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## Haiti Baseline Survey

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This baseline survey collects information on four strategic pillars: infrastructure, food and economic security, health and basic services, and governance and rule of law. Indicators of health are explored extensively, including pregnancies and postnatal care; contraception practices and fertility preferences; woman's nutrition, health issues, and anthropomorphic measures; and children's immunization, health, nutrition and anthropomorphic measures. Poverty indicators are derived from in-depth analyses of consumption and expenditures data. Agricultural inputs and productivity are investigated, as is women's empowerment in agriculture.

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# ABBREVIATIONS

5DE	Five domains of empowerment sub-index
AIDS	Acquired immune deficiency syndrome
ANC	Antenatal care
ARI	Acute respiratory infection
BCG	Bacille-Calmette-Guerin vaccine against tuberculosis
BMI	Body Mass Index
BRIDES	Bureau de Recherche en Informatique et en Développement Economique et Social
CASEC	Conseil d'Administration de la Section Communale
CDC	The Centers for Disease Control and Prevention
CPI	Consumer Price Index
CPR	Contraceptive prevalence rate
CSPro	Census and Survey Processing System
DGI	Direction Générale des Impôts
DHS	Demographic and Health Survey
DPC	Daily per capita
DPT	Diphtheria, pertussis, and tetanus vaccine
EGRA	Early grade reading assessment
FTF	Feed the Future
GOH	Government of Haiti
GPI	Gender parity sub-index
GPS	Global positioning system
HHS	Household Hunger Scale
HTG	Haitian gourdes
IFPRI	International Food Policy Research Institute
IHE	Institut Haïtien de l'Enfance
IHSI	l'Institut Haïtien de Statistique et d'Informatique
IUD	Intrauterine device
IYCF	Infant and young child feeding practices
JMP	Joint Monitoring Programme
LCU	Local currency units
MAD	Minimum acceptable diet
MSMEs	Micro, small and medium enterprises
NCHS	National Center for Health Statistics
OLS	Ordinary Least Squares
OPHI	Oxford Poverty and Human Development Initiative
PPS	Probability proportional to size
PWD	Persons with disabilities
PPP	Purchasing Power Parity

SBA	Skilled birth attendant
SD	Standard deviation
SDE	Sections d'Énumération
TFR	Total fertility rate
UNICEFF	United Nations Children's Fund
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development
USG	U.S. Government
VIP	Ventilated, improved pit
WEAI	Women's Empowerment in Agriculture Index
WHO	World Health Organization

# I. INTRODUCTION

In 2011, the United States Agency for International Development (USAID) developed the Post-Earthquake USG Haiti Strategy to guide the U.S. Government's (USG) engagement in Haiti's reconstruction and development. The strategy identifies priority pillars and geographic regions for engagement. The four pillars are infrastructure, food and economic security, health and basic services, and governance and rule of law. The strategy focuses efforts in three corridors: the St. Marc Corridor, Cul-de-Sac Corridor, and Northern Corridor. The corridors were selected in partnership with the Government of Haiti (GOH) to facilitate decentralization of government and de-concentration of population. These corridors were identified for USG investment based on their agricultural potential, number of beneficiaries that can be reached, distance to markets, availability of rural credit, alignment with other USG investments, USAID's prior experience in the area, whether the area has been identified as a priority by the GOH and related criteria.

In recent years, USAID has been building more rigorous evaluations into its program designs. Results will allow USAID and its stakeholders to understand the effectiveness of specific programs and build a knowledge base to inform future program decisions. The Haiti Mission contracted with ICF International to conduct a household-level Multi-Sectoral Baseline Survey. The Haiti Baseline Survey was conducted between October and December 2012 to develop robust baseline information to provide the foundation for other measurement activities that support program impact evaluations across the four pillars. The intention is for the survey to be implemented at baseline and annually utilizing a core set of indicators, which may be adjusted over time. This approach will enable USAID to track the general success of coordinated and leveraged programs in the three corridors. Because each USG program will have its own monitoring and evaluation effort, including focused impact evaluations, the USG will have a micro-level view of effectiveness as well as a broader view of program impact from the formal perspective.

In order to align the baseline study with USAID's strategy and performance monitoring plan, ICF first met with USAID to gather preliminary data. This meeting was followed by a document review to develop a deep knowledge about USAID's activities and goals in each of the pillars. The meetings and document review led to the development of a complex matrix of outcome and impact indicators corresponding to each intended result and linked to relevant survey questions. From this matrix, the baseline questionnaires were developed.

## 2. METHODOLOGY

### 2.1 STUDY DESIGN

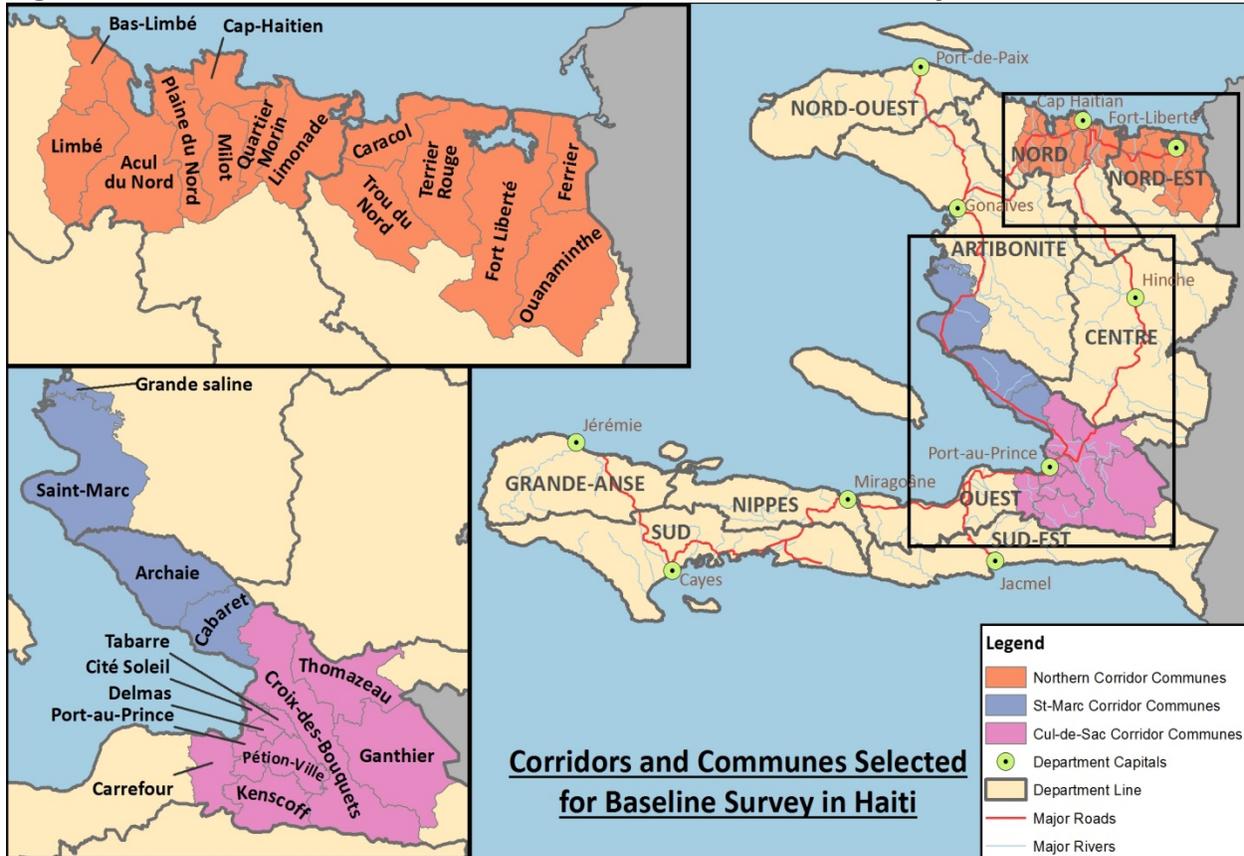
The Haiti Baseline Survey serves as the first phase of a five-year survey cycle, with additional data collections planned annually over a five-year period. The primary objective of the baseline study is to provide a baseline status of the selected program indicators, which can then be used to calculate change in these indicators over time. This study design allows for the measurement of change in indicators between the baseline and subsequent evaluations, but does not allow statements about attribution or causation to be made.

### 2.2 SAMPLING AND WEIGHTING

The sample for the Haiti Baseline Survey was designed to represent the three targeted geographic corridors. The Northern Corridor includes 14 communes with a 2012 population of 796,308; the Saint

Marc Corridor includes four communes with a 2012 population of 466,112; and the Cul de Sac Corridor (including Port-au-Prince) consists of 10 communes with a 2012 population of 2,947,525.<sup>1</sup> The target sample size of 3,600 households was determined based on available resources for the project and was equally allocated across the three corridors, yielding a target sample size of 1,200 households per corridor.

**Figure 1. Corridors and communes selected for Haiti Baseline Survey**



The sampling frame for the baseline survey was provided by the l’Institut Haïtien de Statistique et d’Informatique (IHSI) and was based on data collected during the 2002-2003 Census. The sampling frame included complete and accurate identifying information for all Sections d’Énumération (SDE) within the three corridors, along with household counts for each SDE.

The sample selection of 3,600 households was done in two stages: first, sampling of geographic clusters, and then sampling of households within the clusters. The first-stage sample of 144 clusters was selected from the three corridors, with 48 clusters allocated to each corridor. The number of clusters was determined based on dividing the target sample size of 3,600 households by the number of households to be interviewed per cluster, determined optimally to be 25. In each of the three sampling domains, enumeration areas were drawn using a systematic-random sampling procedure by commune/section/enumeration area with PPS (probability proportional to size) using the number of households in each enumeration area as the size measure. Table 2.2.1 provides the sampling statistics for all SDEs contained within the three sampling domains (corridors) by urban/rural status, along with the number of clusters sampled for each.

<sup>1</sup> Institut Haïtien de Statistique et d’Informatique (IHSI). (2012, January). *Population Totale, Population de 18 Ans et Plus Menages et Densites Estimes en 2012*.

**Table 2.2.1 Sampling domains and SDEs by urban/rural status**

Domain	Number of Households*	Number of SDE	Percent of SDE	SDE Selected
Northern	150,472	895	33.3%	48
Rural	64,382	427	13.2%	19
Urban	86,090	468	20.1%	29
Saint-Marc	100,030	646	33.3%	48
Rural	70,083	517	24.3%	35
Urban	29,947	129	9.0%	13
Cul De Sac	479,439	2,762	33.3%	48
Rural	97,605	833	5.6%	8
Urban	381,834	1,929	27.8%	40
TOTAL	729,941	4,303	100.0%	144
Rural	232,070	1,777	43.1%	62
Urban	497,871	2,526	56.9%	82

\*Source: IHSI 2002-2003 Census

The second-stage sample involved selection of 25 households within each sampled cluster. Households were selected using a systematic sampling method. The systematic sampling method entailed (1) randomly choosing a starting point and a random direction of travel within a sample cluster; (2) conducting an interview in the first household; and (3) choosing the *n*th household (*n* depends on the number of households per cluster) from the previous one for an interview, until 25 interviews were obtained. Using boundary maps for each sampled cluster, one starting point or multiple starting points were identified based on the geography of the cluster and the dispersion of households within the cluster.

A third stage of sampling was done at the individual level to select

- a. One woman in households where multiple women were eligible to be interviewed for the women's questionnaire. Eligible women were all women of reproductive age (15 to 49).
- b. One child in households where multiple children were eligible for the reading test. Eligible children included all children between six and 17 years of age.

In both cases, a Kish grid was used to randomly select the individual to be interviewed.

Sampling weights were derived based on multiplying the probability of selection at each of the three levels of sampling: (1) SDE selection, (2) household selection, and (3) individual selection (where relevant). The weight for each individual was assigned based on the inverse of this combined probability of selection.

All sample surveys have sampling errors, which can be evaluated statistically. Sampling errors for this survey were estimated using the Taylor linearization method. These sampling errors were then used to calculate 95 percent confidence intervals and significance tests for differences between corridors and between urban and rural settings. Confidence intervals and significance tests for key indicators are presented in Annex C.

## 2.3 QUESTIONNAIRES

The survey instruments (see Annex E) were developed using the indicator framework ICF developed through consultation with USAID. Some original questions were developed, and the instruments also draw on previously developed instruments including the Demographic and Health Surveys (DHS),<sup>2</sup> America's Barometer,<sup>3</sup> the Living Standards Measurement Survey,<sup>4</sup> the Household Hunger Scale (HHS),<sup>5</sup> the Agricultural Census of Haiti, the Early Grade Reading Assessment,<sup>6</sup> and the Women's Empowerment in Agriculture Index (WEAI).<sup>7</sup>

A household questionnaire gathered information on age, educational level, health, disability and activity status of household members; household and hunger characteristics; household enterprises and expenditures; and governance and delivery of services. A reading test was conducted with one child in each household. Within each household, one woman was interviewed using a women's questionnaire. This questionnaire collected information on pregnancies and postnatal care; contraception practices and fertility preferences; women's nutrition, health issues and anthropomorphic measures; and children's immunization, health, nutrition and anthropomorphic measures.

A third instrument was used in households in the 62 rural clusters to gather data on agricultural production and women's empowerment in agriculture. The agricultural production module gathered information on the household's agricultural productivity and inputs. The data were collected for a full year of agricultural activity, divided into three planting/harvesting seasons for seasonal crops and one season for annual tree crops. The agricultural production data were collected for households that cultivated land for specific crops that they either sold or intended to sell during the agricultural year. If a rural household did not cultivate any one of the specific crops to sell or with the intention to sell, then the agricultural production module was not completed in that household.

The women's empowerment module was taken from the Feed the Future (FTF) WEAI survey module and gathered information on the role of primary male and female decision makers in the household. It was conducted in all rural households, regardless of whether agricultural activity occurred, except those with no adult members or those without an adult female decision maker.

## 2.4 FIELD PROCEDURES

Given the length and breadth of the instruments, it was necessary to divide the work between two local firms. One firm, Bureau de Recherche en Informatique et en Développement Economique et Social (BRIDES), conducted the household and women's questionnaires in all households, while the second firm, Institut Haïtien de l'Enfance (IHE), conducted the agriculture and WEAI questionnaire in rural households. These rural households were the same households interviewed by the first firm.

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<sup>2</sup> MEASURE DHS. (2005). *Enquête Mortalité, Morbidité et Utilisation des Services (EMMUS-IV)*. Available at <http://www.measuredhs.com/pubs/pdf/FR192/FR192.pdf>

<sup>3</sup> Vanderbilt University. (2010). *2010 America's Barometer (Haiti)*. Available at <http://www.vanderbilt.edu/lapop/haiti.php>

<sup>4</sup> IHSI. (2012). *Enquête sur les conditions de vie des ménages après le séisme (ECVMAS)*. Not yet published.

<sup>5</sup> Ballard, T., Coates, J., Swindale, A., & Deitchler, M. (2011). *Household Hunger Scale: Indicator Definition and Measurement Guide*. Washington, DC: FANTA-2 Bridge, FHI 360. Available at [http://www.fantaproject.org/downloads/pdfs/HHS\\_Indicator\\_Guide\\_Aug2011.pdf](http://www.fantaproject.org/downloads/pdfs/HHS_Indicator_Guide_Aug2011.pdf)

<sup>6</sup> Research Triangle Institute. (2009). *Haiti EGRA Instruments*. Available at <https://www.eddataglobal.org/countries/index.cfm?fuseaction=pubDetail&ID=252>

<sup>7</sup> Feed the Future. (2012, October). *M&E Guidance Series, Volume 8: Population-Based Survey Instrument for Feed the Future Zone of Influence Indicators with Revised WEAI Module*. Available at [http://www.feedthefuture.gov/sites/default/files/resource/files/ftf\\_vol8\\_populationbasedsurveyinstrument\\_oct2012.pdf](http://www.feedthefuture.gov/sites/default/files/resource/files/ftf_vol8_populationbasedsurveyinstrument_oct2012.pdf)

### **2.4.1 TRAINING AND PILOTING**

After approximately one month of questionnaire design and testing, an initial survey instrument was produced for cognitive testing. Local residents of Port-au-Prince were recruited to participate in cognitive testing of challenging portions of the household questionnaire. Initial feedback was incorporated into the questionnaire, and a new draft was produced. At a later date, extensive cognitive testing of the WEAI was undertaken in the rural outskirts of Port-au-Prince.

An initial training session for the household and women's questionnaire was attended by 55 interviewers, 11 field supervisors, and two team leaders. The training consisted of three days of questionnaire explanation and practice, three days of anthropometry training (conducted at local schools), and two days of supervisor training.

After the training session, a pilot test was conducted in Petion-Ville. Feedback from interviewers was incorporated into the questionnaire. A second training covered changes to the household questionnaire since the first version, the women's questionnaire, and anthropometry.

A separate training was held for the agriculture questionnaire. Supervisors were first trained to conduct the questionnaire and then completed a pilot test in Croix-des-Bouquets. The questionnaire was revised slightly to address problems identified during the pilot. Interviewers were then trained during a five-day training that included practice in the field. Interviewers with familiarity with agricultural issues were prioritized in recruitment. The training for these interviewers was similar to the training for the household and women's questionnaires. The facilitator read each question to the group and explained the intention behind the question. The interviewers then practiced the module as a group and in pairs. After piloting, it became clear that farmers struggled with the questions asking them to quantify their harvests and earnings. A follow-up training was provided to train interviewers to review the responses to these questions to make sure they were logical. In cases where the responses did not make sense (for example, five sacks were harvested and 10 sacks were sold), interviewers were instructed to ask for clarification and revise the responses.

