51	4.69
	RVCP Indirect Beneficiaries (2)	4.49	0.05	2,273	0.01	4.39	4.59
	Health Only (3)	4.40	0.09	1,357	0.02	4.21	4.58
	Comparison 4	4.37	0.06	1,864	0.01	4.25	4.50
	Comparison 5	4.22	0.11	1,129	0.03	3.99	4.45
Low body-mass index (<18.5) in 15-49 year-old women	RVCP (1+2)	2.36	0.36	3,897	0.15	1.64	3.07
	ZOI (1+2+3)	2.33	0.29	5,152	0.12	1.76	2.90
	RVCP Direct Beneficiaries (1)	1.57	0.22	1,788	0.14	1.12	2.02
	RVCP Indirect Beneficiaries (2)	2.47	0.41	2,109	0.17	1.65	3.29
	Health Only (3)	2.32	0.36	1,255	0.16	1.58	3.06
	Comparison 4	2.06	0.37	1,720	0.18	1.32	2.79
	Comparison 5	2.16	0.42	1,057	0.19	1.30	3.03
Anemia in boys and girls from 6 to 59 months of age	RVCP (1+2)	33.05	1.49	2,210	0.05	30.10	36.00
	ZOI (1+2+3)	34.15	2.53	2,945	0.07	29.16	39.15
	RVCP Direct Beneficiaries (1)	35.42	1.56	904	0.04	32.32	38.53
	RVCP Indirect Beneficiaries (2)	32.76	1.66	1,306	0.05	29.45	36.06
	Health Only (3)	34.52	3.33	735	0.10	27.75	41.29
	Comparison 4	41.14	2.19	1,025	0.05	36.77	45.50
	Comparison 5	47.82	3.16	659	0.07	41.35	54.28

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
Exclusive breastfeeding in children under 6 months of age	RVCP (1+2)	57.54	3.52	236	0.06	50.57	64.50
	ZOI (1+2+3)	66.28	4.79	318	0.07	56.82	75.74
	RVCP Direct Beneficiaries (1)	65.99	3.28	113	0.05	59.40	72.57
	RVCP Indirect Beneficiaries (2)	56.03	4.09	123	0.07	47.86	64.20
	Health Only (3)	68.73	5.98	82	0.09	56.50	80.96
	Comparison 4	65.88	4.67	127	0.07	56.53	75.23
	Comparison 5	46.21	4.32	78	0.09	37.28	55.14
Percentage of boys and girls from 12 to 59 months old who received 3 doses of Pentavalent vaccine	RVCP (1+2)	97.41	0.39	1,937	0.00	96.63	98.19
	ZOI (1+2+3)	95.70	0.83	2,608	0.01	94.06	97.33
	RVCP Direct Beneficiaries (1)	98.35	0.33	791	0.00	97.70	99.00
	RVCP Indirect Beneficiaries (2)	97.29	0.44	1,146	0.00	96.41	98.17
	Health Only (3)	95.15	1.07	671	0.01	92.98	97.33
	Comparison 4	93.40	1.44	904	0.02	90.54	96.26
	Comparison 5	93.53	1.11	574	0.01	91.25	95.80
Percentage of boys and girls from 6 to 23 months of age with a minimum acceptable diet	RVCP (1+2)	39.11	2.14	730	0.05	34.89	43.33
	ZOI (1+2+3)	39.81	2.34	967	0.06	35.19	44.43
	RVCP Direct Beneficiaries (1)	42.50	2.53	303	0.06	37.46	47.54
	RVCP Indirect Beneficiaries (2)	38.68	2.39	427	0.06	33.93	43.44
	Health Only (3)	40.04	3.02	237	0.08	33.89	46.18
	Comparison 4	33.12	2.69	342	0.08	27.76	38.48
	Comparison 5	32.82	3.09	208	0.09	26.50	39.15
Percentage of households with moderate or severe hunger incidence	RVCP (1+2)	13.00	0.67	3,009	0.05	11.67	14.32
	ZOI (1+2+3)	13.74	1.37	4,006	0.10	11.04	16.43
	RVCP Direct Beneficiaries (1)	7.22	0.58	1,264	0.08	6.07	8.36
	RVCP Indirect Beneficiaries (2)	13.73	0.75	1,745	0.05	12.24	15.22
	Health Only (3)	13.97	1.79	997	0.13	10.33	17.62
	Comparison 4	16.91	1.81	1,436	0.11	13.29	20.52
	Comparison 5	16.32	1.93	852	0.12	12.36	20.27
Infant mortality rate for the previous 5 years	RVCP (1+2)	28	5	2,521	0.17	19	38
	ZOI (1+2+3)	25	4	3,362	0.16	17	33
	RVCP Direct Beneficiaries (1)	15	4	1,039	0.27	7	23
	RVCP Indirect Beneficiaries (2)	30	5	1,482	0.18	19	40
	Health Only (3)	24	5	841	0.21	14	34
	Comparison 4	22	5	1,176	0.22	12	32
	Comparison 5	31	9	753	0.27	13	48
Child mortality rate for the previous 5 years	RVCP (1+2)	37	6	2,521	0.18	24	49
	ZOI (1+2+3)	32	5	3,362	0.15	22	41
	RVCP Direct Beneficiaries (1)	20	5	1,039	0.23	11	29
	RVCP Indirect Beneficiaries (2)	39	7	1,482	0.18	24	52
	Health Only (3)	30	6	841	0.20	18	42