The trainings for all interviewers had similar elements, and training manuals were developed for interviewers. Training began with a detailed explanation of the objectives of the survey, sampling design, and method of selecting households and respondents within households. Trainers emphasized proper interviewer deportment and respondent confidentiality. A focus of the training was a detailed explanation of the questionnaire, question by question, including routing and filtering, and a comprehensive discussion of directive and nondirective probing. Classroom discussion of the questionnaire was followed by practice interviews between interviewers and a discussion of any problems or respondent queries that arose.

All interviewers and supervisors participated in piloting of the questionnaires. The purpose of the pilots was to give interviewers practice in conducting the questionnaire as well as to identify potential problem areas, such as whether the questions were easily understood, whether the sequence of questions presented to respondents was logical, whether questionnaires were clear in terms of both coding and instructions to enumerators, and whether any of the questions were particularly difficult or sensitive.

### **2.4.2 FIELDWORK**

Fieldwork lasted approximately two months and was completed in mid-December of 2012. During early fieldwork, ICF accompanied the field team to different sampling points and assisted the team in identifying and correcting mistakes. For the household and women's questionnaires, each field team consisted of five people: one supervisor (male or female), three interviewers (male or female), and one anthropometrist (female). Each team was assigned three to four sampling points within each corridor.

For the agriculture questionnaire, each team was composed of one supervisor (male or female) and three enumerators (male or female).

Data collectors kept fieldwork control sheets to record contact with households and global positioning system (GPS) data. These sheets were used to evaluate response rates, reasons for nonresponse, and substitutions of households. In cases where household members were not at home, interviewers were required to revisit a household three times before the household could be replaced. In the event of an incomplete interview, a new household was selected in the enumeration area to be interviewed. This procedure of selecting new households was required because the initial sample size did not include allowance for nonresponse. An incomplete interview was an interview that was refused completely or partially, or that was terminated before being completed. Substitution of household respondent was deemed acceptable if necessary to complete the interview.

Supervisors were required to conduct spot checks of at least 10 percent of all interviews and back-checks to verify information collected in at least 10 percent of interviews. At a minimum, back-checks were required to verify the fact that the interview took place, the approximate duration of the interview, the proper administration of the various sections of the questionnaire, the total number of household members and the interviewer's general adherence to professional standards. In addition, every completed questionnaire was required to be inspected by the field supervisors on same day of data collection to check for adequate completion of all fields, presence of missing data and legibility of open-ended items. Interviewers were required to make corrections before proceeding to the next household in the event of errors or omissions.

For rural clusters, there was a protocol to ensure that the same households were visited by both teams. The agriculture questionnaire was conducted first in these households. Supervisors recorded the name of the head of household, the phone number if available, and the GPS coordinates of the selected household. This information, as well as the contact details for a local guide hired by the team, was given to the field team who conducted the household and women's questionnaire. In more than 90 percent of cases, households were successfully matched and data were collected using both instruments. In some cases, respondents could not be found, or they refused to participate in the household and women's questionnaire interviews.

### **2.4.3 DATA PROCESSING**

Questionnaires were periodically returned to Port-au-Prince for data processing, which began shortly after the start of fieldwork. When questionnaires were returned to the office, several protocols were followed, starting with a cursory review during which every questionnaire was checked for logical patterns, missing information, and proper household and respondent selection; if necessary, some were sent back to the field to be corrected or were discarded from the final sample if they did not pass quality control measures. Data processing consisted of office editing, coding of open-ended questions, data entry, and editing of inconsistencies found by the computer program. Data processing was carried out using the Census and Survey Processing System (CSPRO), a joint software product of the U.S. Census Bureau, ICF International, and Serpro S.A. Data enterers were required to perform double data entry in at least 10 percent of work and to resolve all inconsistencies found between both entries.

Intermediary datasets were delivered to ICF for review during data collection, and feedback was incorporated. Further quality control measures were conducted on the final datasets in order to check for match to sample plan; duplicate records; data completeness (e.g., variables, labels, missing data); data validity (e.g., frequency distribution anomalies, out-of-range values); and data consistency (e.g., correspondence between number of interviews at each level, skip patterns).

## 2.5 METHODS FOR DATA ANALYSIS

This report used a descriptive analytic approach. Results were tabulated with the analytic variables presented as rows and the comparison groups, including the three corridors and setting (urban/rural), as columns. Most data were presented as column percentages, means or medians, carried out to one decimal point. Representativeness was maintained by weighting any statistics that apply to the survey population (such as percentages, means and medians) by the inverse of the probability of selection of any given survey respondent:

- **Column percentages:** For values provided in nominal scales (e.g., yes/no responses), column percentages were computed using the weighted number of cases that provided a given response as the numerator, and the total weighted number of cases for that column as the denominator. Single response variables added up to 100 percent, while multiple response variables may not have added up to 100 percent. Percentages quoted in the body of the report were rounded to the nearest whole percentage point (e.g., 88.6 percent was presented in the body of the report as 89 percent).
- **Means:** For variables collected in a continuous scale format (e.g., number of household members), means were computed using the weighted sum of values as the numerator and the total weighted number of cases for that column as the denominator.
- **Medians:** For variables collected in a continuous scale format (e.g., age), medians were computed using the cumulative weighted sum of values, sorted in ascending order. The value that leaves behind 50 percent of the weighted cases was considered the median.

The final row in the table presents the unweighted sample size for the results presented in each column. To avoid showing unreliable statistics, results are shown only when the unweighted sample size for a column is equal to or greater than 30 cases.

### 2.5.1 COMPUTED VARIABLES AND INDICATORS

The report authors created all computed variables, including simple variable recodes (age, corridor, etc.) and composite indicators. International standards were used whenever available to compute analytic variables and indicators.

- Housing characteristics and Health indicators were computed using DHS standards and definitions, as described in the following publications:
  - 2012 DHS Guide to Statistics
  - 2012 Tabulation Plan for DHS Final Report
- Nutrition and Food Security indicators were computed using international standards as described in the following publications:
  - 2012 FTF Indicator Handbook
  - 2011 Household Hunger Scale: Indicator Definition and Measurement Guide
  - 2010 World Health Organization (WHO) Indicators for Assessing Infant and Young Child Feeding Practices (Part 2 Measurement)
- Anthropometry indicators were calculated using the child growth standards and data processing programs published by the WHO in 2006.
- Household Consumption Aggregates were computed following LSMS – World Bank guidance, including the following publications:

- Deaton & Zaidi (2002)<sup>8</sup>
- Grosh & Muñoz (1996)<sup>9</sup>
- WEAI was calculated with guidance and materials provided via the USAID FTF webinar conducted on November 9, 2012, and personal communications with Hazel Malapit, WEAI Research Coordinator at IFPRI.

All indicators are presented in their corresponding section in the body of the report. FTF-specific indicators are also summarized, with their appropriate breakdowns, base populations and confidence intervals, in Annex B.

## 2.5.2 HANDLING OF MISSING VALUES

There are different options for how to treat “don’t know” responses and missing values for calculating indicator values. One approach is to recode all “don’t know” responses as missing data and to not include the missing values in the numerator or denominator for any indicator. This is the approach used by many small-scale surveys. A second approach, used in the DHS, is to recode “don’t know” and missing data to the null value — to take the value of “no” (if a yes/no question) or “0” (if a numeric response is required) — and to include the recoded data in the numerator and denominator of indicators.

The latter was the approach generally used in this report, unless a specific indicator was defined otherwise (e.g., children who were not weighed and measured and children whose values for weight and height were not recorded were excluded from both the denominator and the numerator for anthropometry indicators). For tables showing individual cell percentages of respondents, rows of missing values were not shown.

Means and medians were based on respondents with numerical answers to the questions on which the means were based. Missing, “don’t know,” and other non-numerical responses were excluded from the calculation.

## 2.5.3 DATA IMPUTATION

Missing or “don’t know” values were generally treated as described above and allowed to stay in the data. The exceptions were variables whose associated indicators require complete data, including household consumption variables and dates for critical events.

- Household consumption data:
  - Households that had consumed a given item but were missing information on the amount spent on that item received an imputed value equal to the nearest local median price of that item, as recommended by Deaton and Zaidi (2002).
  - Home rental equivalents were imputed to non-renting households based on a model estimating the rental value of a home using the characteristics of the dwelling as dependent variables, as suggested by Grosh and Muñoz (1996).
- Critical events:
  - Date of birth of women 15-49

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<sup>8</sup> Deaton, A., & Zaidi, S. (2002). *Guidelines for Constructing Consumption Aggregates for Welfare Analysis*. Working Paper 135. Washington DC: The World Bank. Available at <http://siteresources.worldbank.org/INTPA/Resources/429966-1092778639630/deatonZaidi.pdf>

<sup>9</sup> Grosh, M., & Muñoz, J. (1996). *A Manual for Planning and Implementing the Living Standards Measurement Study Surveys*. LSMS Working Paper 126. Washington DC: The World Bank. Available at [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2000/02/24/000009265\\_3961219093409/Rendered/PDF/multi\\_page.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2000/02/24/000009265_3961219093409/Rendered/PDF/multi_page.pdf)

- Date of birth of each birth of women 15-49
- Date of death of deceased children

In this stage, partial or incomplete dates were imputed from the known related information. Dates that were partial included dates for which no month or no year was reported, either because the questionnaire was blank (missing data), the information given was not consistent with other information (inconsistent data), or because the respondent did not know the exact date (unknown data). The procedure followed to impute these dates followed international DHS standards, as described in DHS Data Editing and Imputation guidelines.

All data analysis was done using either IBM SPSS Statistics 19 or SAS (Version 9.3). STATA (SE version 12.1) was used to compute the WEAI. Programming routines were documented carefully to ensure full replicability of all computations and results.

## **3. RESULTS**

### **3.1 HOUSEHOLD POPULATION, SHELTER AND INFRASTRUCTURE**

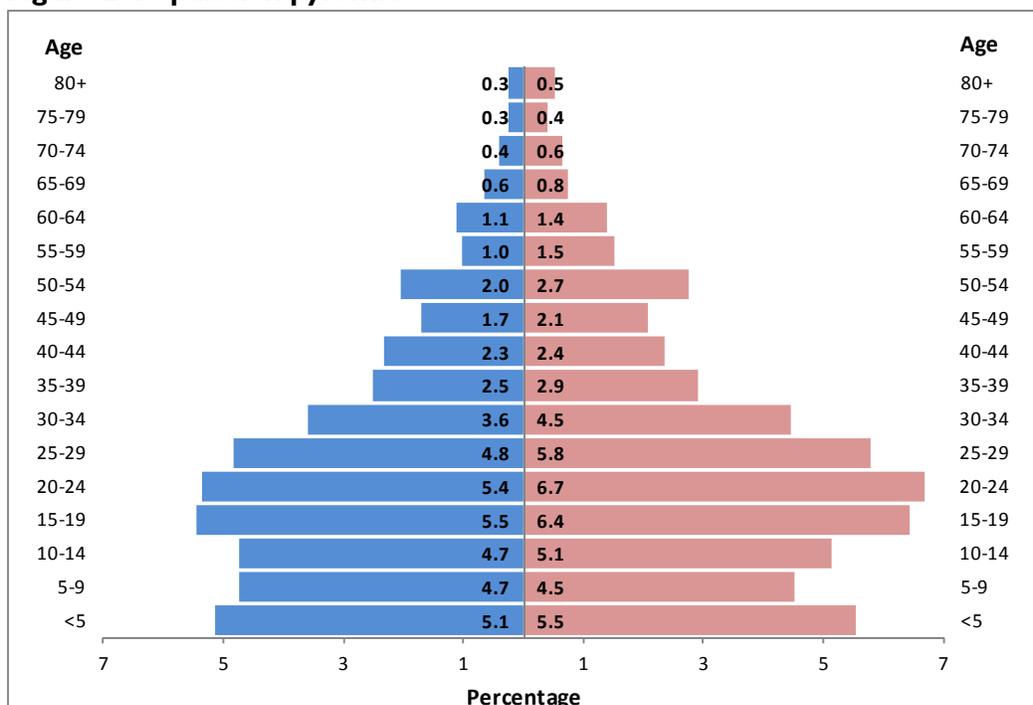
The focus of this chapter is to describe the environment in which the survey population lives. This description shows the distribution of the household population, housing facilities (sources of water supply, sanitation facilities, dwelling characteristics), household arrangements (headship, size), and general characteristics of the population such as age-sex structure. A distinction is made between urban and rural settings, where many of these indicators usually differ, and across corridors.

#### **3.1.1 HOUSEHOLD POPULATION BY AGE AND SEX**

For this survey, a household was defined according to standard DHS methodology as a person or group of persons, related or unrelated, who live together in the same dwelling unit, who acknowledge one adult male or female as the head of household, who share the same living arrangements, and are considered as one unit. Information was collected from all usual residents of a selected household (de jure population) as well as persons who had stayed in the selected household the night before the interview (de facto population). “Usual residence” was defined using the DHS/US Census criterion: persons were counted in the place where they live and sleep most of the time.

The population pyramid (Figure 2) shows the percent distribution of the de facto household population (usual residents and visitors who spent the night preceding the survey in the household), by five-year age groups. This percent distribution by age and sex is based on the overall total (both sexes combined), so that the sum of all percentages in the pyramid equals 100.

**Figure 2. Population pyramid**



A large proportion of the survey population (30 percent) is under age 15. Eleven percent of the population is under five years of age. Persons age 65 and over account for about four percent of the total population. Males represent 46 percent of the population, which translates to an overall sex ratio (number of males per 100 females) of 86. The majority of the imbalance is concentrated in the 15 to 34 age range, where the average sex ratio is 82. This imbalance is possibly the result of labor emigration abroad of males in their prime working age.

Another unusual feature of the population pyramid is the relative bulge for the zero to four-year-old cohort. This bulge is consistent with journalistic reports and small-scale surveys from the United Nations Population Fund (UNFPA)<sup>10</sup> indicating a spike in pregnancies in the aftermath of the 2010 earthquake and a subsequent baby boom.

It is also worth noting that the population pyramid shows a slight bulge for the 50 to 54-year-old cohort. While the bulge for the male population could be due to a diminishing effect of migration for older men, the bulge for females is suggestive of age displacement by interviewers. Age displacement occurs when interviewers deliberately add years to women who are in their forties in order to place them outside the age range of eligibility for the women's questionnaire. This way they reduce their workload. This is an undesirable outcome that will require dedicated monitoring in future surveys.

For this survey, one woman of reproductive age (15-49 years) was randomly selected from each household to answer questions related to fertility, reproductive health, child health and nutrition. Out of the final effective sample of 3,578 households, 2,930 (82 percent) had at least one eligible woman. A total of 2,816 interviews with women were obtained, representing a response rate of 96 percent. The distribution of the final sample of 2,816 women by age group and residence is shown in Table 3.1.1.

<sup>10</sup> See <http://www.unfpa.org/public/site/global/lang/en/pid/7106>

Most females are in the younger age groups, with about two-thirds (63 percent) under age 30. In general, the proportion of women in each group declines as age increases, reflecting the comparatively young age structure of the population in the survey.

Age	Corridor			Setting		Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	
15-19	22.6	22.1	20.1	25.7	19.3	20.8
20-24	22.7	23.0	22.9	22.3	23.0	22.9
25-29	18.8	17.5	20.3	18.2	19.9	19.5
30-34	11.0	13.1	15.2	10.9	15.3	14.3
35-39	11.4	9.7	8.9	8.5	9.6	9.4
40-44	7.2	8.7	6.6	7.1	7.1	7.1
45-49	6.3	5.9	6.1	7.2	5.7	6.1
Total 15-49	100.0	100.0	100.0	100.0	100.0	100.0
Number of Women	902	954	960	1,121	1,695	2,816

### 3.1.2 HOUSEHOLD COMPOSITION

The household composition usually affects the allocation of resources available to household members. A slight majority of households in the survey areas are headed by women (53 percent). This is particularly the case in urban areas (57 percent). By contrast, male-headed households are more frequent in rural areas (57 percent).

In addition to the gender of the head of household, it is also important to analyze the gender composition of all adult household members to avoid presuming certain characteristics associated with household headship that may or may not be present in household gender dynamics. A majority of households in the survey areas have both adult male and female members (83 percent), with adult female-only households being the next main category (14 percent of households).

The size of the household may affect the well-being of its members. Where the size of the household is large, crowding can lead to health problems. The mean size of households in the survey areas is 4.8 members, which is similar to most developing countries (see, for example, Ayad, Barrère & Otto, 1997).<sup>11</sup> There are few differences among corridors and between urban and rural settings, although households in the Northern Corridor are slightly larger than households in the other two corridors, with an average of 5.1 members.

To assess the relationship between household size and crowding, the space available to household members must be considered. The mean number of persons per sleeping room in the survey areas is 2.8 persons. Although there are no internationally accepted guidelines as to the maximum number of persons per bedroom, overcrowding seems greatest in urban areas (2.8 persons per bedroom) and in the Cul-de-Sac Corridor (2.9 persons per bedroom).

<sup>11</sup> Dd Ayad, M., Barrère, B., & Otto, J. (1997). *Demographic and Socioeconomic Characteristics of Households*. Calverton: Macro International. Available at <http://www.measuredhs.com/pubs/pdf/CS26/CS26.pdf>

**Table 3.1.2 Household composition**

Percent distribution of households by sex of head of household and by household size; mean size of household [Haiti, 2012]

Characteristic	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
<b>Household headship</b>						
Male	54.4	50.3	44.3	56.5	42.9	47.0
Female	45.6	49.7	55.7	43.5	57.1	53.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Gendered household type</b>						
Adult Female no Adult Male	13.3	13.1	13.9	11.6	14.4	13.6
Adult Male no Adult Female	4.9	3.0	3.7	4.6	3.3	3.7
Male and Female Adults	81.5	83.9	82.2	83.1	82.3	82.5
Child No Adults	0.3	0.0	0.3	0.7	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Number of usual members</b>						
1	5.6	3.3	3.0	5.9	2.4	3.9
2	10.6	8.4	9.9	11.9	7.9	9.6
3	19.5	13.9	18.3	16.5	17.8	17.3
4	19.0	16.9	22.5	16.6	21.7	19.5
5	16.8	16.4	17.2	15.3	18.0	16.8
6	10.3	15.8	12.1	12.1	13.2	12.7
7	6.9	10.8	6.3	7.7	8.3	8.0
8	5.8	6.0	5.1	6.6	4.8	5.6
9+	5.5	8.4	5.6	7.4	5.9	6.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Mean size of households	4.5	5.1	4.7	4.7	4.8	4.8
Mean number of persons per sleeping room	2.7	2.5	2.9	2.7	2.8	2.8
Number of households	1,198	1,199	1,179	1,551	2,025	3,576

Note: Table is based on de jure household members, i.e., usual residents

### 3.1.3 EMPLOYMENT OF HOUSEHOLD POPULATION

The System of National Accounts (paragraphs 6.18 to 6.22)<sup>12</sup> defines the employed population as all persons above a specified age who furnish the supply of labor for the production of goods and services. When measured for a reference period, it refers to all persons who worked for pay, profit or family gain during that period or were temporarily absent from an activity of this type.

The currently employed population is the basis of employment and unemployment measures in censuses and household surveys. The reference period for current activity typically ranges from a time frame as short as one day to as long as one month, with the most common being one week. The reference period for usual activity status typically refers to the last 12 months.<sup>13</sup>

The Haiti Baseline Survey asked the household informant about the employment status of every household member of working age (15 and older). The survey used a general question about work in the last seven days combined with a battery from the Haiti 2012 ECVMAS. This battery contained 13 items covering a wide range of economic activities to probe whether the household member had

<sup>12</sup> Available at <http://unstats.un.org/unsd/nationalaccount/docs/SNA2008.pdf>

<sup>13</sup> See United Nations. (2010). *Measuring the Economically Active in Population Censuses: A Handbook*. Available at [http://unstats.un.org/unsd/publication/seriesf/Seriesf\\_102e.pdf](http://unstats.un.org/unsd/publication/seriesf/Seriesf_102e.pdf)

performed any economic activity in the last seven days. If the general employment question or any specific activity was mentioned, the person was considered to be currently employed. The survey also asked about work for at least a month in the last 12 months to identify the usually employed population. It further asked if a person would be working the next month, to identify the temporarily absent and those who would start working in the following month.

Only 25 percent of the working-age household members (15 years or older) performed an activity for economic gain in the last seven days, and can thus be considered as currently employed. Current employment rates are slightly higher in rural areas (30 percent) and in the St. Marc Corridor (36 percent) than in the other areas surveyed. A total of 45 percent of households do not have any currently employed member.

The prevalence of the usually employed population (those who worked in the last 12 months) is similar to the currently employed, with a total of 26 percent.<sup>14</sup> Additionally, 12 percent of respondents said they would work next month. The operational definition of the employed population in this survey includes the usually active population, the currently active population and those that would work next month. The combination of these three criteria indicates that a total of 26.4 percent of the total working-age population is employed.

The main sector of activity for the employed population is retail, which employs 30 percent of the currently active workforce. Retail is particularly important in urban areas (34 percent) and in the Cul-de-Sac Corridor (32 percent). Agriculture was the next most important sector, with 19 percent of the currently active population producing crops, and smaller proportions engaged in other activities such as animal husbandry or fishing. Growing crops is the main activity in rural areas (51 percent) and is particularly important in the St. Marc Corridor (45 percent) and the Northern Corridor (32 percent).

Analyzing the characteristics of work can help in determining the quality of the jobs held by the employed population. The majority of the employed population is self-employed (53 percent), particularly in rural areas (62 percent) and in the St. Marc Corridor (68 percent). Only a minority (29 percent) works for a registered enterprise, with somewhat greater rates in urban areas (31 percent) and in the Cul-de-Sac Corridor (36 percent). Working for a registered enterprise is an indicator of formal employment, particularly in urban areas, as agriculture is generally excluded from the definition of informal work.<sup>15</sup> Working under a written contract is also an indicator of formality. Only 22 percent of the employed population had a written contract, again with greater rates in urban areas (27 percent) and in the Cul-de-Sac Corridor (25 percent).

The employed population worked an average of nine hours per day, six days per week, and 12 months per year, with median weekly earnings of 1,000 in Haitian gourdes (HTG). There were few regional variations, with those in urban areas working fewer months (11 months) and having higher weekly earnings than those in rural areas (1,000 HTG vs. 750 HTG).

Table 3.1.3 shows a breakdown of these employment characteristics for the sectors of focus where a sufficient sample size was available.

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<sup>14</sup> One possible reason for the similarity between the usual and currently employed populations is that this survey included full probing for only the last seven days. A measure of the importance of full probing is given by the difference in the current employment rates based on a straightforward questionnaire item without probes, which identifies 18 percent of the population, and the full probing approach, which identifies a further seven percent (see table 3.3a). It is possible that including full probing for the other two reference periods in the operational definition of employment (last 12 months and next month) may have identified additional employed individuals.

<sup>15</sup> See International Labour Office guidelines (2003) for a definition of informal employment. Available at <http://ilo.org/public/english/bureau/stat/download/papers/def.pdf>

Table 3.1.3 Employment Status: Household members age 15 or older

Percent distribution of household members age 15 or older by employment status [Haiti, 2012]

	Corridor			Setting		Sex		Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	Male	Female	
<b>Employed Population <sup>1</sup></b>								
Worked in the last 7 days (total)	35.6	22.4	24.3	30.4	23.4	30.5	21.2	25.3
Worked in the last 7 days (without probes)	27.9	16.5	16.1	21.3	16.3	24.0	12.5	17.7
Worked in the last 7 days (with probes) <sup>2</sup>	24.7	14.5	15.8	21.3	14.9	17.6	15.9	16.6
Worked in the last 12 months	36.0	23.0	25.2	31.0	24.2	31.6	21.6	26.1
Will work next month	19.7	9.7	11.6	14.6	11.3	15.8	9.3	12.2
Total employed	36.1	23.0	25.7	31.2	24.6	31.8	22.1	26.4
Number of individuals	3,631	4,074	3,961	4,727	6,939	5,348	6,308	11,666
<b>Sector of Employment <sup>3</sup></b>								
Growing crops	44.9	32.2	8.8	51.2	4.2	25.4	11.8	19.3
Animal husbandry	1.1	0.5	0.4	0.8	0.4	0.8	0.2	0.5
Fishing	0.6	0.7	0.3	0.7	0.3	0.6	0.3	0.4
Food processing/manufacturing	0.4	1.0	0.5	0.8	0.5	0.4	0.9	0.6
Manufacturing of garments/textiles	0.5	2.1	2.4	0.9	2.5	1.5	2.7	2.0
Other manufacturing	0.8	2.1	1.8	1.3	1.8	2.7	1.0	1.7
Human health and social work activities	1.7	1.4	2.6	0.7	2.9	2.1	2.3	2.2
Accommodation and food service activities	1.1	0.5	1.4	0.3	1.6	1.9	1.0	1.2
Construction	5.0	3.6	7.2	3.3	7.5	10.0	0.7	6.1
Administrative and support service	2.0	5.0	9.4	1.3	10.2	8.4	6.0	7.3
Education	5.5	6.2	7.6	3.8	8.5	7.8	6.0	7.0
Retail trade (including ambulant sales)	24.2	28.0	31.6	21.5	33.5	12.2	50.5	29.6
Domestic service	0.9	1.6	3.0	1.0	3.1	0.5	4.6	2.4
Vehicle repairs	0.3	0.7	1.9	0.8	1.7	0.5	0.4	1.4
Security	0.5	0.4	0.9	0.8	0.7	0.6	0.3	0.7
Personal Services	0.2	0.4	0.9	0.1	0.9	0.6	0.5	0.7
Transport	3.1	3.2	3.5	3.5	3.3	4.4	0.5	3.4
Other	3.0	6.1	9.1	3.6	9.4	13.7	4.1	7.5
DK/NR/Missing	4.5	4.2	6.9	3.4	7.2	5.8	6.2	6.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Characteristics of Employment <sup>3</sup></b>								
Percent working for a registered enterprise <sup>4</sup>	15.1	16.8	35.6	22.8	31.3	33.1	23.3	28.6
Percent working under a written contract	15.9	16.6	25.1	11.4	27.0	26.8	15.9	21.7
Percent working for a family member	6.7	10.7	6.4	10.7	5.6	7.7	6.8	7.3
Percent working for someone else	25.8	31.7	45.9	27.2	45.7	45.9	32.1	39.5
Percent self-employed	67.6	57.6	47.7	62.1	48.7	46.4	61.2	53.2
Percent working on other job	18.5	16.9	11.5	16.3	12.5	17.2	10.0	13.8
Average number of hours worked per day	8.2	8.0	8.8	8.0	8.8	8.6	8.4	8.5
Average number of days worked per week	5.7	5.5	5.5	5.6	5.5	5.6	5.5	5.5
Average number of months worked per year	10.1	9.1	8.9	9.7	8.9	9.1	9.2	9.2
Median number of coworkers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Median weekly earnings (in HTG)	1,000	600	1,000	750	1,000	1,000	1,000	1,000
Number of individuals	1,311	939	1,017	1,590	1,677	1,849	1,415	3,267

<sup>1</sup> Includes de jure (usual) household members 15 and older.

<sup>2</sup> Probes consisted of a 13-item battery from the 2012 ECVMAS covering a wide range of economic activities to probe if the household member had performed any economic activity in the last seven days. Measures with probes and without probes overlap, and do not add up to the total who worked in the last 7 days.

<sup>3</sup> Includes de jure (usual) household members 15 and older that were employed.

<sup>4</sup> Registered enterprises were defined for this survey as enterprises with either a 'Patente' from the Direction Générale des Impôts (DGI), an 'Immatriculation fiscale' (MEF/DGI) or a Professional identity card of the Ministère du Commerce et de l'Industrie (MCI). Information on registration status was collected as reported by household respondents.

Table 3.1.4 Characteristics of Employment by Sector

Characteristics of employment for three focus sectors [Haiti, 2012]

	Corridor			Setting		Sex		Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	Male	Female	
<b>Agriculture <sup>1</sup></b>								
Percent working for a registered enterprise	4.9	3.0	50.6	17.6	17.2	14.0	29.5	17.6
Percent working under a written contract	4.8	0.7	1.1	2.1	4.8	3.0	1.5	2.5
Percent working for a family member	5.8	14.5	10.3	9.9	9.2	10.7	8.1	9.8
Percent working for someone else	13.4	17.2	43.7	23.7	21.0	22.3	27.6	23.3
Percent self-employed	80.8	68.2	46.0	66.5	69.8	67.0	64.3	66.9
Percent working on other job	15.9	18.9	5.8	14.4	11.2	16.7	7.3	13.9
Average number of hours worked per day	7.7	7.9	7.8	7.8	7.8	8.1	7.0	7.8
Average number of days worked per week	5.9	5.7	5.8	5.8	5.7	5.9	5.6	5.8
Average number of months worked per year	10.3	9.2	9.8	9.8	9.8	9.9	9.7	9.8
Median number of coworkers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Median weekly earnings (in HTG)	1,000	400	1,000	600	780	600	800	600
Number of individuals working in agriculture	589	302	89	847	133	725	251	980
<b>Textile <sup>2</sup></b>								
Percent working for a registered enterprise	-	-	-	-	33.5	-	37.2	33.5
Percent working under a written contract	-	-	-	-	17.5	-	21.8	17.8
Percent working for a family member	-	-	-	-	4.9	-	5.1	4.2
Percent working for someone else	-	-	-	-	41.0	-	49.1	37.7
Percent self-employed	-	-	-	-	54.1	-	45.8	58.1
Percent working on other job	-	-	-	-	13.9	-	13.2	18.1
Average number of hours worked per day	-	-	-	-	9.4	-	9.6	8.8
Average number of days worked per week	-	-	-	-	5.4	-	5.4	5.1
Average number of months worked per year	-	-	-	-	8.4	-	8.6	8.4
Median number of coworkers	-	-	-	-	1.0	-	1.0	0.0
Median weekly earnings (in HTG)	-	-	-	-	1,000	-	1,000	1,000
Number of individuals working in textile	6	20	24	13	37	18	30	50
<b>Construction <sup>3</sup></b>								
Percent working for a registered enterprise	21.2	26.5	23.3	41.4	19.5	26.6	-	23.3
Percent working under a written contract	20.3	35.3	14.3	26.2	15.7	19.5	-	17.5
Percent working for a family member	7.8	9.1	4.2	21.6	1.8	5.0	-	5.3
Percent working for someone else	59.4	57.6	49.3	52.5	51.4	57.0	-	51.6
Percent self-employed	32.8	33.3	46.5	26.0	46.7	38.0	-	43.1
Percent working on other job	23.1	15.2	20.8	19.7	20.7	16.3	-	20.5
Average number of hours worked per day	9.3	8.1	8.5	7.9	8.7	8.7	-	8.6
Average number of days worked per week	5.5	5.5	5.0	5.5	5.1	5.2	-	5.1
Average number of months worked per year	7.6	7.7	7.1	8.1	7.0	7.5	-	7.2
Median number of coworkers	2.5	0.0	0.5	0.0	1	1.0	-	1
Median weekly earnings (in HTG)	2,250	1,550	2,000	1,000	2,000	2,000	-	2,000
Number of individuals working in construction	66	34	73	51	122	147	13	173

<sup>1</sup> Includes employed individuals that described their industry of employment as growing crops.

<sup>2</sup> Includes employed individuals that described their industry of employment as manufacturing of garments/textile.

<sup>3</sup> Includes employed individuals that described their industry of employment as construction.

### **3.1.4 SHELTER AND INFRASTRUCTURE**

#### **3.1.4.1 WATER AND SANITATION**

The source of drinking water is an indicator of whether it is suitable for drinking. Sources that are considered likely to be of suitable quality are listed under “Improved source,” and sources that may not be of suitable quality are listed under “Non-improved source.” The categorization into improved and non-improved is proposed by the WHO/United Nations Children’s Fund (UNICEF) Joint Monitoring Programme (JMP) for Water Supply and Sanitation. For households using bottled water for drinking, the JMP classifies the household according to the source of water the members use for cooking and personal hygiene. Although the JMP has not officially endorsed bottled water as an improved source, this survey aligns itself with the DHS standard, and all households using bottled water for drinking are considered to be using an improved source.

Poor access to safe drinking water and sanitation facilities and poor hygiene are associated with skin diseases, acute respiratory infection (ARI), and diarrheal diseases, with the latter two being among the leading preventable causes of death among children. Table 3.1.5 shows the main source of household drinking water. The majority of households in the survey areas (84 percent) use an improved source of drinking water, with lower rates of access to improved sources in rural households (63 percent) and households in the St. Marc and Northern Corridors (both 70 percent).

Table 3.1.5 also provides information on the time it takes to obtain drinking water. Only 15 percent of households can access drinking water directly at home, with a majority (65 percent) needing a round trip under 30 minutes to collect water.

About half of all households also treat their drinking water using an appropriate method (50 percent), which in most cases means adding disinfectant tablets (aquatabs, 36 percent) or bleach/chlorine (18 percent).

Table 3.1.5 Household drinking water

Percent distribution of households by source of drinking water, time to obtain drinking water, and treatment of drinking water [Haiti, 2012]

Characteristic	Corridor			Setting		Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	
<b>Source of drinking water</b>						
<b>Improved Source</b>	<b>69.7</b>	<b>70.0</b>	<b>91.9</b>	<b>60.6</b>	<b>89.7</b>	<b>77.1</b>
Piped water into dwelling	1.8	2.4	6.0	2.1	4.4	3.4
Piped water into yard	2.8	2.2	8.6	2.3	6.1	4.5
Standpipe	8.9	3.1	15.0	4.7	12.2	9.0
Public tap	13.6	21.3	10.9	21.0	10.9	15.3
Protected well in the courtyard	1.5	3.3	1.4	1.5	2.5	2.1
Other protected well	1.9	3.3	0.7	2.3	1.7	2.0
Protected spring	11.9	1.7	3.6	12.5	0.5	5.7
Rainwater	1.7	0.2	0.7	1.5	0.3	0.8
Tanker truck	0.8	0.6	2.1	0.8	1.5	1.2
Water seller	0.6	0.2	2.5	0.4	1.6	1.1
Bottled water	17.8	19.7	28.9	8.8	32.3	22.1
Water selling society	6.4	12.2	11.5	2.7	15.6	10.0
<b>Non-Improved Source</b>	<b>28.1</b>	<b>16.7</b>	<b>7.1</b>	<b>32.0</b>	<b>6.1</b>	<b>17.4</b>
Unprotected well in the courtyard	2.5	1.3	1.2	2.3	1.1	1.6
Public well or other open well	1.3	9.2	1.3	4.3	3.6	3.9
Unprotected spring	14.9	5.8	3.3	18.0	0.4	8.0
Surface water (river/dam/ lake/ponds /stream/canal/irrigation channel)	9.4	0.4	1.4	7.4	0.9	3.7
<b>Other Source</b>	<b>2.2</b>	<b>13.3</b>	<b>1.0</b>	<b>7.4</b>	<b>4.1</b>	<b>5.5</b>
DK/NR/Missing	0.1	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Time to obtain drinking water (round trip)</b>						
Water on premises	10.2	9.3	17.8	9.7	14.5	12.4
Less than 30 minutes	56.8	78.4	63.0	59.9	70.8	66.1
30 minutes or longer	24.2	10.3	9.7	25.3	6.7	14.7
DK/NR/missing	8.8	2.0	9.5	5.1	8.0	6.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Water treatment prior to drinking<sup>1</sup></b>						
Boil	1.0	1.9	3.9	1.9	3.6	3.1
Bleach/chlorine added	9.7	15.6	19.8	17.5	17.6	17.5
Strained through cloth	0.7	0.5	0.4	1.0	0.2	0.5
Ceramic, sand or other filter	1.3	0.4	0.7	0.9	0.6	0.7
Solar disinfection	0.4	0.6	0.2	0.3	0.3	0.3
Let it stand and settle	2.1	1.8	3.4	2.2	3.2	2.9
Aquatabs	42.2	43.8	31.4	46.0	31.0	35.5
Other	3.7	4.9	4.3	8.6	2.6	4.4
Don't know	0.7	0.6	1.5	0.8	1.4	1.2
Missing	2.6	4.0	12.6	2.8	12.1	9.4
No treatment	40.7	38.0	35.7	33.6	38.3	36.9
Percentage using an appropriate						
treatment method <sup>2</sup>	53.7	53.5	48.2	59.1	46.3	50.1
Total Number of Households	1,200	1,199	1,179	1,552	2,026	3,578

<sup>1</sup> Respondents may report multiple treatment methods so the sum of treatments may exceed 100 percent.<sup>2</sup> Appropriate water treatment methods include boiling, bleaching, straining, filtering, solar disinfecting and aquatabs.