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
	Comparison 4	29	7	1,176	0.25	15	44
	Comparison 5	39	11	753	0.27	18	60
Individual and household characteristics							
Percentage of households with women from 15 to 49 years old	RVCP (1+2)	90.38	0.52	3,010	0.01	89.35	91.40
	ZOI (1+2+3)	91.78	0.72	4,007	0.01	90.36	93.20
	RVCP Direct Beneficiaries (1)	89.19	0.95	1,264	0.01	87.32	91.07
	RVCP Indirect Beneficiaries (2)	90.53	0.57	1,746	0.01	89.40	91.66
	Health Only (3)	92.23	0.94	997	0.01	90.32	94.14
	Comparison 4	88.67	1.11	1,438	0.01	86.46	90.89
	Comparison 5	88.67	1.34	856	0.02	85.93	91.41
Average number of individuals in the household	RVCP (1+2)	5.66	0.07	3,010	0.01	5.51	5.80
	ZOI (1+2+3)	5.79	0.11	4,007	0.02	5.58	6.01
	RVCP Direct Beneficiaries (1)	6.51	0.11	1,264	0.02	6.29	6.73
	RVCP Indirect Beneficiaries (2)	5.55	0.08	1,746	0.01	5.39	5.71
	Health Only (3)	5.84	0.14	997	0.02	5.55	6.13
	Comparison 4	5.66	0.12	1,438	0.02	5.42	5.90
	Comparison 5	5.82	0.14	856	0.02	5.53	6.10
Percentage of households that live in rural areas	RVCP (1+2)	82.11	3.83	3,010	0.05	74.56	89.66
	ZOI (1+2+3)	77.36	5.67	4,007	0.07	66.19	88.53
	RVCP Direct Beneficiaries (1)	79.91	4.24	1,264	0.05	71.48	88.34
	RVCP Indirect Beneficiaries (2)	82.39	4.29	1,746	0.05	73.87	90.91
	Health Only (3)	75.83	7.40	997	0.10	60.77	90.90
	Comparison 4	73.90	5.38	1,438	0.07	63.18	84.62
	Comparison 5	83.94	6.49	856	0.08	70.64	97.24
Percentage of indigenous households	RVCP (1+2)	64.42	3.04	3,003	0.05	58.42	70.43
	ZOI (1+2+3)	75.83	3.59	3,997	0.05	68.76	82.89
	RVCP Direct Beneficiaries (1)	71.72	3.40	1,260	0.05	64.97	78.47
	RVCP Indirect Beneficiaries (2)	63.50	3.40	1,743	0.05	56.73	70.27
	Health Only (3)	79.49	4.67	994	0.06	70.00	88.99
	Comparison 4	58.43	4.16	1,430	0.07	50.15	66.71
	Comparison 5	67.81	6.45	853	0.10	54.60	81.01
Average age of household members	RVCP (1+2)	22.61	0.25	17,925	0.01	22.11	23.11
	ZOI (1+2+3)	22.53	0.36	23,781	0.02	21.83	23.23
	RVCP Direct Beneficiaries (1)	24.36	0.40	8,114	0.02	23.57	25.15
	RVCP Indirect Beneficiaries (2)	22.35	0.28	9,811	0.01	21.78	22.91
	Health Only (3)	22.51	0.46	5,856	0.02	21.57	23.44
	Comparison 4	23.16	0.44	8,135	0.02	22.29	24.03
	Comparison 5	22.51	0.62	4,982	0.03	21.24	23.78

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
Percentage of household members 15 years old or more, married or in a consensual union	RVCP (1+2)	63.85	0.69	10,212	0.01	62.49	65.22
	ZOI (1+2+3)	63.06	0.99	13,461	0.02	61.10	65.02
	RVCP Direct Beneficiaries (1)	62.06	0.62	4,839	0.01	60.83	63.29
	RVCP Indirect Beneficiaries (2)	64.14	0.80	5,373	0.01	62.55	65.73
	Health Only (3)	62.82	1.29	3,249	0.02	60.20	65.44
	Comparison 4	62.34	0.92	4,608	0.01	60.51	64.18
	Comparison 5	64.97	1.53	2,762	0.02	61.84	68.10
Percentage of household members 18 years old or more, with no education	RVCP (1+2)	35.04	1.36	8,760	0.04	32.36	37.71
	ZOI (1+2+3)	36.21	2.10	11,542	0.06	32.08	40.34
	RVCP Direct Beneficiaries (1)	32.20	1.42	4,156	0.04	29.37	35.02
	RVCP Indirect Beneficiaries (2)	35.49	1.56	4,604	0.04	32.39	38.58
	Health Only (3)	36.58	2.73	2,782	0.07	31.02	42.14
	Comparison 4	31.66	1.89	3,997	0.06	27.89	35.43
	Comparison 5	35.36	2.69	2,393	0.08	29.85	40.87
Percentage of household members 18 years old or more, with primary education (completed or not completed)	RVCP (1+2)	47.24	1.15	8,760	0.02	44.97	49.51
	ZOI (1+2+3)	48.54	1.49	11,542	0.03	45.59	51.48
	RVCP Direct Beneficiaries (1)	46.96	1.13	4,156	0.02	44.72	49.20
	RVCP Indirect Beneficiaries (2)	47.28	1.32	4,604	0.03	44.66	49.91
	Health Only (3)	48.95	1.93	2,782	0.04	45.03	52.87
	Comparison 4	48.75	1.41	3,997	0.03	45.93	51.57
	Comparison 5	48.92	2.02	2,393	0.04	44.77	53.06
Percentage of household members 18 years old or more, with secondary education (completed or not completed)	RVCP (1+2)	15.09	1.18	8,760	0.08	12.76	17.41
	ZOI (1+2+3)	13.68	1.72	11,542	0.13	10.28	17.07
	RVCP Direct Beneficiaries (1)	18.62	1.30	4,156	0.07	16.03	21.21
	RVCP Indirect Beneficiaries (2)	14.52	1.35	4,604	0.09	11.83	17.22
	Health Only (3)	13.23	2.24	2,782	0.17	8.67	17.79
	Comparison 4	17.26	1.47	3,997	0.08	14.34	20.18
	Comparison 5	14.64	1.94	2,393	0.13	10.67	18.61
Percentage of household members 15 years old or more, who cannot read or write	RVCP (1+2)	30.49	1.23	10,220	0.04	28.06	32.92
	ZOI (1+2+3)	31.16	1.91	13,471	0.06	27.40	34.93
	RVCP Direct Beneficiaries (1)	27.73	1.16	4,846	0.04	25.42	30.04
	RVCP Indirect Beneficiaries (2)	30.93	1.42	5,374	0.05	28.11	33.75
	Health Only (3)	31.38	2.48	3,251	0.08	26.32	36.43
	Comparison 4	27.47	1.66	4,609	0.06	24.17	30.77
	Comparison 5	32.69	2.56	2,763	0.08	27.44	37.93

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
Percentage of household members 5 to 18 years old who are presently studying	RVCP (1+2)	65.75	1.48	6,978	0.02	62.84	68.67
	ZOI (1+2+3)	65.34	1.68	9,314	0.03	62.03	68.66
	RVCP Direct Beneficiaries (1)	68.51	1.33	3,068	0.02	65.87	71.15
	RVCP Indirect Beneficiaries (2)	65.35	1.68	3,910	0.03	62.01	68.70
	Health Only (3)	65.22	2.14	2,336	0.03	60.86	69.57
	Comparison 4	68.47	1.59	3,091	0.02	65.29	71.65
	Comparison 5	66.80	2.67	1,952	0.04	61.34	72.26
Percentage of households that received government benefits through the fertilizer program during the previous 12 months	RVCP (1+2)	24.68	1.77	3,010	0.07	21.18	28.18
	ZOI (1+2+3)	26.33	3.09	4,007	0.12	20.23	32.43
	RVCP Direct Beneficiaries (1)	30.39	1.75	1,264	0.06	26.90	33.88
	RVCP Indirect Beneficiaries (2)	23.96	1.98	1,746	0.08	20.02	27.90
	Health Only (3)	26.86	4.05	997	0.15	18.62	35.10
	Comparison 4	31.23	2.53	1,438	0.08	26.19	36.27
	Comparison 5	33.72	4.82	856	0.14	23.83	43.60
Percentage of households that received government benefits through the Bono Seguro program during the previous 12 months	RVCP (1+2)	28.51	1.62	3,010	0.06	25.32	31.70
	ZOI (1+2+3)	25.74	2.39	4,007	0.09	21.03	30.44
	RVCP Direct Beneficiaries (1)	27.25	1.97	1,264	0.07	23.34	31.16
	RVCP Indirect Beneficiaries (2)	28.67	1.81	1,746	0.06	25.08	32.26
	Health Only (3)	24.84	3.12	997	0.13	18.49	31.20
	Comparison 4	28.85	1.94	1,438	0.07	24.97	32.72
	Comparison 5	33.43	2.90	856	0.09	27.48	39.38
Housing Physical Characteristics							
Percentage of households with dirt or sand floors	RVCP (1+2)	49.22	2.46	3,010	0.05	44.37	54.07
	ZOI (1+2+3)	48.12	3.44	4,007	0.07	41.34	54.90
	RVCP Direct Beneficiaries (1)	38.89	2.72	1,264	0.07	33.49	44.29
	RVCP Indirect Beneficiaries (2)	50.53	2.75	1,746	0.05	45.07	55.99
	Health Only (3)	47.77	4.47	997	0.09	38.67	56.86
	Comparison 4	41.84	3.31	1,438	0.08	35.23	48.44
	Comparison 5	53.22	5.05	856	0.09	42.88	63.57
Percentage of households with cement floors	RVCP (1+2)	37.07	1.67	3,010	0.05	33.76	40.37
	ZOI (1+2+3)	37.80	2.75	4,007	0.07	32.37	43.22
	RVCP Direct Beneficiaries (1)	47.81	1.95	1,264	0.04	43.94	51.68
	RVCP Indirect Beneficiaries (2)	35.70	1.86	1,746	0.05	32.01	39.39
	Health Only (3)	38.03	3.59	997	0.09	30.72	45.34
	Comparison 4	40.95	2.46	1,438	0.06	36.04	45.86
	Comparison 5	35.90	4.73	856	0.13	26.21	45.59

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
Percentage of households with corrugated zinc or metal sheeting roofs	RVCP (1+2)	82.01	1.93	3,010	0.02	78.19	85.83
	ZOI (1+2+3)	76.10	3.08	4,007	0.04	70.01	82.18
	RVCP Direct Beneficiaries (1)	81.31	1.93	1,264	0.02	77.47	85.15
	RVCP Indirect Beneficiaries (2)	82.10	2.17	1,746	0.03	77.79	86.41
	Health Only (3)	74.20	4.06	997	0.05	65.95	82.45
	Comparison 4	76.55	2.88	1,438	0.04	70.81	82.29
	Comparison 5	79.16	3.91	856	0.05	71.15	87.16
Percentage of households with concrete, reinforced concrete or ceramic roofs	RVCP (1+2)	11.89	1.47	3,010	0.12	8.98	14.80
	ZOI (1+2+3)	11.95	1.98	4,007	0.17	8.04	15.86
	RVCP Direct Beneficiaries (1)	12.71	1.47	1,264	0.12	9.78	15.64
	RVCP Indirect Beneficiaries (2)	11.79	1.65	1,746	0.14	8.50	15.07
	Health Only (3)	11.97	2.58	997	0.22	6.72	17.21
	Comparison 4	11.92	1.91	1,438	0.16	8.11	15.73
	Comparison 5	8.25	1.72	856	0.21	4.74	11.77
Percentage of households with cinder-block walls	RVCP (1+2)	41.94	2.60	3,010	0.06	36.80	47.08
	ZOI (1+2+3)	40.07	3.90	4,007	0.10	32.39	47.75
	RVCP Direct Beneficiaries (1)	48.04	2.74	1,264	0.06	42.59	53.48
	RVCP Indirect Beneficiaries (2)	41.16	2.92	1,746	0.07	35.37	46.96
	Health Only (3)	39.47	5.09	997	0.13	29.12	49.81
	Comparison 4	46.72	3.22	1,438	0.07	40.31	53.13
	Comparison 5	40.92	4.94	856	0.12	30.79	51.05
Percentage of households with adobe o covered adobe walls	RVCP (1+2)	31.33	2.69	3,010	0.09	26.01	36.65
	ZOI (1+2+3)	35.24	4.32	4,007	0.12	26.71	43.76
	RVCP Direct Beneficiaries (1)	28.13	2.66	1,264	0.09	22.84	33.42
	RVCP Indirect Beneficiaries (2)	31.73	3.02	1,746	0.10	25.74	37.73
	Health Only (3)	36.49	5.68	997	0.16	24.94	48.05
	Comparison 4	23.85	3.16	1,438	0.13	17.56	30.14
	Comparison 5	33.15	6.03	856	0.18	20.80	45.49
Percentage of households with electricity service	RVCP (1+2)	75.46	2.11	2,985	0.03	71.28	79.63
	ZOI (1+2+3)	82.73	3.03	3,969	0.04	76.76	88.70
	RVCP Direct Beneficiaries (1)	82.45	3.03	1,252	0.04	76.42	88.48
	RVCP Indirect Beneficiaries (2)	74.57	2.36	1,733	0.03	69.89	79.26
	Health Only (3)	85.08	3.95	984	0.05	77.04	93.12
	Comparison 4	88.72	1.59	1,415	0.02	85.55	91.89
	Comparison 5	80.37	5.11	846	0.06	69.91	90.83