Table 3.1.6 shows the proportion of households having access to hygienic sanitation facilities. Hygienic status is determined on the basis of type of facility used and whether it is a shared facility. A household's toilet/latrine facility is classified as hygienic if it is used only by household members (i.e., not shared) and the type of facility effectively separates human waste from human contact. The types of facilities that are most likely to accomplish this are flush or pour flush into a piped sewer system/septic tank/pit latrine, ventilated, improved pit (VIP) latrine, pit latrine with a slab and a composting toilet. A household's sanitation facility is classified as unhygienic if it is shared with other households or if it does not effectively separate human waste from human contact.

In this report we focus on this essential difference between improved and non-improved sanitation facilities rather than the specific types.<sup>16</sup> Almost two in five households (39 percent) in the survey areas have access to an improved, not shared toilet, with greater rates of access in urban areas (45 percent) and in the Cul-de-Sac Corridor (41 percent) and Northern Corridor (39 percent).

Table 3.1.6 Household sanitation facilities

Percent distribution of households by type of toilet/latrine facilities [Haiti, 2012]

Type of toilet/latrine facility	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
<b>Improved, not shared facility</b>	<b>27.5</b>	<b>39.4</b>	<b>41.3</b>	<b>24.4</b>	<b>45.1</b>	<b>39.0</b>
Flush to piped sewer system	1.0	1.8	6.5	0.8	6.4	4.8
Flush to septic tank	2.7	3.1	7.6	1.0	8.1	6.0
Flush to a pit latrine	3.6	0.2	1.3	0.2	1.8	1.4
Ventilated improved pit latrine	4.2	1.3	4.2	3.1	3.7	3.6
Pit latrine with slab	14.1	32.5	20.2	16.7	24.1	21.9
Composting toilet	1.6	0.6	1.0	2.4	0.4	1.0
Portable chemical toilet	0.2	0.1	0.5	0.1	0.5	0.4
<b>Shared facility<sup>1</sup></b>	<b>17.9</b>	<b>26.1</b>	<b>38.1</b>	<b>19.3</b>	<b>38.4</b>	<b>32.8</b>
Flush to piped sewer system	0.1	0.4	1.7	0.1	1.7	1.2
Flush to septic tank	0.3	0.5	3.0	0.1	2.9	2.1
Flush to a pit latrine	1.8	0.0	1.4	0.2	1.5	1.1
Ventilated improved pit latrine	5.0	1.0	3.6	2.2	3.7	3.3
Pit latrine with slab	9.3	24.0	27.1	15.6	27.6	24.0
Composting toilet	1.2	0.2	0.8	1.2	0.6	0.8
Portable chemical toilet	0.3	0.0	0.4	0.0	0.4	0.3
<b>Non-improved facility</b>	<b>51.4</b>	<b>31.7</b>	<b>18.6</b>	<b>53.3</b>	<b>14.4</b>	<b>25.9</b>
Flush to somewhere else	0.2	0.1	0.6	0.3	0.5	0.4
Flush, don't know where	0.2	0.2	0.3	0.3	0.2	0.2
Pit latrine without slab/ Open pit	21.1	15.3	11.7	22.3	10.2	13.8
Bucket	0.5	0.0	0.1	0.2	0.1	0.1
No facility/bush/field	29.2	15.9	5.9	30.1	3.3	11.2
Hanging latrine	0.2	0.2	0.0	0.1	0.0	0.1
Other	3.1	2.8	1.2	3.0	1.3	1.8
DK/NR/Missing	0.1	0.0	0.8	0.0	0.8	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total Number of Households	1,200	1,199	1,179	1,552	2,026	3,578

<sup>1</sup> Facilities that would be considered improved if they were not shared by two or more households

### 3.1.4.2 HOUSING CHARACTERISTICS

Housing characteristics can be used as a measure of the socioeconomic status of household members. More than half of all households (56 percent) reported having access to electricity at home, with greater rates of access in urban areas and in the Cul-de-Sac Corridor (both 71 percent). Most homes have concrete, cement or brick floors (63 percent), particularly in urban areas (73 percent). The majority of homes have one or two rooms for sleeping, with only one-fourth (26 percent) having three rooms or more.

<sup>16</sup> This is to keep the focus on the public health relevance of this indicator, but also for robustness. Respondent error is common when identifying the exact type of toilet facility. For example, there is no sewer system in Haiti, and yet six percent of respondents identified their toilets as flush toilets, a finding compatible with data from the 2005 DHS.

Table 3.1.7 Housing characteristics

Percent distribution of households by housing characteristics and percentage using solid fuel for cooking [Haiti, 2012]

Housing characteristic	Corridor			Setting		Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	
<b>Electricity</b>						
Yes	29.6	25.7	71.1	21.1	70.5	55.9
No	70.3	74.3	28.7	78.9	29.3	44.0
DK/NR/Missing	0.1	0.0	0.3	0.0	0.3	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Flooring material</b>						
Earth/sand	29.1	20.4	13.1	38.0	8.0	16.8
Dung	7.5	2.2	2.4	6.1	1.7	3.0
Wood/ palm	4.7	9.0	6.6	4.9	7.7	6.8
Parquet or polished wood	9.6	2.0	1.0	4.8	1.4	2.4
Concrete, cement, brick	46.5	58.6	68.1	40.8	72.5	63.1
Ceramic	2.1	3.3	6.5	1.7	6.7	5.2
Other	0.5	4.5	1.8	3.8	1.5	2.2
DK/NR/Missing	0.1	0.0	0.5	0.0	0.5	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Rooms used for sleeping</b>						
One	31.5	23.2	40.8	31.6	37.7	35.9
Two	46.2	35.5	36.8	44.2	35.2	37.8
Three or more	22.2	41.3	21.4	24.3	26.3	25.7
DK/NR/Missing	0.1	0.0	0.9	0.0	0.9	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Cooking fuel</b>						
Electricity	0.2	0.5	0.7	0.0	0.8	0.6
Propane gas	2.1	1.6	7.7	1.3	7.5	5.7
Natural gas	0.1	0.0	0.8	0.0	0.8	0.6
Biogas	0.0	0.1	0.4	0.0	0.4	0.3
Kerosene	0.1	0.2	1.4	0.0	1.3	0.9
Coal, lignite	0.2	0.3	0.8	0.5	0.7	0.6
Charcoal	54.2	56.6	76.1	39.6	81.3	69.0
Wood	41.9	39.9	10.9	57.0	6.2	21.2
No food cooked in household	0.5	0.1	0.4	0.4	0.3	0.4
Other	0.7	0.7	0.6	1.1	0.4	0.6
DK/NR/Missing	0.1	0.0	0.3	0.0	0.3	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Percentage using solid fuel for cooking <sup>1</sup>	96.3	96.9	87.7	97.0	88.2	90.8
Number of households	1,200	1,199	1,179	1,552	2,026	3,578

<sup>1</sup> Includes coal/lignite, charcoal and wood.

Cooking practices and cooking fuels also impact the health of family members and the environment. For example, use of solid fuels exposes household members to indoor pollution, which has a direct bearing on their health and surroundings. In the survey areas, deforestation is a specific concern that is directly linked to the use of charcoal and wood for cooking. Charcoal (69 percent) and wood (21 percent) still represent the main source of fuel for cooking.

### 3.1.5 HOUSEHOLD CONSUMPTION

The World Bank defines poverty as whether households or individuals have enough resources or abilities today to meet their needs. Poverty is usually measured based on consumption levels rather than on other measures such as income. Actual consumption is more closely related to a person's well-being in the sense of having enough to meet current basic needs. Also, in poor agrarian economies and in urban economies with large informal sectors, income may be difficult to estimate. It may be seasonal and

erratic, and it may be difficult to estimate particularly for agricultural households whose income may not be monetized.

The prevalence of household poverty was measured using information on household expenditures to compute a household consumption aggregate. The consumption aggregates for this survey were constructed following guidelines from Deaton and Zaidi (2002) and Grosh and Muñoz (1996) by adding together the various goods and services consumed by each household during a period of 12 months. Various components of consumption are grouped together into 10 main categories, including food, usual expenses, occasional expenses, utilities, health care, education, exceptional expenses, assets and remittances.

In general consumption was calculated by adding the value (in Haitian gourds) of the items consumed by the household, as reported by household informants. These items were collected according to different time horizons, but were then transformed into a common daily reference period.

Whenever a household missed data on the value consumed for a given item, that value was imputed using the closest local median value for that item, on a per capita basis. That is, if a household missed consumption information on a given item, the item was assigned the median value reported by other households in the vicinity, divided by the number of persons in the household. Whenever the item was reported frequently enough, this imputation was done at the cluster level. However some items were consumed by few households. In those cases, the level of imputation would be the commune, the department or the total sample, depending on how rare the item was. These imputed amounts were subject to checks that the imputed prices were plausible to avoid undue influence from outliers.

The reported values for each item and each consumption component were checked for outliers to detect possible coding errors or extreme values. Values that were three standard deviations (SDs) over the average were flagged and checked for plausibility. Values deemed implausible were imputed using the methodology described above.

Besides this general methodology, some components required specific computations.

- **Food Consumption**

Food consumption is complex because it involves products that are purchased in the market, where price information is available, and products that are home-produced or received as a gift, where price information is not available. Even when products are purchased, it is often difficult for household informants to report the precise market value of the amounts consumed by the household over the reference period, which often results in missing data.

The value of nonpurchased food (and of any food missing value information) was imputed by transforming the amounts consumed by the household to a common reference unit, and multiplying the local median value of that unit by the amount consumed. If a product was reportedly consumed, but amount information was missing, the median per capita amount consumed by local households was imputed.

- **Assets**

Purchases of durable goods represent large and relatively infrequent expenses. While almost all households incur relatively large expenditures on these goods at some point, only a small proportion of all households made such expenditures during the reference period covered by the survey. As indicated by Deaton and Zaidi (2002), "From the point of view of household welfare, rather than using expenditure on purchase of durable goods during the recall period, the appropriate measure of

consumption of durable goods is the value of services that the household receives from all the durable goods in its possession over the relevant time period” (p. 33).

Consumption of durable goods was calculated as the annual rental equivalent of owning the asset. This rental equivalent is computed as the price of the asset in its current shape multiplied by the sum of the real interest rate and the depreciation rate:

$$S_t P_t (r_t - \pi_t + \delta)$$

In this equation,  $S_t P_t$  is the current value of the asset,  $r_t - \pi_t$  is the real rate of interest, and  $\delta$  is the depreciation rate for the durable good. Each of these components was computed separately.

1. Current value of the asset ( $S_t P_t$ ): This was obtained from household report of the value of the asset in its current shape (i.e., secondhand).
2. Real rate of interest ( $r_t - \pi_t$ ): In theory,  $r_t$  is the general nominal rate at time  $t$ , and  $\pi_t$  is the specific rate of inflation for each asset at time  $t$ . However, in practice, this is calculated as a single real rate of interest that is used for all goods, taken as an average over several years (see Deaton & Zaidi, 2002, p. 33). Data on real interest rates were obtained from the World Bank<sup>17</sup> and averaged over the 1995-2011 period, resulting in a real interest rate of 14.975 percent.
3. Rate of depreciation ( $\delta$ ): The rate of depreciation for each of the items is given by the following formula:

$$1 - \left( \frac{P_t}{P_{t-T}} \right)^{1/T}$$

In this formula,  $P_t$  is the current value of the item,  $P_{t-T}$  is the value of the item when purchased, and  $T$  is the age of the item in years. In order to minimize the influence of outliers, the median  $\delta$  was used for each of the 18 items for which data were collected (i.e., rather than using household-specific values of  $\delta$  calculated from the data).

### • Housing

The case of housing is similar to that of other durable goods, in that it is better measured as an annual consumption of housing services, either annual rent expenditures for renters, or an annual rental equivalent for non-renters.

The baseline survey collected information on rent paid among renters. For non-renters, a rental equivalent was estimated using a hedonic Ordinary Least Squares (OLS) regression model as suggested by Grosh and Muñoz (1996). The model was built on the sample of households reporting non-zero rent, with the log of rent paid by renters as a dependent variable, and several sets of dependent variables, including the following:

- Housing characteristics: number of rooms, type of roofing, type of flooring, type of sanitation services, availability of electricity, repair status.
- Socioeconomic status: consumption subaggregates, asset ownership, bank account ownership, land ownership, HHS Score.
- Location: urban versus rural, corridor, commune, section communale.

<sup>17</sup> <http://data.worldbank.org/indicator/FR.INR.RINR/countries/HT?display=default>

The initial model contained a total of 142 variables, in log form in the case of consumption variables and as a set of dummies for all categorical variables. In order to avoid problems with multicollinearity, a forward stepwise regression approach was used to exclude variables that did not contribute to model fit and were thus statistically redundant. The final model was estimated based on the following regression equation:

$$\log(R_i) = \beta_0 + \beta X_i + \varepsilon_i$$

In this equation,  $R_i$  represents the reported non-zero rent paid by household  $i$ ,  $\beta_0$  is the constant term,  $X_i$  is the final vector of dependent variables and  $\varepsilon_i$  is the error term accounting for unexplained variance. The final model showed an Adjusted R-squared = 0.59, indicating that it explained 59 percent of the variance in rent values. The unstandardized beta weights ( $\beta$ ) resulting from this regression equation (see Annex A) were applied to the vector of dependent variables among non-renting households to estimate their annual rent equivalent.

The resulting housing consumption variable as a share of total consumption was compared between imputed and non-imputed households. For households with self-reported rent data, housing represents 9 percent of total consumption on average. For the total sample, after imputation, housing represents 7 percent of total consumption on average. This difference between households is consistent across settings (urban/rural) and corridors, with housing expenditures for renting households representing a slightly greater share of total expenditures.

The final consumption categories presented in Tables 3.7a and 3.7b are in constant 2010 US dollars, as 2010 is the official baseline year of the FTF initiative. These equivalents were computed using the following steps:

1. Convert local currency units (LCU) at the time of the survey to LCU at 2005 prices, by dividing by the Consumer Price Index (CPI) for the survey month. Three deflators were computed using monthly CPI data from the Central Bank of Haiti,<sup>18</sup> one for each month of data collection. The adjustment was done using the average monthly inflation in 2005 as the base factor ( $CPI_{2005} = 114.07$ ) and the monthly inflation for each of the survey months as the numerator ( $CPI_{Oct.2012} = 201.70$ ,  $CPI_{Nov.2012} = 203.30$ ,  $CPI_{Dec.2012} = 204.10$ ):
  - October 2012 to 2005 deflator =  $201.70 / 114.07 = 1.7682$
  - November 2012 to 2005 deflator =  $203.30 / 114.07 = 1.7823$
  - December 2012 to 2005 deflator =  $204.10 / 114.07 = 1.7893$

These deflators were applied to the raw consumption aggregates in HTG, depending on the month when the consumption data were collected.

2. Convert 2005 LCU to 2005 US\$ by dividing by the 2005 Purchasing Power Parity (PPP) conversion rate (for Haiti, 19.37).<sup>19</sup>
3. Convert US\$ in 2005 prices to US\$ in 2010 prices by multiplying by 111.65, which is the US CPI for 2010.

Prices shown in Annex A were also adjusted to the 2010 equivalent in HTG. The adjustment was done using the average monthly inflation in 2010 as the base factor ( $CPI_{2010} = 170.88$ ) and the monthly inflation for each of the survey months as the numerator ( $CPI_{Oct.2012} = 201.70$ ,  $CPI_{Nov.2012} = 203.30$ ,

<sup>18</sup> Base August 2004 = 100. See <http://www.brh.net/ipc.pdf>

<sup>19</sup> Global Purchasing Power Parities and Real Expenditures, 2005 International Comparison Program. Available at <http://data.worldbank.org/indicator/PA.NUS.PRVT.PP?page=1>

CPI<sub>Dec.2012</sub> = 204.10). Three deflators were computed using these CPI values, one for each month of data collection:

- October 2012 to 2010 deflator =  $201.70 / 170.88 = 1.1803$
- November 2012 to 2010 deflator =  $203.30 / 170.88 = 1.1897$
- December 2012 to 2010 deflator =  $204.10 / 170.88 = 1.1944$

The resulting median and average<sup>20</sup> consumption in the survey areas is shown on Table 3.1.8. The median daily per capita (DPC) expenditures were 3.4 US\$, meaning that 50 percent of the population spends 3.4 US\$ or less per day. Consumption is dominated by food expenditures, both for the total sample and among corridors and settings (urban/rural). Food expenditures are highest in urban areas, with a median of 1.5 US\$ DPC, and in the Cul-de-Sac Corridor, with a median of 1.5 US\$ DPC. As a share of total consumption, food represents 43 percent of total expenditures on average, with greater shares in the St. Marc Corridor (52 percent) and Northern Corridor (46 percent), as well as in rural areas (49 percent).