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
Percentage of households with drinking-water source connected to the public water system	RVCP (1+2)	73.59	2.15	3,010	0.03	69.35	77.82
	ZOI (1+2+3)	75.72	3.38	4,007	0.04	69.05	82.40
	RVCP Direct Beneficiaries (1)	80.05	2.66	1,264	0.03	74.75	85.35
	RVCP Indirect Beneficiaries (2)	72.77	2.40	1,746	0.03	68.00	77.53
	Health Only (3)	76.41	4.41	997	0.06	67.44	85.38
	Comparison 4	64.90	4.64	1,438	0.07	55.65	74.15
	Comparison 5	62.36	7.30	856	0.12	47.41	77.31
Percentage of households where a place with water and soap for hand washing was observed	RVCP (1+2)	80.47	1.19	2,984	0.01	78.12	82.82
	ZOI (1+2+3)	79.59	2.54	3,967	0.03	74.58	84.59
	RVCP Direct Beneficiaries (1)	87.01	1.32	1,259	0.02	84.38	89.63
	RVCP Indirect Beneficiaries (2)	79.64	1.33	1,725	0.02	76.99	82.28
	Health Only (3)	79.30	3.34	983	0.04	72.52	86.09
	Comparison 4	80.04	1.94	1,407	0.02	76.17	83.92
	Comparison 5	76.69	3.37	845	0.04	69.79	83.60
Percentage of households with latrine/outhouse/cesspits	RVCP (1+2)	51.40	3.04	3,010	0.06	45.40	57.40
	ZOI (1+2+3)	59.24	4.17	4,007	0.07	51.02	67.45
	RVCP Direct Beneficiaries (1)	50.81	3.50	1,264	0.07	43.85	57.77
	RVCP Indirect Beneficiaries (2)	51.47	3.40	1,746	0.07	44.72	58.23
	Health Only (3)	61.75	5.43	997	0.09	50.71	72.79
	Comparison 4	50.10	3.48	1,438	0.07	43.18	57.03
	Comparison 5	71.72	5.23	856	0.07	60.99	82.44
Percentage of households with toilet connected to the sewage system	RVCP (1+2)	31.01	3.39	3,010	0.11	24.32	37.71
	ZOI (1+2+3)	23.22	4.02	4,007	0.17	15.29	31.15
	RVCP Direct Beneficiaries (1)	30.38	3.62	1,264	0.12	23.18	37.58
	RVCP Indirect Beneficiaries (2)	31.09	3.79	1,746	0.12	23.56	38.63
	Health Only (3)	20.72	5.20	997	0.25	10.13	31.30
	Comparison 4	25.82	4.01	1,438	0.16	17.83	33.80
	Comparison 5	11.58	4.35	856	0.38	2.67	20.49
Percentage of households that have a room used exclusively for cooking	RVCP (1+2)	66.01	1.59	3,008	0.02	62.87	69.16
	ZOI (1+2+3)	65.09	2.40	4,003	0.04	60.35	69.83
	RVCP Direct Beneficiaries (1)	67.06	1.68	1,262	0.03	63.71	70.40
	RVCP Indirect Beneficiaries (2)	65.88	1.78	1,746	0.03	62.34	69.42
	Health Only (3)	64.79	3.14	995	0.05	58.42	71.17
	Comparison 4	61.36	2.14	1,434	0.03	57.09	65.62
	Comparison 5	64.81	2.95	855	0.05	58.76	70.86