The detail on the 10 food items with the highest DPC expenditures is presented in Table 3.1.9.<sup>21</sup> Food expenditures are dominated by basic grains, including imported rice and beans, both with an average consumption of 0.2 US\$ DPC. It is worth noting that in the St. Marc Corridor, rice consumption is dominated by local rice, which is not surprising considering that the St. Marc Corridor includes the fertile Artibonite Valley, the main rice-growing area in the country.<sup>22</sup> In addition to these two major staples, food consumption is dominated by poultry (chicken/duck/goose, 0.08 US\$ DPC); oil, butter or lard (0.08 US\$ DPC); and basic carbohydrates such as pasta, sugar/honey, bread and corn (between 0.05 and 0.07 US\$ DPC).

Usual expenses on items such as cleaning and hygiene products, fuel and transportation represent the next main category of consumption, with a median of 0.8 US\$ DPC. The detail on the top five usual expenditures is presented in Table 3.1.9,<sup>23</sup> with charcoal as the main usual product (0.4 US\$ DPC), followed by local transport (0.2 US\$ DPC) and soap and cleaning products (0.2 US\$ DPC).

Education-related expenditures, with a median of 0.2 US\$ DPC, represent the third main category. All remaining categories represent a minor share of expenditures, although in all cases consumption is greater in urban areas and in the Cul-de-Sac Corridor.

Finally, poverty lines were calculated to estimate the proportion of the population living in extreme poverty, defined as having average daily consumption of less than US\$1.25 per day, converted into local currency terms at 2005 PPP exchange rates. This poverty line was calculated using the following two steps:

- First, the \$1.25 line was converted into LCUs, using the 2005 PPP exchange rate. In the case of Haiti, the 2005 PPP conversion factor for private consumption (LCU per international \$) is 19.37, which means that \$1.25 is equivalent to 24.2067 HTG at 2005 PPP.

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<sup>20</sup> Consumption data are often positively skewed, meaning that the majority of the population concentrates toward the bottom of the distribution, with a long tail to the right representing individuals with high daily per capita expenditures. Whenever significant skewness is present, the median is the preferred measure of central tendency, as it is less sensitive to outliers. For example, in the specific case of positive skewness, the mean will be higher than the median. However, the consumption tables also present average values, as the average tends to be easier to interpret for most readers.

<sup>21</sup> For the full list of food expenditures, see Annex A.

<sup>22</sup> See USAID-FAS. (2010). *Rice Production and Trade Update*. Available at [http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Rice%20Production%20and%20Trade%20Update\\_Santo%20Domingo\\_Haiti\\_11-9-2010.pdf](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Rice%20Production%20and%20Trade%20Update_Santo%20Domingo_Haiti_11-9-2010.pdf)

<sup>23</sup> For the full list of usual expenditures, see Annex A.

- Second, the resulting figure was adjusted for cumulative price inflation since 2005. The adjustment was done using the average monthly inflation in 2005 as the base factor ( $CPI_{2005} = 114.07$ ) and the monthly inflation for each of the survey months as the numerator ( $CPI_{Oct.2012} = 201.70$ ,  $CPI_{Nov.2012} = 203.30$ ,  $CPI_{Dec.2012} = 204.10$ ).

Three poverty lines were thus computed using these CPI values, one for each month of data collection:

- October 2012 Poverty Line =  $201.70 / 114.07 = 1.7682 * 24.2067 = 42.8030$  HTG
- November 2012 Poverty Line =  $203.30 / 114.07 = 1.7823 * 24.2067 = 43.1425$  HTG
- December 2012 Poverty Line =  $204.10 / 114.07 = 1.7893 * 24.2067 = 43.3123$  HTG

Table 3.1.8 shows the proportion of the population in the survey areas living below the poverty line, with a total poverty headcount ratio of 12 percent. Poverty is more prevalent in the Northern Corridor (27 percent) and St. Marc Corridor (22 percent), and in rural areas (25 percent). These poverty headcount ratios are much lower than the latest figures reported by the World Bank, which estimated the overall poverty headcount ratio in Haiti at 62 percent in 2001.<sup>24</sup> It is, however, difficult to draw a comparison between these two data points, given the time gap and the different populations covered.

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<sup>24</sup> See <http://data.worldbank.org/indicator/SI.POV.DDAY>

**Table 3.1.8 Daily Per Capita Consumption**

Median and average daily per capita consumption by type of expenditure, in 2010 USD [Haiti, 2012]

Type of Expenditure (Median values, in 2010 USD)	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
Food <sup>1</sup>	1.3	1.0	1.5	1.0	1.5	1.3
Usual expenses <sup>2</sup>	0.6	0.5	0.9	0.6	0.8	0.8
Occasional expenses <sup>3</sup>	0.1	0.1	0.1	0.1	0.1	0.1
Utilities <sup>4</sup>	0.0	0.0	0.1	0.0	0.1	0.1
Health care <sup>5</sup>	0.0	0.0	0.0	0.0	0.0	0.0
Education <sup>6</sup>	0.1	0.1	0.3	0.1	0.3	0.2
Exceptional expenses <sup>7</sup>	0.0	0.0	0.0	0.0	0.0	0.0
Assets <sup>8</sup>	0.0	0.0	0.0	0.0	0.0	0.0
Remittances <sup>9</sup>	0.0	0.0	0.0	0.0	0.0	0.0
Housing	0.1	0.1	0.2	0.1	0.2	0.2
<b>Median Total Expenditures (in 2010 USD)<sup>10</sup></b>	<b>2.5</b>	<b>2.2</b>	<b>4.1</b>	<b>2.3</b>	<b>4.0</b>	<b>3.4</b>
<b>Type of Expenditure (Average values, in 2010 USD)</b>						
Food <sup>1</sup>	1.6	1.2	1.8	1.3	1.8	1.6
Usual expenses <sup>2</sup>	0.9	0.7	1.4	0.9	1.3	1.2
Occasional expenses <sup>3</sup>	0.2	0.1	0.2	0.1	0.2	0.2
Utilities <sup>4</sup>	0.1	0.1	0.2	0.1	0.2	0.2
Health care <sup>5</sup>	0.1	0.1	0.1	0.1	0.1	0.1
Education <sup>6</sup>	0.3	0.2	0.6	0.3	0.5	0.5
Exceptional expenses <sup>7</sup>	0.1	0.1	0.2	0.1	0.2	0.2
Assets <sup>8</sup>	0.0	0.0	0.1	0.0	0.1	0.1
Remittances <sup>9</sup>	0.3	0.5	0.8	0.4	0.8	0.6
Housing	0.1	0.2	0.3	0.1	0.3	0.3
<b>Average Total Expenditures (in 2010 USD)<sup>10</sup></b>	<b>3.3</b>	<b>2.7</b>	<b>4.7</b>	<b>2.9</b>	<b>4.6</b>	<b>4.1</b>
<b>Prevalence of Poverty<sup>11</sup></b>	<b>21.9</b>	<b>26.8</b>	<b>5.2</b>	<b>25.0</b>	<b>7.1</b>	<b>12.4</b>
Number of persons	5,375	6,044	5,274	7,183	9,510	16,693

<sup>1</sup> Includes a total of 58 different food items and meals consumed outside of the household.

<sup>2</sup> Includes soap and cleaning products, fuel for cooking and lighting, hygiene and cosmetic products, domestic work and transport.

<sup>3</sup> Includes small household items, clothing and entertainment.

<sup>4</sup> Includes water, telephone, electricity and internet.

<sup>5</sup> Includes consultations, drugs, hospitalization, examinations and medical care, glasses and prosthetics and treatment materials.

<sup>6</sup> Includes school fees, books and other supplies, school transport fees, school uniforms, shoes and other school clothing and other school-related expenses.

<sup>7</sup> Includes construction expenses, ceremonies, parties, taxes, fines, tax contraventions, ornaments, durable furniture and equipments, vehicle purchases.

<sup>8</sup> Includes annual rental equivalent of 18 different durable goods.

<sup>9</sup> Includes remittances sent

<sup>10</sup> Remittances, exceptional health expenditures, and other exceptional expenditures excluded (as recommended by Deaton & Zaidi, 2002)

<sup>11</sup> Percent of people living below the poverty line.

**Table 3.1.9 Itemized daily Per Capita Food and Usual Non-Food Consumption**

Average daily per capita consumption on specific items, in 2010 USD [Haiti, 2012]

	St. Marc	Corridor Northern	Cul-de-Sac	Setting		Total
				Rural	Urban	
<b>Food Expenditures (Average values for top 10 expenditures, in 2010 USD)</b>						
Imported rice	0.05	0.16	0.18	0.13	0.17	0.16
Beans	0.16	0.12	0.16	0.15	0.16	0.15
Chicken/duck/goose	0.07	0.05	0.09	0.05	0.10	0.08
Oil, butter or lard	0.08	0.08	0.08	0.08	0.08	0.08
Local rice	0.14	0.05	0.07	0.08	0.07	0.07
Pasta	0.05	0.05	0.07	0.05	0.07	0.07
Sugar/honey	0.06	0.05	0.07	0.06	0.06	0.06
Bread	0.05	0.05	0.07	0.05	0.07	0.06
Corn	0.05	0.04	0.06	0.05	0.06	0.06
Milk	0.05	0.03	0.06	0.04	0.06	0.05
<b>Usual non-food expenditures (Average values for top 5 expenditures, in 2010 USD)</b>						
Charcoal	0.18	0.13	0.50	0.18	0.45	0.37
Transport - local	0.16	0.13	0.25	0.14	0.24	0.21
Soap and cleaning products	0.16	0.13	0.24	0.16	0.23	0.21
Hygiene - toothpaste, deodorant, body cream, etc	0.15	0.09	0.25	0.17	0.22	0.20
Other vehicle-related expenses - car motorcycle, truck: lubricants, reparations, etc	0.05	0.08	0.17	0.07	0.16	0.14
Number of persons	5,375	6,044	5,274	7,183	9,510	16,693

### 3.1.6 HOUSEHOLD ACCESS TO BANKING AND CREDIT

The Haiti Baseline Survey collected information on the financial characteristics of households in the survey areas, including access to banking and loans. Only one third of households (34 percent) have access to a bank account, with large differences between urban and rural areas: in urban areas almost half of households (46 percent) have access to a bank account, whereas in rural areas only one in six (16 percent) do. Access to banking is also greater in the Cul-de-Sac Corridor (39 percent) than in the Northern Corridor (32 percent) and St. Marc Corridor (26 percent).

The proportion of households that received a credit or loan in the past 12 months is even smaller, with a total of 13 percent. In this case, there are fewer differences between urban and rural areas. The average loan was 17,030 HTG, with larger average loans in urban areas (18,376 HTG) and in the Cul-de-Sac Corridor (20,691). Two out of five households (41 percent) report having paid off these loans.

In most cases, loans were taken informally from family members or friends (41 percent), with banks or finance companies a distant second (23 percent). Cooperatives, community organizations, or saving and credit groups were less common (12 percent), although they have a greater preponderance in rural areas (18 percent).

The reasons for taking a loan are varied, with the full list shown in Table 3.1.10. The main reason for taking a loan was investment in a family business (29 percent), followed by investment in farm production (19 percent), which is naturally more predominant in rural areas (27 percent).

Buying food was the third reason mentioned most often (10 percent), particularly in urban areas (12 percent). Having to take a loan to purchase food or to pay off another debt (5 percent) may be an indication of household financial distress.

	Corridor			Setting		Gendered Household Type			Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	Adult Female no Adult Male	Adult Male no Adult Female	Male and Female Adults	
<b>Access to Banking and Credit</b>									
Percentage of households with access to a bank account	26.1	31.8	39.1	16.1	46.0	25.7	31.2	36.6	34.1
Percentage of households that received a credit or loan in the last 12 months	17.9	16.5	11.0	14.2	12.7	12.1	9.5	13.7	13.1
Number of households	1200	1199	1179	1552	2026	613	268	2686	3578
<b>Characteristics of Loan <sup>1</sup></b>									
Average amount of loan received (in HTG)	11,177	13,818	20,691	14,125	18,376	10,423	11,275	18,824	17,030
Percentage of households that have repaid the loan	40.0	40.9	41.5	43.5	40.0	51.2	38.8	39.1	41.1
<b>Source of Loan <sup>1</sup></b>									
Friend/family member	51.6	30.3	42.3	43.0	40.0	41.5	46.1	40.5	40.9
Bank/finance company	15.3	30.8	21.5	21.6	23.4	18.9	33.0	23.0	22.8
Cooperative/community organization/saving and credit group	11.6	11.6	13.1	18.3	9.7	9.4	0.0	13.8	12.4
Local money lender	1.4	5.6	10.8	4.7	9.0	12.4	10.0	6.5	7.6
Employer	2.3	1.5	3.1	1.5	3.0	0.0	0.0	3.2	2.5
Individual from which purchase was made	0.9	0.0	1.5	0.6	1.2	0.5	1.8	1.1	1.0
Store from which purchase was made	0.0	0.5	0.8	0.0	0.8	0.0	0.0	0.7	0.6
Other	3.3	4.5	1.5	3.5	2.3	2.7	0.0	2.8	2.7
DK/NR/Missing	13.5	15.2	5.4	6.9	10.7	14.6	9.1	8.4	9.5
<b>Reasons for Taking Loan <sup>2</sup></b>									
To expand family business	16.7	38.4	29.2	31.5	28.2	29.0	15.5	30.2	29.3
For farm production	26.5	2.5	24.6	26.5	15.8	14.0	22.8	20.0	19.2
To buy food	11.2	8.1	10.0	5.9	11.5	9.7	7.3	9.9	9.7
To pay for school-related expenses	3.7	7.6	7.7	4.6	8.0	3.9	1.8	7.8	6.9
To purchase a domestic appliance	2.3	1.0	8.5	4.9	5.6	1.1	0.0	6.6	5.3
To pay off another debt	4.7	3.0	5.4	3.7	5.1	10.4	22.0	2.4	4.6
To purchase a vehicle	2.3	3.5	3.8	3.1	3.6	2.4	0.0	3.9	3.5
For house improvement or reparation	5.6	2.0	3.1	3.9	3.0	1.1	2.7	3.8	3.3
To celebrate a festival, wedding	4.2	3.5	2.3	3.5	2.8	1.1	0.0	3.6	3.0
To pay for health-related expenses	3.7	4.0	2.3	2.5	3.3	3.1	4.6	2.9	3.0
To purchase land	2.8	1.5	3.1	3.4	2.2	8.4	2.7	1.4	2.6
To go abroad	1.9	0.5	2.3	2.4	1.4	1.1	0.0	2.0	1.8
To purchase house	0.9	1.0	1.5	1.0	1.4	0.5	2.7	1.4	1.3
Other	6.0	2.0	6.9	5.3	5.5	8.1	1.8	5.1	5.5
DK/NR/Missing	21.9	23.7	12.3	12.2	19.4	22.9	17.8	15.9	17.1
Number of households that received credit or loan in the last 12 months	215	198	130	248	295	85	36	422	543

<sup>1</sup> Includes households that received a loan in the last 12 months  
<sup>2</sup> Multiple responses possible. Includes households that received a loan in the last 12 months

### 3.1.7 HOUSEHOLD ENTERPRISES

An enterprise was defined as an organization (with one or more employees) engaged in the trade of goods, services, or both to customers, either for profit or not. A household enterprise was recorded if anyone in the household owned an enterprise within the past 12 months.

Micro, small and medium enterprises (MSMEs) represent an opportunity for economic growth and job creation in the target areas. The survey aimed to estimate the prevalence of household MSMEs linked to specific target value chains, including construction, textile/garment, agriculture (i.e., the production and sale of agricultural products) and agribusinesses related to (a) provision of products or services to farmers and (b) food processing, distribution and sale.

Table 3.1.11 shows the total prevalence of household enterprises, and the prevalence of each of the target value chains. Overall, one in five households (20 percent) operated an enterprise in the past 12 months. Agriculture is the only target value chain with a significant number of household enterprises (9 percent), with an obviously greater prevalence in rural areas (25 percent) and in the St. Marc Corridor (17 percent).

Household enterprises in general were most prevalent in the Cul-de-Sac Corridor (22 percent), but were typically linked to other sectors outside the target value chains (13 percent).