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
Percentage of households that use firewood as cooking fuel	RVCP (1+2)	93.21	1.44	3,010	0.02	90.37	96.05
	ZOI (1+2+3)	93.40	1.31	4,007	0.01	90.83	95.98
	RVCP Direct Beneficiaries (1)	95.19	1.67	1,264	0.02	91.87	98.51
	RVCP Indirect Beneficiaries (2)	92.96	1.60	1,746	0.02	89.77	96.15
	Health Only (3)	93.47	1.66	997	0.02	90.08	96.85
	Comparison 4	89.54	2.16	1,438	0.02	85.24	93.84
	Comparison 5	96.98	0.89	856	0.01	95.16	98.79
Percentage of households with a microwave oven	RVCP (1+2)	10.03	1.17	2,985	0.12	7.71	12.35
	ZOI (1+2+3)	7.30	1.02	3,969	0.14	5.29	9.31
	RVCP Direct Beneficiaries (1)	11.58	1.54	1,252	0.13	8.53	14.63
	RVCP Indirect Beneficiaries (2)	9.83	1.31	1,733	0.13	7.23	12.44
	Health Only (3)	6.42	1.29	984	0.20	3.79	9.06
	Comparison 4	11.21	1.96	1,415	0.17	7.31	15.12
	Comparison 5	5.21	1.08	846	0.21	2.99	7.42
Percentage of households with a blender	RVCP (1+2)	32.64	2.42	2,985	0.07	27.86	37.43
	ZOI (1+2+3)	31.47	3.12	3,969	0.10	25.31	37.63
	RVCP Direct Beneficiaries (1)	38.99	2.64	1,252	0.07	33.74	44.24
	RVCP Indirect Beneficiaries (2)	31.84	2.71	1,733	0.09	26.46	37.23
	Health Only (3)	31.09	4.06	984	0.13	22.83	39.35
	Comparison 4	41.38	2.89	1,415	0.07	35.62	47.15
	Comparison 5	30.78	3.68	846	0.12	23.24	38.33
Percentage of households with a refrigerator	RVCP (1+2)	23.39	2.49	2,985	0.11	18.48	28.31
	ZOI (1+2+3)	18.21	2.46	3,969	0.14	13.36	23.07
	RVCP Direct Beneficiaries (1)	29.17	2.46	1,252	0.08	24.27	34.07
	RVCP Indirect Beneficiaries (2)	22.67	2.79	1,733	0.12	17.11	28.22
	Health Only (3)	16.54	3.17	984	0.19	10.09	22.99
	Comparison 4	28.61	2.78	1,415	0.10	23.06	34.16
	Comparison 5	16.63	2.75	846	0.17	11.00	22.25
Percentage of households with a manual sewing machine	RVCP (1+2)	6.46	0.69	2,985	0.11	5.11	7.82
	ZOI (1+2+3)	6.86	0.94	3,969	0.14	5.01	8.70
	RVCP Direct Beneficiaries (1)	8.59	0.68	1,252	0.08	7.24	9.94
	RVCP Indirect Beneficiaries (2)	6.19	0.77	1,733	0.12	4.66	7.72
	Health Only (3)	6.99	1.22	984	0.17	4.51	9.46
	Comparison 4	9.88	1.01	1,415	0.10	7.87	11.89
	Comparison 5	4.99	0.84	846	0.17	3.27	6.71

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
Percentage of households with a television set	RVCP (1+2)	47.75	2.43	2,985	0.05	42.96	52.55
	ZOI (1+2+3)	49.43	3.30	3,969	0.07	42.92	55.93
	RVCP Direct Beneficiaries (1)	56.86	3.05	1,252	0.05	50.79	62.93
	RVCP Indirect Beneficiaries (2)	46.60	2.71	1,733	0.06	41.21	52.00
	Health Only (3)	49.97	4.29	984	0.09	41.24	58.70
	Comparison 4	58.08	2.80	1,415	0.05	52.50	63.67
	Comparison 5	46.00	3.96	846	0.09	37.90	54.11
Percentage of households with a tape recorder or video camera	RVCP (1+2)	18.20	0.96	2,985	0.05	16.32	20.09
	ZOI (1+2+3)	19.17	1.42	3,969	0.07	16.38	21.96
	RVCP Direct Beneficiaries (1)	20.63	1.19	1,252	0.06	18.25	23.00
	RVCP Indirect Beneficiaries (2)	17.90	1.07	1,733	0.06	15.78	20.02
	Health Only (3)	19.48	1.85	984	0.09	15.72	23.25
	Comparison 4	21.85	1.55	1,415	0.07	18.77	24.93
	Comparison 5	20.33	2.00	846	0.10	16.24	24.42
Percentage of households with a pick-up truck	RVCP (1+2)	6.74	0.70	2,985	0.10	5.36	8.11
	ZOI (1+2+3)	7.21	1.11	3,969	0.15	5.02	9.41
	RVCP Direct Beneficiaries (1)	15.04	1.23	1,252	0.08	12.60	17.48
	RVCP Indirect Beneficiaries (2)	5.69	0.76	1,733	0.13	4.17	7.20
	Health Only (3)	7.37	1.46	984	0.20	4.40	10.33
	Comparison 4	6.45	0.81	1,415	0.13	4.83	8.07
	Comparison 5	5.13	1.11	846	0.22	2.87	7.40
Percentage of households with a motorcycle	RVCP (1+2)	6.63	1.02	2,985	0.15	4.63	8.64
	ZOI (1+2+3)	5.63	0.84	3,969	0.15	3.96	7.30
	RVCP Direct Beneficiaries (1)	8.17	1.11	1,252	0.14	5.96	10.38
	RVCP Indirect Beneficiaries (2)	6.44	1.14	1,733	0.18	4.17	8.70
	Health Only (3)	5.31	1.07	984	0.20	3.14	7.48
	Comparison 4	7.43	1.13	1,415	0.15	5.18	9.69
	Comparison 5	3.54	0.74	846	0.21	2.02	5.06
Percentage of households with a bicycle	RVCP (1+2)	5.98	0.64	2,985	0.11	4.72	7.23
	ZOI (1+2+3)	11.31	1.81	3,969	0.16	7.74	14.88
	RVCP Direct Beneficiaries (1)	6.79	0.98	1,252	0.14	4.84	8.74
	RVCP Indirect Beneficiaries (2)	5.87	0.71	1,733	0.12	4.47	7.28
	Health Only (3)	13.03	2.41	984	0.19	8.13	17.93
	Comparison 4	17.82	2.32	1,415	0.13	13.19	22.45
	Comparison 5	11.41	2.45	846	0.22	6.38	16.44