Table 3.1.11 Household Enterprises

Percent distribution of households by type of enterprise operated [Haiti, 2012]

Sector of activity	Corridor			Setting		Gendered Household Type			Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	Adult Female no Adult Male	Adult Male no Adult Female	Male and Female Adults	
<b>Construction</b>	<b>0.1</b>	<b>0.3</b>	<b>1.3</b>	<b>0.8</b>	<b>1.0</b>	<b>0.0</b>	<b>1.7</b>	<b>1.1</b>	<b>0.9</b>
Construction of buildings, roads, railways, utility projects or other	0.0	0.2	0.3	0.2	0.3	0.0	0.0	0.3	0.3
Specialized construction activities (demolition, electrical, plumbing or other)	0.0	0.0	0.3	0.0	0.2	0.0	1.7	0.1	0.2
Manufacturer of blocks and bricks	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.1
Other construction	0.0	0.0	0.3	0.2	0.2	0.0	0.0	0.2	0.2
DK/NR/Missing	0.0	0.0	0.3	0.4	0.2	0.0	0.0	0.3	0.2
<b>Textile/garment</b>	<b>0.2</b>	<b>0.4</b>	<b>1.3</b>	<b>0.6</b>	<b>1.1</b>	<b>0.8</b>	<b>0.8</b>	<b>1.0</b>	<b>0.9</b>
Tailoring	0.0	0.2	0.3	0.2	0.3	0.1	0.8	0.2	0.3
Sewing, knitting, embroidery	0.0	0.0	0.3	0.0	0.3	0.3	0.0	0.2	0.2
Large scale manufacturing (assamblage)	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.1
Other textile/garment	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1
DK/NR/Missing	0.2	0.1	0.4	0.1	0.4	0.3	0.0	0.3	0.3
<b>Agriculture</b>	<b>17.0</b>	<b>8.7</b>	<b>7.0</b>	<b>24.9</b>	<b>1.9</b>	<b>5.3</b>	<b>7.1</b>	<b>9.6</b>	<b>8.7</b>
<b>Agribusiness - Farmer product or service suppliers</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.2</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.3</b>	<b>0.3</b>
Boutique/input and equipment sales	0.0	0.1	0.2	0.0	0.2	0.0	0.3	0.1	0.1
Other sale of products or services to farmers	0.0	0.0	0.1	0.0	0.1	0.3	0.0	0.0	0.1
DK/NR/Missing	0.3	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.1
<b>Agribusiness - Food processing, distribution and sale</b>	<b>2.2</b>	<b>0.4</b>	<b>0.9</b>	<b>1.3</b>	<b>0.9</b>	<b>0.5</b>	<b>0.0</b>	<b>1.2</b>	<b>1.0</b>
Sale	1.5	0.3	0.5	0.9	0.5	0.5	0.0	0.7	0.6
Packing	0.2	0.0	0.2	0.1	0.2	0.0	0.0	0.2	0.1
Storage and transportation	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.1
Processing	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Other food processing, distribution and sale	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1
DK/NR/Missing	0.3	0.0	0.1	0.2	0.1	0.0	0.0	0.1	0.1
<b>Other sector</b>	<b>2.8</b>	<b>4.5</b>	<b>13.3</b>	<b>6.9</b>	<b>11.3</b>	<b>8.3</b>	<b>2.5</b>	<b>11.1</b>	<b>10.0</b>
Retail	1.4	2.7	8.1	4.2	6.9	6.8	0.8	6.4	6.1
Artisan	0.1	0.1	0.3	0.0	0.3	0.0	0.2	0.2	0.2
Personal Services	0.0	0.0	0.8	0.0	0.7	0.0	0.0	0.7	0.5
Transport	0.3	0.1	0.9	0.7	0.6	0.0	0.0	0.9	0.7
Hospitality	0.2	0.3	0.3	0.3	0.3	0.4	0.0	0.3	0.3
Vehicle Repair	0.1	0.2	0.5	0.2	0.4	0.0	0.0	0.5	0.4
Other	0.6	1.3	2.4	0.7	2.4	1.0	2.4	2.1	1.9
<b>Total households operating an enterprise</b>	<b>21.3</b>	<b>14.0</b>	<b>22.3</b>	<b>31.2</b>	<b>15.9</b>	<b>14.9</b>	<b>12.2</b>	<b>22.5</b>	<b>20.4</b>
Number of households	1,200	1,199	1,179	1,552	2,026	613	268	2,686	3,578

Note: An enterprise was defined as an organization (with one or more employees) engaged in the trade of goods, services, or both to customers, either for profit or not. It does not include self-employed or own-account workers. A household enterprise was recorded if a household member owned an enterprise within the last 12 months.

The characteristics of household enterprises are shown in Table 3.1.12, with a breakdown for the two target value chains with a sufficient sample size (food processing, distribution and sale agribusinesses; and agriculture).

The average age of household enterprises was 9.6 years. Household enterprises had average revenues of 2,301 HTG in the past week and 8,074 HTG in the last month. The average number of employees in the past month was 2.7. Only 20 percent of the managers had received any business training, and only 10 percent of the enterprises were registered (had a “Patente”) with the Direction Générale des Impôts (DGI).

Looking at agricultural enterprises in particular, we find that their average age was 16 years. Agricultural household enterprises had average revenues of 1,843 HTG in the past week and 8,576 HTG in the last month. The business cycle of agricultural enterprises is tied to the harvest, so it may be more reliable to collect information on revenues for the past planting season,<sup>25</sup> which on average were 8,485 HTG. Similarly, employment may be more seasonal than in other sectors, so the number of employees referred to the past 12 months, with an average of 4.0 employees. Only seven percent of the managers had received any business training, and only two percent of the agricultural enterprises were registered with the Direction Générale des Impôts (DGI).

Food processing, distribution and sale agribusinesses were rare, and the sample size available is small, so data cannot be disaggregated by corridor. The average age of these businesses was five years. They had average revenues of 4,440 HTG in the past week and 13,352 HTG in the last month. The business cycle of some of these businesses may be related to the harvest as well. Average revenues for the past planting season were 7,250 HTG.<sup>26</sup> The number of employees in the past month was 1.1. Enterprise managers in this sector were more likely than the average household enterprise manager to have business training (57 percent) and to be registered with the DGI (14 percent).

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<sup>25</sup> For this survey, the planting season prompted by the questionnaire was April-July 2012.

<sup>26</sup> It is likely that most managers, not having received any business training, have imperfect information about their revenues and keep no formal records. More specifically, the fact that revenues for the past planting season were lower than the past month calls into question the reliability of these reports.

Table 3.1.12 Characteristics of Household Enterprises

Age, revenue, number of employees, business training and registration status of enterprises by sectors of focus<sup>1</sup> [Haiti, 2012]

Sector of activity	Corridor			Setting		Gendered Household Type			Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	Adult Female no Adult Male	Adult Male no Adult Female	Male and Female Adults	
<b>Agribusiness - Food processing, distribution and sale</b>									
Average age of enterprise (in years)	-	-	-	3.6	-	-	-	5.5	5.4
Average revenue in the last week (in HTG)	-	-	-	3,176	-	-	-	4,637	4,440
Average revenue in the last month (in HTG)	-	-	-	8,492	-	-	-	13,717	13,352
Average revenue in the last planting season (in HTG)	-	-	-	8,844	-	-	-	7,570	7,250
Average number of full-time employees in the last month	-	-	-	1.1	-	-	-	1.1	1.1
Manager received any business training	-	-	-	76.1	-	-	-	56.5	57.4
Registered enterprises <sup>2</sup>	-	-	-	7.5	-	-	-	15.4	14.0
Number of Food processing, distribution and sale Enterprises	26	5	11	31	11	7	0	35	42
<b>Agriculture</b>									
Average age of enterprise (in years)	13.7	16.7	16.5	16.8	6.8	15.1	18.5	15.2	15.5
Average revenue in the last week (in HTG)	2,979	529	1,762	2,018	682	658	7,919	1,627	1,843
Average revenue in the last month (in HTG)	17,550	14,782	1,671	9,711	1,075	2,612	70,474	5,506	8,576
Average revenue in the last planting season (in HTG)	2,566	1,530	13,894	2,879	37,645	2,693	3,691	9,645	8,485
Average number of full-time employees in the last 12 months	8.2	3.7	2.0	4.2	3.2	3.0	3.7	3.2	4.0
Manager received any business training	9.8	9.6	3.7	6.8	5.1	1.2	8.6	7.2	6.6
Registered enterprises <sup>2</sup>	3.4	1.9	1.2	2.3	0.0	5.8	2.4	1.4	2.0
Number of Agriculture Enterprises	204	104	82	339	51	33	34	320	390
<b>All enterprises</b>									
Average age of enterprise (in years)	10.8	12.0	9.0	13.0	7.7	7.6	16.5	9.5	9.6
Average revenue in the last week (in HTG)	2,636	1,385	2,407	2,356	2,251	1,488	4,268	2,320	2,301
Average revenue in the last month (in HTG)	14,833	11,175	6,138	11,031	5,437	3,553	37,818	7,178	8,074
Average number of full-time employees in the last month <sup>3</sup>	2.9	4.3	2.3	2.6	2.8	0.6	5.6	2.9	2.7
Manager received any business training	20.1	9.9	21.2	13.2	24.7	8.1	36.9	20.4	19.5
Registered enterprises <sup>2</sup>	5.5	2.8	12.1	4.8	14.1	4.0	15.0	10.6	9.9
Number of enterprises	273	181	297	457	294	83	46	619	751

Note: An enterprise was defined as an organization (with one or more employees) engaged in the trade of goods, services, or both to customers, either for profit or not. It does not include self-employed or own-account workers. A household enterprise was recorded if a household member owned an enterprise within the last 12 months.

<sup>1</sup> Sample size sufficient for two focus sectors. Insufficient sample size (n < 30) for construction, textile and farmer product or service suppliers.

<sup>2</sup> A household enterprise was considered to be registered if it had a 'Patente' from the Direction Générale des Impôts (DGI).

<sup>3</sup> Excludes employees from the agricultural sector, which are measured for the last 12 months.

## 3.2 PUBLIC SERVICES AND GOVERNANCE

### 3.2.1 DELIVERY OF PUBLIC SERVICES

Almost all households in the survey areas (94 percent) accessed some type of public service in the past 12 months. Often-used public services include roads (84 percent), markets (74 percent) the public

transportation system (68 percent). Services that are used less often include cultural activities (10 percent); morgues and cemeteries (12 percent); sport installations such as basketball fields, volleyball fields or swimming pools (15 percent); and the police (18 percent).

Type of Public Service	St. Marc	Corridor Northern	Cul-de-Sac	Setting		Total
				Rural	Urban	
Public transportation system	67.4	82.2	64.0	64.0	70.0	68.2
Public education system (schools)	54.2	52.5	37.2	40.8	43.6	42.8
Public primary health care	52.7	46.5	44.1	41.8	47.5	45.8
Tap water	40.2	38.5	58.1	34.5	58.7	51.5
Electricity	31.5	28.5	64.3	20.2	65.8	52.3
Trash disposal	34.3	24.4	46.1	17.3	49.5	40.0
Roads	84.5	88.1	83.1	85.5	83.8	84.3
Markets	69.5	73.3	75.1	67.4	76.7	73.9
Basketball, volleyball fields, swimming pools etc.)	15.3	12.1	15.9	5.4	19.0	15.0
Cultural activities	13.1	7.8	10.0	3.8	12.5	10.0
Morgues, cemeteries	13.4	6.8	12.9	7.9	13.3	11.7
Police	20.2	6.8	20.4	4.6	22.9	17.5
Total households accessing a public service	94.3	93.7	94.6	94.1	94.5	94.4
Total households not accessing a public service	5.5	6.3	5.3	5.8	5.4	5.5
DK/NR/Missing	0.2	0.0	0.2	0.0	0.2	0.1
Total	100.0	100.0	100.0	# 100.0	100.0	100.0
Number of households	1,200	1,199	1,179	1,552	2,026	3,578

Note: Multiple services possible so the sum of services may exceed 100 percent

Although the base of users is small, the police receive the highest satisfaction ratings among households that used the service, with 64 percent of households indicating that the service is “good” or “very good.” Other services receiving high satisfaction ratings include the public school system (60 percent), tap water (56 percent), and public primary health care and cultural activities (both 53 percent). Satisfaction is lowest with markets (27 percent), roads (28 percent) and trash disposal services (32 percent).

Type of Public Service	St. Marc	Corridor Northern	Cul-de-Sac	Setting		Total
				Rural	Urban	
Public transportation system	75.4	36.6	43.6	49.5	45.0	46.2
Public education system (schools)	80.0	44.1	60.4	62.1	58.7	59.7
Public primary health care	76.6	40.3	51.0	62.9	49.1	52.8
Tap water	77.4	60.6	52.4	66.7	53.8	56.4
Electricity	57.7	22.8	42.9	47.0	41.2	41.8
Trash disposal	51.3	8.6	32.9	34.0	31.7	32.0
Roads	45.1	13.4	29.9	20.0	32.0	28.4
Markets	57.3	14.1	25.5	27.7	27.2	27.3
Basketball, volleyball fields, swimming pools etc.)	66.8	40.0	38.0	39.4	42.8	42.4
Cultural activities	68.8	71.0	44.1	68.6	50.9	52.9
Morgues, cemeteries	72.7	54.9	38.2	68.3	40.1	45.7
Police	86.4	30.5	63.3	73.4	63.6	64.3

Note: Sample base for each public service includes the households that used that public service within the last 12 months.

### 3.2.2 GOVERNANCE

Good governance is a necessary prerequisite for sustainable development and economic growth. Components of good governance include good institutions, rule of law, civic participation, transparency and accountability. The study collected information on the perceptions that households report on each of these components and their personal experiences to obtain an overall assessment of the state of governance in the survey areas.

Institutional governance indicators, including trust in the government, the electoral system and the legal system, as well as the prevalence of corruption and violence, are presented in Table 3.2.3. Overall, trust in the government is low. Only 15 percent think that the country is moving in the right direction, and one in four (25 percent) think that the government's ability to meet citizens' needs has improved.

These opinions may be driven by a sense of disenfranchisement, as fewer than one in four households believe that elections are very or somewhat fair (24 percent). Additionally, 33 percent believe that corruption among government officials is common or very common, 30 percent believe that the number of corruption cases in the government is increasing somewhat or a lot, and only 18 percent believe that the fight against corruption is somewhat or very successful. A total of three percent actually experienced a case of corruption involving a government employee or the police in the past 12 months.

This survey did not ask for the specific type of public employee involved in the case of corruption, so it is difficult to compare these results against benchmarks such as the 2010 America's Barometer for Haiti. That survey reported cases of bribery among users of different public services, estimating that nine percent of those dealing with the police and 12 percent of those dealing with a public employee were asked for bribes.

In addition to corruption, household respondents were asked about instances of crime and violence. A total of four percent know someone who was a victim of physical violence in the past 12 months, and three percent were themselves victims of a violent crime in the past six months. The police force itself appears to be a significant perpetrator of physical violence against citizens, with 27 percent of respondents having witnessed an act of police brutality in the past 12 months. Reported police brutality was particularly prevalent in urban areas (31 percent) and in the Cul-de-Sac Corridor (36 percent).

The survey also asked about support services available in the community for victims of violence or abuse. The police is the service reported most often (45 percent), particularly in urban areas (52 percent). Health services (14 percent) and legal support services (12 percent) were the other services mentioned most often. Up to seven percent reported that there are no support services in their community, with a greater rate in rural areas (nine percent).

**Table 3.2.3 Governance indicators**

Percent distribution of household respondents by indicators [Haiti, 2012]

	St. Marc	Corridor Northern	Cul-de-Sac	Setting		Total
				Rural	Urban	
<b>General Indicators</b>						
Country is moving in the right direction	12.2	16.6	14.8	12.5	15.7	14.8
Government's ability to meet citizen needs has improved	18.8	20.4	27.3	19.1	27.0	24.7
Elections in Haiti are very or somewhat fair	26.3	17.0	26.0	20.4	25.7	24.1
<b>Corruption</b>						
Corruption among public officials common or very common	43.0	16.8	35.6	22.7	36.9	32.7
Experienced a case of corruption involving a government employee or police in the past 12 months	1.7	1.8	3.3	1.8	3.2	2.8
Number of cases of corruption in the government increasing a lot or somewhat	34.5	19.3	31.7	27.0	30.6	29.5
Fight against corruption is very or somewhat successful	23.2	12.3	18.2	16.9	18.0	17.7
<b>Crime and Violence</b>						
Knows a victim of physical violence in the last 12 months	5.5	5.5	3.6	4.7	4.1	4.3
Was a victim of violent crime in the last 6 months	3.4	5.3	2.0	4.6	2.2	2.9
Witnessed an act of police brutality against citizens in the last 12 months	9.2	7.8	36.3	16.5	30.8	26.6
<b>Support Services Available for Victims of Violence or Abuse</b>						
Health Services	14.5	16.8	13.6	10.5	16.0	14.4
Counseling Services	7.4	10.2	6.1	9.5	6.2	7.1
Legal Support Services	13.8	10.9	12.2	11.5	12.4	12.2
Police	36.8	52.8	44.5	30.1	51.5	45.2
Other	15.7	10.4	8.8	20.6	5.7	10.1
None	9.4	2.9	9.0	8.9	7.3	7.8
DK/NR/Missing	9.7	5.0	6.8	9.2	5.8	6.8
Number of households	1,200	1,199	1,179	1,552	2,026	3,578

Regarding the justice system in the survey areas, a majority of households express a preference for formal systems of legal assistance, such as the police (33 percent) or the local court (25 percent). There are some differences by setting and corridor, with the clearest difference being that formal systems are mentioned less often in rural areas, where traditional forms of assistance, such as local elders (11 percent) are mentioned more often. An examination of the open-ended “other” responses indicates that the figure of the CASEC is particularly relevant in rural areas, being the third form of legal assistance mentioned most often.

When asked about actual cases that required an interaction with the justice system, respondents indicated that the formal and informal systems have a similar prevalence. Four percent of households had an interaction with the formal system in the past two years. Among the four percent of households that had an interaction with the court system in the past two years, 70 percent report that the legal process was fair, with households in the St. Marc Corridor reporting the highest levels of perceived fairness (82 percent).