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
Nutritional Status and Vegetable Gardens							
Percentage of boys and girls under 5 years old who are overweight or obese	RVCP (1+2)	5.72	0.50	2,478	0.09	4.73	6.70
	ZOI (1+2+3)	4.78	0.49	3,312	0.10	3.80	5.75
	RVCP Direct Beneficiaries (1)	7.11	0.66	1,030	0.09	5.80	8.42
	RVCP Indirect Beneficiaries (2)	5.54	0.56	1,448	0.10	4.43	6.65
	Health Only (3)	4.48	0.63	834	0.14	3.20	5.75
	Comparison 4	5.09	0.72	1,167	0.14	3.64	6.53
	Comparison 5	5.25	1.00	737	0.19	3.21	7.30
Percentage of 15-49 year-old women who are overweight or obese	RVCP (1+2)	41.88	1.22	3,897	0.03	39.48	44.28
	ZOI (1+2+3)	42.88	1.61	5,152	0.04	39.71	46.06
	RVCP Direct Beneficiaries (1)	41.47	1.21	1,788	0.03	39.07	43.87
	RVCP Indirect Beneficiaries (2)	41.94	1.38	2,109	0.03	39.19	44.69
	Health Only (3)	43.20	2.09	1,255	0.05	38.96	47.45
	Comparison 4	44.21	1.69	1,720	0.04	40.83	47.58
	Comparison 5	41.85	2.94	1,057	0.07	35.82	47.87
Percentage of boys and girls from 0 to 59 months old who were breastfed within the first hour after birth	RVCP (1+2)	55.87	1.51	1,803	0.03	52.89	58.86
	ZOI (1+2+3)	56.35	1.71	2,392	0.03	52.98	59.73
	RVCP Direct Beneficiaries (1)	59.39	1.87	768	0.03	55.67	63.10
	RVCP Indirect Beneficiaries (2)	55.40	1.70	1,035	0.03	52.02	58.78
	Health Only (3)	56.51	2.21	589	0.04	52.02	61.00
	Comparison 4	48.31	2.08	852	0.04	44.17	52.45
	Comparison 5	48.77	4.82	508	0.10	38.89	58.64
Percentage of boys and girls under 5 years old who were given iron in the previous 7 days	RVCP (1+2)	24.86	1.36	2,435	0.05	22.17	27.56
	ZOI (1+2+3)	21.43	1.61	3,260	0.08	18.26	24.60
	RVCP Direct Beneficiaries (1)	22.18	1.02	1,020	0.05	20.14	24.22
	RVCP Indirect Beneficiaries (2)	25.21	1.54	1,415	0.06	22.15	28.26
	Health Only (3)	20.34	2.09	825	0.10	16.08	24.60
	Comparison 4	18.16	1.10	1,160	0.06	15.96	20.36
	Comparison 5	28.06	2.54	724	0.09	22.87	33.26
Percentage of boys and girls under 5 years old who received a dose of vitamin A in the previous 6 days	RVCP (1+2)	67.12	1.36	2,436	0.02	64.44	69.79
	ZOI (1+2+3)	62.78	2.28	3,262	0.04	58.28	67.28
	RVCP Direct Beneficiaries (1)	62.45	1.78	1,021	0.03	58.90	66.00
	RVCP Indirect Beneficiaries (2)	67.72	1.52	1,415	0.02	64.71	70.74
	Health Only (3)	61.40	2.94	826	0.05	55.41	67.39
	Comparison 4	58.21	2.17	1,157	0.04	53.88	62.54
	Comparison 5	63.78	2.43	727	0.04	58.80	68.75

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
Percentage of boys and girls under 5 years old who received medication against intestinal parasites in the previous 6 months	RVCP (1+2)	46.14	1.28	2,433	0.03	43.61	48.67
	ZOI (1+2+3)	41.70	1.69	3,259	0.04	38.37	45.03
	RVCP Direct Beneficiaries (1)	40.34	1.48	1,018	0.04	37.40	43.28
	RVCP Indirect Beneficiaries (2)	46.89	1.43	1,415	0.03	44.05	49.73
	Health Only (3)	40.30	2.18	826	0.05	35.86	44.73
	Comparison 4	42.19	1.86	1,160	0.04	38.48	45.89
	Comparison 5	41.72	2.67	727	0.06	36.25	47.19
Percentage of households that produce vegetables for household consumption	RVCP (1+2)	10.08	0.76	3,010	0.07	8.59	11.57
	ZOI (1+2+3)	12.09	2.40	4,006	0.20	7.36	16.82
	RVCP Direct Beneficiaries (1)	19.82	1.73	1,264	0.09	16.39	23.25
	RVCP Indirect Beneficiaries (2)	8.85	0.81	1,746	0.09	7.24	10.46
	Health Only (3)	12.74	3.17	996	0.25	6.29	19.18
	Comparison 4	10.84	1.73	1,436	0.16	7.39	14.28
	Comparison 5	18.09	2.77	855	0.15	12.41	23.76
Percentage of households that consider that malnutrition affects their household	RVCP (1+2)	52.70	1.41	3,008	0.03	49.91	55.49
	ZOI (1+2+3)	52.55	2.35	4,004	0.04	47.92	57.18
	RVCP Direct Beneficiaries (1)	51.31	1.61	1,263	0.03	48.11	54.50
	RVCP Indirect Beneficiaries (2)	52.88	1.58	1,745	0.03	49.74	56.01
	Health Only (3)	52.50	3.07	996	0.06	46.26	58.75
	Comparison 4	50.46	2.07	1,438	0.04	46.34	54.58
	Comparison 5	57.33	2.26	855	0.04	52.71	61.95
Percentage of households that consider that malnutrition is a serious problem in their community	RVCP (1+2)	59.94	1.33	3,010	0.02	57.32	62.57
	ZOI (1+2+3)	59.99	1.95	4,007	0.03	56.15	63.83
	RVCP Direct Beneficiaries (1)	58.25	1.60	1,264	0.03	55.06	61.44
	RVCP Indirect Beneficiaries (2)	60.16	1.49	1,746	0.02	57.21	63.11
	Health Only (3)	60.00	2.54	997	0.04	54.84	65.16
	Comparison 4	65.37	1.36	1,438	0.02	62.66	68.09
	Comparison 5	61.92	2.32	856	0.04	57.16	66.68
Maternal Health							
Percentage of women from 18 to 24 years old gave birth for the first time before they were 18 years old	RVCP (1+2)	23.73	1.75	1,222	0.07	20.27	27.18
	ZOI (1+2+3)	21.62	1.63	1,602	0.08	18.42	24.83
	RVCP Direct Beneficiaries (1)	21.01	1.21	588	0.06	18.60	23.42
	RVCP Indirect Beneficiaries (2)	24.18	2.04	634	0.08	20.13	28.23
	Health Only (3)	21.01	2.05	380	0.10	16.85	25.17
	Comparison 4	26.64	1.89	503	0.07	22.88	30.41
	Comparison 5	26.40	3.16	332	0.12	19.91	32.88

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
Percentage of 15-49 year-old women who received pre-natal care during last birth in the 5 previous years	RVCP (1+2)	93.88	0.48	1,840	0.01	92.94	94.82
	ZOI (1+2+3)	92.62	1.24	2,432	0.01	90.18	95.06
	RVCP Direct Beneficiaries (1)	93.60	0.72	775	0.01	92.17	95.04
	RVCP Indirect Beneficiaries (2)	93.92	0.53	1,065	0.01	92.86	94.97
	Health Only (3)	92.21	1.62	592	0.02	88.91	95.51
	Comparison 4	90.23	1.08	857	0.01	88.07	92.40
	Comparison 5	91.78	2.10	516	0.02	87.49	96.08
Percentage of 15-49 year-old women who received 4 or more pre-natal checkups during last birth in the 5 previous years	RVCP (1+2)	76.68	1.21	1,839	0.02	74.29	79.07
	ZOI (1+2+3)	76.00	1.82	2,430	0.02	72.41	79.59
	RVCP Direct Beneficiaries (1)	74.86	1.58	775	0.02	71.72	78.00
	RVCP Indirect Beneficiaries (2)	76.92	1.35	1,064	0.02	74.23	79.61
	Health Only (3)	75.78	2.38	591	0.03	70.93	80.62
	Comparison 4	68.34	2.08	855	0.03	64.19	72.49
	Comparison 5	66.39	2.42	516	0.04	61.44	71.33
Percentage of 15-49 year-old women who received post-natal care during last birth in the 5 previous years	RVCP (1+2)	74.22	1.53	1,839	0.02	71.20	77.25
	ZOI (1+2+3)	72.53	2.19	2,431	0.03	68.21	76.85
	RVCP Direct Beneficiaries (1)	72.08	2.49	774	0.03	67.12	77.04
	RVCP Indirect Beneficiaries (2)	74.51	1.70	1,065	0.02	71.13	77.88
	Health Only (3)	71.99	2.84	592	0.04	66.21	77.77
	Comparison 4	74.40	2.09	857	0.03	70.23	78.57
	Comparison 5	65.45	3.09	516	0.05	59.12	71.78
Fertility and Family Planning							
Average live births to 15-49 year-old women	RVCP (1+2)	2.58	0.05	4,209	0.02	2.47	2.68
	ZOI (1+2+3)	2.54	0.05	5,566	0.02	2.44	2.65
	RVCP Direct Beneficiaries (1)	2.54	0.06	1,936	0.02	2.42	2.67
	RVCP Indirect Beneficiaries (2)	2.58	0.06	2,273	0.02	2.46	2.70
	Health Only (3)	2.53	0.07	1,357	0.03	2.39	2.67
	Comparison 4	2.58	0.09	1,864	0.03	2.40	2.76
	Comparison 5	2.80	0.12	1,129	0.04	2.56	3.03
Percentage of 15-49 year-old women, married or in a consensual union with unmet family-planning needs	RVCP (1+2)	17.29	0.86	2,654	0.05	15.59	18.99
	ZOI (1+2+3)	17.33	1.11	3,502	0.06	15.14	19.52
	RVCP Direct Beneficiaries (1)	19.14	1.15	1,176	0.06	16.86	21.42
	RVCP Indirect Beneficiaries (2)	17.03	0.96	1,478	0.06	15.12	18.94
	Health Only (3)	17.34	1.43	848	0.08	14.42	20.26
	Comparison 4	18.72	1.47	1,126	0.08	15.79	21.65
	Comparison 5	20.71	2.17	702	0.10	16.27	25.16

Indicator WHIP-FTF Indicators	Domain	Estimated Value (V)	Standard Error (SE)	No. of Cases	Relative Error (SE/V)	Confidence Interval	
						Lower	Upper
Child Health							
Percentage of boys and girls born in the 5 previous years who received postnatal care	RVCP (1+2)	82.34	1.40	1,838	0.02	79.58	85.09
	ZOI (1+2+3)	82.48	1.84	2,429	0.02	78.84	86.11
	RVCP Direct Beneficiaries (1)	85.05	1.36	773	0.02	82.35	87.76
	RVCP Indirect Beneficiaries (2)	81.98	1.57	1,065	0.02	78.85	85.11
	Health Only (3)	82.52	2.40	591	0.03	77.64	87.41
	Comparison 4	68.85	2.53	857	0.04	63.81	73.88
	Comparison 5	66.71	3.48	516	0.05	59.58	73.85
Percentage of boys and girls under 5 years old with diarrhea in the previous 2 weeks	RVCP (1+2)	23.16	1.40	2,436	0.06	20.40	25.93
	ZOI (1+2+3)	21.85	1.12	3,262	0.05	19.64	24.06
	RVCP Direct Beneficiaries (1)	21.07	1.45	1,021	0.07	18.18	23.96
	RVCP Indirect Beneficiaries (2)	23.44	1.57	1,415	0.07	20.31	26.57
	Health Only (3)	21.43	1.41	826	0.07	18.56	24.30
	Comparison 4	27.87	1.82	1,160	0.07	24.23	31.50
	Comparison 5	28.00	1.58	727	0.06	24.77	31.23
Percentage of boys and girls under 5 years old with diarrhea in the previous 2 weeks who received oral rehydration salts	RVCP (1+2)	52.55	2.51	521	0.05	47.60	57.51
	ZOI (1+2+3)	39.31	3.74	698	0.10	31.93	46.69
	RVCP Direct Beneficiaries (1)	49.12	2.94	201	0.06	43.25	55.00
	RVCP Indirect Beneficiaries (2)	52.96	2.78	320	0.05	47.43	58.48
	Health Only (3)	34.77	4.82	177	0.14	24.95	44.59
	Comparison 4	43.85	3.43	300	0.08	37.00	50.70
	Comparison 5	49.33	4.40	195	0.09	40.31	58.35
Percentage of boys and girls under 5 years old who had a cough accompanied by rapid breathing in the previous 2 weeks and who were provided care at a community center of convergence center	RVCP (1+2)	11.55	1.63	386	0.14	8.32	14.79
	ZOI (1+2+3)	20.55	6.03	505	0.29	8.63	32.47
	RVCP Direct Beneficiaries (1)	22.43	3.24	160	0.14	15.93	28.92
	RVCP Indirect Beneficiaries (2)	10.13	1.76	226	0.17	6.62	13.63
	Health Only (3)	23.96	8.14	119	0.34	7.38	40.53
	Comparison 4	8.72	3.46	230	0.40	1.79	15.65
	Comparison 5	8.89	4.45	137	0.50	-0.23	18.00
Percentage of boys and girls under 5 years old who had a cough accompanied by rapid breathing in the previous 2 weeks and who were provided care at a healthcare facility	RVCP (1+2)	66.47	2.62	386	0.04	61.29	71.65
	ZOI (1+2+3)	61.97	4.41	505	0.07	53.26	70.68
	RVCP Direct Beneficiaries (1)	56.22	3.90	160	0.07	48.38	64.05
	RVCP Indirect Beneficiaries (2)	67.82	2.85	226	0.04	62.14	73.50
	Health Only (3)	60.27	6.05	119	0.10	47.95	72.58
	Comparison 4	46.86	2.75	230	0.06	41.35	52.36
	Comparison 5	46.76	6.84	137	0.15	32.76	60.76