A similar proportion of households, five percent, solved an important dispute without going to formal courts in the same period. The method of informal justice most often involves friends or family (45 percent), followed at a distance by traditional justice or a lawyer without going to court (both 10 percent). Although there appear to be some differences by corridor and setting, the sample of households that used the informal justice system is too small to establish reliable comparisons.

Table 3.2.4 Governance indicators

Percent distribution of household respondents by indicators [Haiti, 2012]

	Corridor			Setting		Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	
<b>Preferred Form of Legal Assistance</b>						
None	5.2	5.2	7.4	6.2	6.8	6.6
Church Council	4.8	5.9	4.0	5.5	4.1	4.5
Lawyer	2.7	7.5	7.0	2.1	8.3	6.5
Local Elders	15.3	7.8	2.5	11.0	3.1	5.4
Local Court	23.5	34.5	22.2	20.6	26.8	25.0
Police	33.2	30.1	33.3	22.8	36.8	32.6
Other: CASEC	11.8	7.9	4.2	17.4	1.3	6.1
Other	5.2	5.3	8.9	10.7	6.4	7.7
DK/NR/Missing	0.2	0.1	16.0	0.1	14.9	10.5
<b>Formal Justice System</b>						
Had an interaction with the court system in the last two years	4.1	5.6	4.2	4.8	4.3	4.4
Number of households	1,200	1,199	1,179	1,552	2,026	3,578
Legal process was fair <sup>1</sup>	81.6	65.7	69.4	70.7	69.6	70.0
Number of households that had an interaction in the last two years	49	67	49	78	87	165
<b>Informal Justice System</b>						
Solved an important dispute without going to formal courts in the last two years	4.2	4.5	4.7	5.0	4.5	4.6
Number of households	1,200	1,199	1,179	1,552	2,026	3,578
<b>Method of Informal Justice Used<sup>2</sup></b>						
Lawyer without going to court	9.8	5.6	10.7	15.2	6.9	9.6
Friend/Family	41.2	48.1	44.6	30.3	51.7	44.9
Formal Mediator/Arbitrator	2.0	18.5	5.4	18.9	2.3	7.6
Traditional justice	13.7	11.1	8.9	7.1	11.3	10.0
Government official	0.0	0.0	7.1	0.0	7.0	4.8
Respected member of society	5.9	0.0	5.4	2.4	5.3	4.3
Security firm	0.0	0.0	0.0	0.0	0.0	0.0
Religious leader	7.8	5.6	5.4	7.3	5.0	5.7
Other	17.6	9.3	8.9	14.0	8.3	10.1
DK/NR/Missing	2.0	1.9	3.6	4.9	2.1	3.0
Number of households that solved an important dispute without going to formal courts in the last two years	51	54	56	70	91	161

Note:

<sup>1</sup> Includes households that had an interaction with the court system in the last two years.

<sup>2</sup> Includes households that solved an important dispute without going to formal courts in the last two years.

In addition to good institutions and rule of law, good governance also requires active civic participation. The survey collected information on participation in civic organizations, contact with elected representatives and participation in elections.

One in four households participated actively in civic organizations and attended a meeting at least once in the past 12 months. The most popular civic organizations include non-church religious organizations (14 percent), particularly in urban areas (16 percent) and in the Cul-de-Sac Corridor (17 percent), as well as parents associations at school (11 percent).

Meeting an elected representative is less common, with 17 percent of households meeting a representative at least once in the past 12 months. The higher up the representative, the less common it is to meet one. For example, the local council (the Conseil d'Administration de la Section Communale, or CASEC) sits at the communal section level, the lowest level of administrative division in Haiti. Meeting with a CASEC member is relatively frequent (reported by 12 percent of surveyed households), particularly in rural areas (26 percent). On the other extreme, meeting a Senator is quite infrequent (reported by one percent of surveyed households).

Participation in the elections is determined to a large degree by registration to vote. The fact that only 67 percent of adult respondents at the household level are registered to vote put a ceiling on the actual participation rate in the last elections,<sup>27</sup> which stood at 58 percent for the survey areas. Both registration and participation are lowest in the Cul-de-Sac Corridor (64 and 54 percent, respectively). This finding is consistent with reports of low participation in Port-au-Prince due to a lack of accessible voting centers for persons displaced by the 2010 earthquake.<sup>28</sup>

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<sup>27</sup> These figures are not directly comparable with official reports of actual voter turnout. Self-reports are prone to social desirability bias and tend to be higher than actual turnout. For example, Johnston and Weisbrot (2011) estimated actual voter participation in the 2010 presidential elections at 23 percent of registered voters. The 2010 America's Barometer, on the other hand, shows a much higher self-reported turnout for the "last presidential election"—75 percent among women and 87 percent among men. Neither of these sources are in any case comparable to the baseline survey, as they cover different populations and the baseline survey asked only for participation in the "last elections" rather than participation in a specific election.

<sup>28</sup> See Johnston, J., & Weisbrot, M. (2011). *Haiti's Fatally Flawed Election*. Available at <http://www.cepr.net/documents/publications/haiti-2011-01.pdf>

**Table 3.2.5 Civic Participation**

Percent distribution of household respondents by Civil Participation indicator [Haiti, 2012]

Indicators	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
<b>Participation in Meetings of Civic Organizations<sup>1</sup></b>						
Religious organization (not including church)	7.3	7.3	17.1	9.0	15.7	13.7
Parents association at school	5.9	3.5	14.8	8.2	12.5	11.2
Community improvement committee or association	3.8	7.8	6.4	7.0	6.1	6.4
Association of professionals, merchants, manufacturers or farmers	3.0	3.4	3.0	3.6	2.8	3.1
Political party or political organization	2.3	3.2	2.5	2.0	2.9	2.6
Associations or groups of women or home makers	1.8	4.2	3.7	2.7	3.9	3.6
Total Participating in Meetings of Civic Organizations	15.2	16.6	29.9	20.5	27.0	25.1
<b>Meeting an Elected Representative<sup>2</sup></b>						
CASEC	19.0	15.8	8.6	26.4	5.3	11.5
Mayor	5.4	6.6	6.2	10.3	4.4	6.2
Deputy	4.6	5.2	3.3	5.5	3.2	3.9
Senator	1.3	2.1	1.0	1.8	1.1	1.3
Total Meeting an Elected Representative	22.2	20.7	14.2	30.0	11.1	16.7
<b>Participation in elections</b>						
Registered to vote	70.7	74.4	63.9	64.9	67.9	67.0
Voted in last elections	63.7	67.5	54.3	59.9	57.7	58.3
Number of households	1,200	1,199	1,179	1,552	2,026	3,578

Note:

<sup>1</sup> Percentage of household respondents that participated in meetings at least once a year in the past 12 months.

<sup>2</sup> Percentage of household respondents who met an elected representative in the past 12 months.

Finally, good governance requires transparency and accountability. At the household level, perceptions are most reliable when they refer to the transparency of institutions that are close and affect their daily lives. The study collected information on the perceived use of funds at the municipal level, which in the survey areas is the most immediate level of local administration.

Responses collected from adult household respondents indicate a very low level of transparency at the municipal level, with two-thirds being unable to provide a response regarding the use of municipal funds. Those who could provide a response would mention most often that municipal funds are spent in nothing in particular (26 percent) or are lost to corruption (13 percent). Education (12 percent) and roads (11 percent) were the legitimate uses mentioned most often.

**Table 3.2.6 Perceived use of municipal funds**

Percent distribution of household respondents by type of expenditure [Haiti, 2012]

Type of expenditure	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
Street cleanliness	4.3	3.9	12.8	1.4	13.3	9.8
Roads	11.1	6.8	12.6	3.0	14.7	11.2
Sports infrastructures	2.7	2.5	4.7	1.1	5.1	3.9
Other public works	4.5	2.5	8.4	2.5	8.3	6.6
Health	5.7	7.5	10.0	2.8	11.5	8.9
Education	8.7	8.8	14.3	2.6	16.5	12.4
Corruption	5.9	10.7	15.9	7.0	16.1	13.4
Salaries	3.9	3.0	7.0	2.4	7.1	5.7
Nothing	24.5	17.6	28.3	32.3	22.7	25.6
Other	4.5	6.3	10.9	7.0	9.9	9.0
DK/NR/Missing	68.7	75.8	62.2	68.7	64.7	65.9
Number of households	1,200	1,199	1,179	1,552	2,026	3,578

Note: Percents indicate the proportion of household respondents that spontaneously mentioned a type of expenditure, with up to three types accepted.

This limited level of municipal action is not for a lack of problems susceptible to public intervention. Household respondents were asked about the main problems facing their community, with unemployment (42 percent), water access (38 percent) and electricity (36 percent) being the three problems that were mentioned most often. Other problems included roads in poor condition (33 percent), lack of security (23 percent) and the economy (20 percent).

**Table 3.2.7 Main problems facing community**

Percent distribution of household respondents by type of problem [Haiti, 2012]

Problem facing community	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
Lack of water	50.2	39.5	35.1	48.9	33.6	38.1
Roads in poor condition	26.3	45.3	30.2	42.5	28.7	32.8
Lack of security	9.7	17.4	26.8	10.4	27.6	22.5
Lack of street cleanliness	4.2	5.9	14.0	1.7	14.9	11.0
Electricity	46.4	52.5	28.9	45.6	32.3	36.3
Unemployment	36.2	32.9	46.2	26.5	48.6	42.1
Lack of services	11.3	8.0	10.3	10.1	9.8	9.9
Economy	21.8	16.0	21.2	14.7	22.5	20.2
Lack of funds	25.3	15.7	16.8	20.9	16.4	17.7
Bad government	4.2	2.2	4.0	3.6	3.6	3.6
Environment	7.0	15.5	9.2	9.0	10.7	10.2
Corruption	2.4	2.7	8.8	2.0	8.6	6.7
Displaced people	0.6	0.5	1.2	0.4	1.2	1.0
Reconstruction	1.3	1.0	2.6	0.7	2.7	2.1
Housing	4.7	5.9	8.8	5.7	8.4	7.6
Other	26.9	19.7	13.1	27.0	12.0	16.4
DK/NR/Missing	4.3	7.5	8.7	8.6	7.5	7.9
Number of households	1,200	1,199	1,179	1,552	2,026	3,578

Note: Percents indicate the proportion of household respondents that spontaneously mentioned a problem, with up to three problems accepted.

### 3.3 HEALTH

This section presents findings from several areas of importance to the health of the survey population, with a focus on the most sensitive groups: young children (under five years of age) and women of reproductive age (15-49). This section covers overall illness and disability status, access to health care for women, fertility preferences and contraception, maternal and newborn health, child health, child mortality, and vaccination status and nutrition of women and children.

#### 3.3.1 HEALTH AND DISABILITY STATUS

The overall illness status in the survey population was assessed through a simple question about the prevalence of illnesses in the last 12 months. More than one in ten household members (ages six or older)<sup>29</sup> were reportedly ill at least once in the past 12 months (12 percent), with greater illness rates in rural settings (16 percent) and in the St. Marc Corridor (14 percent).

Disability status is also a key health indicator in the survey areas, particularly in those areas affected by the 2010 earthquake, which was responsible for a large number of traumatic injuries and amputations. Information on the prevalence of disabilities was collected from the household adult informant for all members of the household age six and older.<sup>30</sup> Total prevalence of disabilities is highest in the Cul-de-Sac Corridor, which was at the epicenter of the earthquake, with two percent of household members six or older having some sort of disability, mainly an amputation or permanent injury to a limb (one percent).

The overall rate of disabilities found by the baseline survey seems relatively low at two percent, compared, for example, to a rate of 15 percent in the United States (American Community Survey, 2007).<sup>31</sup> The low prevalence of disabilities found by the baseline survey may be a function of methodology. Due to questionnaire length constraints, the baseline survey collected information for all household members from the adult household respondent using a generic question about the presence of a disability followed by a list of impairments. Indeed, the overall rate is similar to the rate reported in the 2003 census,<sup>32</sup> which used a methodology similar to the current survey.

The survey also collected information on services available to persons with disabilities (PWDs). First, the survey inquired about any renovations done to the building. Only 11 percent of PWDs lived in dwellings that had been renovated to facilitate their access, with a somewhat higher rate in urban areas (13 percent) and the Northern Corridor (28 percent). The types of services for PWDs available in the community are very limited. Although all services were found only rarely, disabled persons organizations, health care and psychological care services were the ones mentioned most often, with each of them available for about four percent of PWDs. The proportion of PWDs using any such services is also small, with 12 percent for the total sample, and slightly higher rates in rural areas (15 percent).<sup>33</sup>

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<sup>29</sup> For children under six years of age, illness is more reliably identified through specific symptoms such as fever, diarrhea and respiratory problems. Because identifying the health status of young children was beyond the scope of this project, children under six were excluded from the overall measure.

<sup>30</sup> Prevalence of disabilities is often measured starting at age six. Disabilities for younger children often present themselves as a developmental delay requiring an expert assessment. See, for example, Brault, M. W. (2012). *Americans With Disabilities: 2010*. Available at <http://www.census.gov/prod/2012pubs/p70-131.pdf>

<sup>31</sup> As reported in WHO. (2011). *World Report on Disability*. Available at [http://whqlibdoc.who.int/publications/2011/9789240685215\\_eng.pdf](http://whqlibdoc.who.int/publications/2011/9789240685215_eng.pdf)

<sup>32</sup> Ibid.

<sup>33</sup> The survey asked about the types of services PWDs actually use, but sample sizes were too small to be reported.

PWDs may have reduced welfare opportunities in the absence of inclusion programs and services. Employment may be a critical route to reaching a minimum standard of living. Employment among PWDs is, however, much lower than among the general population (see section 3.1.3), with a current employment rate of 11 percent, and an even lower rate of five percent in urban areas.

<b>Table 3.3.1 Health and Disability Status</b>							
Percent distribution of household individuals age 6 or older by health and disability status [Haiti, 2012]							
Characteristic	St. Marc	Corridor			Setting		Total
		Northern	Cul-de-Sac	Rural	Urban		
<b>Health Status</b>							
<b>(12-month prevalence of illness)</b>							
Ill at least once in the last 12 months	14.1	10.6	11.9	16.3	10.1	11.9	
Not ill in the last 12 months	85.8	89.4	88.0	83.7	89.7	88.0	
Don't know/ missing	0.1	0.0	0.2	0.0	0.2	0.1	
Total	100.0	100.0	100.0	100.0	100.0	100.0	
<b>Prevalence of Disabilities</b>							
Blindness	0.2	0.3	0.5	0.2	0.5	0.4	
Deafness	0.2	0.1	0.2	0.2	0.2	0.2	
Muteness	0.1	0.0	0.0	0.0	0.0	0.0	
Amputation or permanent injury to a limb	0.2	0.4	0.7	0.8	0.5	0.6	
Mental illness	0.2	0.2	0.3	0.4	0.1	0.2	
Other disability	0.2	0.1	0.5	0.7	0.3	0.4	
Not disabled	98.8	98.6	96.8	97.4	97.5	97.5	
Don't know/ missing	0.2	0.4	0.9	0.2	0.9	0.7	
Total	100.0	100.0	100.0	100.0	100.0	100.0	
Total prevalence of disabilities	1.0	1.0	2.3	2.4	1.6	1.8	
Number of individuals	4,662	5,298	4,853	6,201	8,612	14,813	
<b>Have there been any renovations to this dwelling to facilitate access for this person?</b>							
Yes	10.4	27.6	8.0	6.5	13.3	10.7	
No	79.2	56.9	85.7	88.8	77.2	81.5	
DK/NR/Missing	10.4	15.5	6.3	4.8	9.5	7.8	
Total	100	100	100	100	100	100	
<b>Services Available in the Community</b>							
Disabled Persons Organization	2.1	3.6	4.5	4.6	2.7	4.0	
Health Care	8.3	5.4	2.3	3.4	4.9	3.9	
Psychological Care	6.3	5.4	2.3	4.0	2.7	3.6	
Physical Rehabilitation	0.0	3.6	2.3	3.4	0.0	2.3	
Economic Support	2.1	1.8	2.3	2.5	1.3	2.1	
Vocational Training	0.0	1.8	0.0	0.7	0.0	0.4	
Other	2.1	1.8	2.3	2.5	1.3	2.1	
<b>Percent Using Any Services for PWDs</b>	8.3	8.6	12.5	14.5	10.0	11.7	
Number of persons with disabilities	48	58	112	100	118	218	
<b>Employment Status of PWDs (15 and older)</b>							
Currently Employed (Last 7 Days)	19.6	9.6	9.8	18.8	5.3	10.5	
Number of persons with disabilities	46	52	102	92	108	200	

Note: Table is based on de jure household members, i.e., usual residents

### 3.3.2 WOMEN'S PROBLEMS ACCESSING HEALTH CARE

Many factors can prevent women from getting medical advice or treatment for themselves when they are sick. Information on such factors is particularly important in understanding and addressing the barriers women may face in seeking care during pregnancy and at the time of delivery.

Table 3.3.2 provides information on women’s perceptions of five potential problems as barriers to obtaining health care. Eighty-six percent of women reported at least one problem, with the main problem being getting enough money (79 percent). This was a problem particularly in urban areas (82 percent) and in the Northern Corridor (90 percent) and the St. Marc Corridor (87 percent).