Annex 9. List of Survey Personnel

EMEPAO PROJECT 2013		
	NAME	**POSITION**
ADMINISTRATIVE PERSONNEL		
	Zulma Guillermina Rodas Elías	Program Manager
	Ruth Damaris Garavito Velasco	Administrative Assistant
	Norma María Samol Juárez	Administrative Assistant
	Aura Verónica Garavito Reyes	Graphic Designer
	Flor de María Letona Rivera	Graphic Designer
DATA PROCESSING PERSONNEL		
	José Carlos Fernández Cóbar	Database Administrator
	Mynor Wotzbely Hidalgo Letona	Network and Data Administrator
	Alejandro Muralles Peña	Development
	Luis Fernando Godínez Salazar	Development
	Maria Eugenia Quemé Peña	Development
	Nery Abner Herrarte Barrios	Development
	Angélica Rocío Ruíz Rivera	Central Editing Coordinator
	Ana Beatríz Reyes Marroquín	Central Editor
	Esperanza Nineth Mérida Salguero	Central Editor
	Ester Castañeda	Central Editor
	Evelyn Patricia Mayén Valladares	Central Editor
	Helen Melissa Herrera Par	Central Editor
	Ingrid Rosario López González	Central Editor
	Lesly Lourdes Barán Bac	Central Editor
	Marta Elizabeth DelCid Cisneros	Central Editor
	Silvia Rosario Yoque Yumán	Central Editor
	Thelma Carolina Herrera Rosales	Central Editor
	Ana Lucía Barrientos Gordillo	Data entry clerk
	Anabella del Rosario Rivas Molina	Data entry clerk
	Billy Scot Cruz Sapón	Data entry clerk
	Brayan Emmanuel Hernández Rivera	Data entry clerk
	Brenda Elizabeth Rodríguez Gutiérrez	Data entry clerk
	Carmen Lisseth Alvarado	Data entry clerk
	Edy Alejandro Escún Alonzo	Data entry clerk
	Erick Oswaldo Monterroso Figueroa	Data entry clerk
	Frank Giancarlo Guzmán Girón	Data entry clerk
	Gabriela Andrea Rodríguez Mejicanos	Data entry clerk
	Gladis Susana Marroquín Cerna	Data entry clerk
	Glendy Marili Tunche Mayorga	Data entry clerk
	Henry Alexander Argueta Arce	Data entry clerk
	María Alejandra Calderón Gramajo	Data entry clerk
	María Fernanda Ovando Cifuentes	Data entry clerk
	Roberto André Sarti Delgado	Data entry clerk
	Samuel Abraham López Mazariegos	Data entry clerk
	Sandy Valeska García Hernández	Data entry clerk

	Stefanny Maoly Mejicanos Sosa	Data entry clerk
	Stephannie Alejandra Palma Rodríguez	Data entry clerk
	Vivian Stephanie Acevedo Solval	Data entry clerk
	Yashua Carmelo López Morales	Data entry clerk
FIELD PERSONNEL–COMMUNITY AND HEALTH FACILITY SURVEY		
	Rosa Enoé Armas Oliveros	General Field Supervisor
	Carlos Humberto Leal Pérez	Supervisor
	Carlos Humberto López Mijangos	Supervisor
	Jorge Ernesto Meyer Quiñonez	Supervisor
	José Mauricio Flores Hernández	Supervisor
	Moises Amando García Cano	Supervisor
	Cesar Armando Rivas Cuculista	Interviewer/Driver
	Melvin Amadeo Teleguario Cúmez	Interviewer/Driver
	Ana Leticia López Figueroa	Interviewer
	Daniel Estuardo Herrera Girón	Interviewer
	Freddy Orlando Batz Archila	Interviewer
	Jenrry Mauricio Sanjay López	Interviewer
	Jessica Janette Cabrera Porras	Interviewer
	Magda Guadalupe Morales Cardona	Interviewer
	Roberto Antonio Agustin López	Interviewer
	Rosa Marina Cunil Torres	Interviewer
	Siomara Leocadia Santiago Salazar	Interviewer
FIELD PERSONNEL–HOUSEHOLD SURVEY		
	Jonas Colón García	General Field Supervisor
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