Table 3.3.2 Problems in accessing health care						
Percentage of women age 15-49 who reported that they have serious problems in accessing health care for themselves when they are sick, by type of problem, [Haiti, 2012]						
Problems in accessing health care	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
Getting permission to go for treatment	29.4	26.1	27.0	26.5	27.2	27.1
Getting money for treatment	86.5	89.8	74.2	69.5	81.7	78.8
Distance to health facility	60.0	66.5	40.7	59.1	44.9	48.2
Not wanting to go alone	39.3	16.3	26.1	31.7	23.8	25.7
At least one problem accessing health care	88.5	93.8	82.9	78.3	88.1	85.8
Number of women	902	954	960	1,121	1,695	2,816

### 3.3.3 WOMEN’S HEALTH INSURANCE COVERAGE

Because getting money is the main barrier to accessing health care, women may also have difficulty having health insurance, given that they would need to pay for insurance premiums and copayments. Indeed, an overwhelming majority of women (97 percent) report not having any type of insurance coverage (97 percent), and the majority is even larger (98 percent) in rural areas. Only a small number of women report having any type of health insurance, mostly through an employer (2 percent), particularly in urban areas (2.5 percent) and the Cul-de-Sac and Northern Corridors (2 percent).

Table 3.3.3 Health insurance coverage: Women						
Percentage of women age 15-49 with specific types of health insurance coverage [Haiti, 2012]						
Health insurance coverage	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
Mutual health organization/ community-based health insurance	0.8	0.3	0.1	0.9	0.0	0.2
Health insurance through employer	0.1	1.8	2.4	0.2	2.5	2.0
Other privately purchased commercial health insurance	0.2	0.1	0.2	0.0	0.3	0.2
Other	0.1	0.1	0.4	0.5	0.2	0.3
None	98.5	96.6	96.2	97.9	96.1	96.5
DK/NR/Missing	0.3	1.5	0.8	0.6	0.9	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	902	954	960	1,121	1,695	2,816

## 3.4 FERTILITY

### 3.4.1 CURRENT FERTILITY

The current level of fertility is an important indicator because of its direct relevance to population policies and programs. Table 3.4.1 provides estimates of current levels of fertility based on the birth

history data collected from women. A three-year rate is chosen as a compromise among three criteria: to get the most current information, to reduce sampling error, and to avoid problems noted in previous surveys of the age displacement of births from five to six years before the survey.

To compute the numerator for the age-specific rates, live births are classified by (1) segment of time preceding the survey (i.e., one to 36 months), using the date of interview and date of birth; and (2) by age of the mother at the time of birth (in conventional five-year groupings), using the date of birth of the mother. The denominators for the age-specific rates are the numbers of woman-years lived in the specified five-year age intervals during the time segment.

The total fertility rate (TFR) represents the average number of children a woman would have at the end of her reproductive period if she were to follow the currently prevalent age-specific fertility rates. The TFR is calculated as the sum of the age-specific fertility rates multiplied by five (because each age group covers five years of age).

Table 3.4.1 indicates that an average woman may expect to have 2.8 births by the end of her reproductive life. The fertility levels are greater in rural areas (4.0) than in urban areas (2.4).

Overall, fertility is relatively low among adolescents, with 37 births per thousand women, reaching its peak at ages 30-34 (120 per thousand) and decreasing subsequently. Fertility peaks much earlier in rural areas, with a rate of 144 births per thousand women among 20- to 24-year-old women.

Table 3.4.1 Current fertility						
Age-specific and total fertility rate for the three years preceding the survey, by residence, [Haiti, 2012]						
Age group	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
15-19	62.9	50.7	27.6	51.9	31.5	37.1
20-24	131.8	118.9	77.1	143.9	76.2	91.0
25-29	128.0	115.7	111.3	141.9	106.4	113.9
30-34	112.4	121.0	120.6	141.1	115.1	119.8
35-39	105.3	85.8	103.1	133.2	90.4	99.7
40-44	58.6	34.2	55.4	44.3	52.9	50.6
45-49	*	*	*	*	*	*
TFR (15-49)	3.6	2.6	2.7	4.0	2.4	2.8

Notes: Age-specific fertility rates are per 1,000 women. Rates for age group 45-49 may be slightly biased due to truncation. Rates are for the period 1-36 months prior to interview.  
TFR: Total fertility rate expressed per woman  
\* Result omitted due to small sample size - less than 125 person-years of exposure (unweighted)

### 3.4.2 FERTILITY PREFERENCES

This section addresses two questions that allow an assessment of the need for contraception: (1) Does the respondent want more children? and (2) If so, how long would she prefer to wait before the next child? Bearing in mind that the underlying rationale of most family planning programs is to give couples the freedom and ability to bear the number of children they want and to achieve the spacing of births they prefer, the importance of this section is obvious.

Table 3.4.2 shows that eight percent of women want to have another child soon (within two years), while 21 percent of women want another child two or more years later. One-third of women (32 percent) do not want any more children, and another third are either undecided about having another (29 percent) or want another but have not decided when (6 percent). These needs may be different

depending on the life stage of the woman. For those women in the survey population who are married, limiting births is the priority, with 52 percent of women not wanting any more children.

Table 3.4.2 Women fertility preferences						
Percent distribution of all women and currently married women age 15-49 by desire for children [Haiti, 2012]						
	Corridor			Setting		Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	
<b>ALL WOMEN</b>						
<b>Desire for more children</b>						
Have a/another child						
Soon <sup>1</sup>	7.0	7.1	8.8	7.0	8.6	8.2
Later <sup>2</sup>	16.0	28.8	19.2	19.4	21.2	20.8
Undecided when	3.1	9.1	6.2	11.3	5.0	6.4
Undecided	34.5	12.8	33.0	25.8	30.0	29.1
Want none/no more	34.4	39.0	30.0	33.8	31.9	32.4
Sterilized <sup>3</sup>	1.2	1.3	0.8	1.2	0.8	0.9
Declared infecund	3.8	2.0	2.0	1.5	2.4	2.2
DK/NR/Missing	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	902	954	960	1,121	1,695	2,816
<b>MARRIED WOMEN <sup>4</sup></b>						
<b>Desire for more children</b>						
Have a/another child						
Soon <sup>1</sup>	6.9	4.2	7.5	4.9	7.3	6.6
Later <sup>2</sup>	8.4	15.8	9.2	10.2	11.0	10.8
Undecided when	2.7	5.1	3.8	4.8	3.7	4.0
Undecided	29.6	11.1	26.5	25.1	22.2	23.0
Want none/no more	47.0	58.3	50.0	51.0	51.9	51.7
Sterilized <sup>3</sup>	1.0	2.0	0.7	1.4	0.9	1.1
Declared infecund	4.5	3.5	2.3	2.6	3.0	2.9
DK/NR/Missing	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number married women	441	496	377	605	709	1,314
<sup>1</sup> Wants next birth within 2 years						
<sup>2</sup> Wants to delay next birth for 2 or more years						
<sup>3</sup> Includes both female and male sterilization						
<sup>4</sup> Includes currently married women and women in a union.						

The desire to limit childbearing increases with the number of living children, from 12 percent among married women with no children to 73 percent among married women with five or more children. The number of living children also appears to have a small effect on sterilization rates. Fewer than one percent of women with no children are sterilized, compared to three percent for women with four or more children.

The relationship between the desire to limit births and the number of living children may provide indications about the ideal number of children for women. Among married women with two or more children, more than half do not want any more children, which suggests that a majority of women think that two children is the ideal number.

Table 3.4.3 Women fertility preferences							
Percent distribution of currently married women age 15-49 by desire for children by number of living children [Haiti, 2012]							
	0	1	2	3	4	5 or more	Total
<b>MARRIED WOMEN<sup>4</sup></b>							
<b>Desire for more children</b>							
Have a/another child							
Soon <sup>1</sup>	17.8	8.4	3.9	2.4	0.2	2.8	6.6
Later <sup>2</sup>	30.7	18.7	3.6	3.1	0.2	0.0	10.8
Undecided when	5.1	9.0	3.4	1.9	0.5	0.0	4.0
Undecided	32.1	22.6	24.0	18.9	15.2	19.9	23.0
Want none/no more	11.8	38.1	62.2	68.7	75.2	72.6	51.7
Sterilized <sup>3</sup>	0.4	0.5	0.1	2.0	3.0	2.5	1.1
Declared infecund	2.1	2.7	2.8	3.1	5.7	2.2	2.9
DK/NR/Missing	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number married women	193	301	318	201	141	160	1,314
<sup>1</sup> Wants next birth within 2 years <sup>2</sup> Wants to delay next birth for 2 or more years <sup>3</sup> Includes both female and male sterilization <sup>4</sup> Includes currently married women and women in a union.							

### 3.4.3 CURRENT USE OF CONTRACEPTION

The level of current use of contraception is the most widely used and valuable measure of the success of a family planning program. Furthermore, this measure can be used to estimate the reduction in fertility attributable to contraception.

Table 3.4.4 presents data for the whole sample of women. The contraceptive prevalence rate (CPR) is usually defined as the percentage of currently married women who are currently using a method of contraception. Thirty-two percent of women are currently using some method of family planning, including 31 percent who are using a modern method and one percent who are using a traditional method. Male condoms (13 percent) and injectables (12 percent) are the most prevalent methods.

Current use of contraception is higher in rural areas (36 percent), a difference that is driven mainly by the greater use of injectables (17 percent). The greater use of injectables in rural areas is indeed consistent with preliminary data from the 2011 DHS.<sup>34</sup> Contraception use is lowest in the St. Marc Corridor, where 72 percent of women are not currently using any method.

The comparison of fertility preferences and current use of contraception suggests an unmet need for long-term contraceptive services to limit births. Even though 52 percent of married women and 32 percent of unmarried women indicated that they want no more children, access to long-term contraceptive methods is relatively low, with about 14 percent of women using long-term methods such as sterilization, an intrauterine device (IUD) or implants.

<sup>34</sup> Available at <http://www.measuredhs.com/pubs/pdf/PR22/PR22.pdf>

Table 3.4.4 Current use of contraception

Percent distribution of women age 15-49 by contraceptive method currently used, [Haiti, 2012]

	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
<b>Current use of contraception</b>						
<b>Any method</b>	<b>28.4</b>	<b>32.4</b>	<b>31.9</b>	<b>36.3</b>	<b>30.2</b>	<b>31.6</b>
<b>Any modern method</b>	<b>27.0</b>	<b>30.9</b>	<b>31.2</b>	<b>35.0</b>	<b>29.3</b>	<b>30.6</b>
<b>Modern method</b>						
Female sterilisation	1.2	1.2	0.7	1.1	0.8	0.9
Male sterilisation	0.0	0.1	0.1	0.1	0.1	0.1
IUD	0.0	0.4	0.7	0.2	0.7	0.6
Implants	0.2	0.3	0.5	0.3	0.4	0.4
Injectables	11.5	16.8	10.8	17.2	10.5	12.1
Pill	2.2	1.3	2.7	1.8	2.5	2.4
Male condom	10.6	9.2	14.4	12.9	12.9	12.9
Diaphragm	0.1	0.0	0.0	0.0	0.0	0.0
Female condom	0.9	0.2	0.5	0.2	0.5	0.5
Spermicide	0.0	0.0	0.0	0.0	0.0	0.0
LAM	0.2	1.5	0.4	1.1	0.4	0.6
Other	0.1	0.0	0.5	0.1	0.5	0.4
<b>Any traditional method</b>	<b>1.3</b>	<b>1.5</b>	<b>0.8</b>	<b>1.3</b>	<b>0.9</b>	<b>1.0</b>
<b>Traditional method</b>						
Rhythm	0.0	1.0	0.1	0.5	0.2	0.2
Withdrawal	1.3	0.5	0.6	0.8	0.6	0.7
Other	0.0	0.1	0.1	0.1	0.1	0.1
<b>Not currently using</b>	<b>71.6</b>	<b>67.6</b>	<b>68.1</b>	<b>63.7</b>	<b>69.8</b>	<b>68.4</b>
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	902	954	960	1,121	1,695	2,816

Note: If more than one method is used, only the most effective method is considered in this tabulation  
LAM = Lactational amenorrhoea method

### 3.5 MATERNAL AND NEWBORN HEALTH

This section presents findings from several areas of importance to reproductive and women's health—i.e., antenatal, delivery and postnatal care; and general access to health services. Information on antenatal, delivery and postnatal care is of great value in identifying subgroups of women who do not utilize such services and is useful in planning for improvements in service delivery.

Information on maternal and newborn health was obtained from women who gave birth in the five years preceding the survey. Among women with two or more live births during the five-year period, data refer to the most recent birth only.

#### 3.5.1 ANTENATAL CARE

Antenatal care (ANC) from a skilled provider is important to monitoring the pregnancy and reducing the risk of morbidity for mother and baby during pregnancy and delivery. The majority of women in the survey population who received ANC were seen by a skilled provider, either a doctor (64 percent) or a nurse (19 percent). Doctors were the most frequent ANC providers in urban areas (70 percent) and in the Cul-de-Sac Corridor (74 percent).

Twelve percent of women reported not receiving any ANC, with the higher rates in rural areas and in the St. Marc Corridor (both 18 percent).

Table 3.5.1 Antenatal care

Percent distribution of women age 15-49 who had a live birth in the five years preceding the survey by antenatal care (ANC) provider during pregnancy for the most recent birth and the percentage receiving antenatal care from a skilled provider for the most recent birth. [Haiti, 2012]

Antenatal care provider	Corridor			Setting		Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	
Doctor	37.8	49.2	74.1	46.5	70.4	63.7
Nurse	41.6	31.5	9.5	28.8	14.7	18.7
Midwife	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary nurse/midwife	0.0	0.0	0.0	0.0	0.0	0.0
Other health worker	0.0	0.0	0.0	0.0	0.0	0.0
Community health worker	0.0	0.0	1.4	3.1	0.0	0.9
Traditional birth attendant with first aid kit	0.2	0.0	0.2	0.5	0.0	0.1
Traditional birth attendant without first aid kit	0.0	0.0	0.0	0.0	0.0	0.0
Traditional doctor	0.0	0.0	0.0	0.0	0.0	0.0
Friend or family	0.0	0.0	0.0	0.0	0.0	0.0
Other non-health personnel	0.2	0.0	0.0	0.1	0.0	0.0
DK/NR/Missing	2.1	6.7	4.4	3.5	5.2	4.7
No ANC	18.1	12.6	10.4	17.5	9.7	11.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Percentage receiving antenatal care from a skilled provider <sup>1</sup>	79.4	80.7	83.6	75.3	85.1	82.4
Number of women	364	418	344	498	628	1,126

Note: If more than one source of ANC was mentioned, only the provider with the highest qualifications is considered in this tabulation.

<sup>1</sup> Skilled provider includes doctor, nurse, midwife and auxiliary nurse/midwife

Regular antenatal care is helpful in identifying and preventing problems during pregnancy. WHO recommends that a woman should have at least four ANC visits, although in the event of any complications, more frequent visits or admission to a health facility may be necessary.

Table 3.5.2 presents information on the final number of antenatal visits for the most recent birth in the five years preceding the survey. The data show that 25 percent of pregnant women did not have any ANC visits during their entire pregnancy, four percent only had one, five percent had two, 12 percent had three, and 54 percent had the recommended four or more ANC visits. Urban women (57 percent) are more likely than rural women (48 percent) to have had four or more ANC visits. Women in the Northern Corridor (57 percent) or Cul-de-Sac Corridor (54 percent) are more likely to have four or more ANC visits than those in the St. Marc Corridor (49 percent).

**Table 3.5.2 Number of antenatal care visits**

Percent distribution of women age 15-49 who had a live birth in the five years preceding the survey by the final number of antenatal care (ANC) visits for the most recent live birth [Haiti, 2012]

Number of ANC visits	Corridor			Setting		Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	
None	29.6	22.8	25.0	28.8	23.0	25.1
1	2.6	1.3	5.8	5.8	3.0	4.0
2	8.1	5.6	4.0	4.6	5.4	5.1
3	11.1	13.8	11.2	12.8	11.4	11.9
4+	48.5	56.5	54.0	48.1	57.2	53.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	364	418	344	498	628	1,126

Note: DK/NR/Missing responses excluded.

To assess ANC services, mothers in the survey were asked a number of questions about the care they received during pregnancy for their most recent live birth in the five years preceding the survey.

Nutritional deficiencies such as anemia are often exacerbated during pregnancy because of the additional nutrient demands associated with fetal growth. Iron status can be enhanced with iron supplements, improving women's diets, using a cast iron skillet for cooking, and controlling parasites and malaria. Iron supplementation is necessary for pregnant women because their needs are usually too high to be met solely by food intake. Pregnant women are advised to take an iron tablet daily throughout their pregnancy and lactating period. Among women with a live birth in the past five years, 64 percent took iron/folic acid tablets, although only 10 percent took them for the minimum recommended 90 days.

Tetanus toxoid injections are given to women during pregnancy to protect infants from neonatal tetanus, an important cause of infant death that is due primarily to unsanitary conditions at childbirth. Full protection is considered to be provided to an infant if the mother received two injections during the pregnancy of her last birth. Fewer than half of all mothers (47 percent) received two or more injections during their last pregnancy.

The content of ANC is important in judging its value. Certain items of care were selected for inclusion in the questionnaire to indicate the level of the care required. Pregnancy complications are an important source of maternal and child mortality and morbidity, and thus information on the signs of complications should be routinely included in ANC. Fewer than half (44 percent) of mothers who received ANC reported that they were informed about pregnancy complications during an antenatal visit.

Nearly all women received routine checks during their ANC visits. Ninety-six percent of pregnant women who sought ANC had their blood pressure taken. Ninety-two percent and 93 percent of women had urine and blood taken for testing, respectively.

About 85 percent of women were offered an acquired immune deficiency syndrome (AIDS) test during their ANC visits and received the results of this test. This is an important test, as AIDS can be transmitted from mother to child during the pregnancy and through breastfeeding, and the risk of transmission can be reduced by taking specific drugs during pregnancy.

**Table 3.5.3 Components of antenatal care**

Among women age 15-49 with a live birth in the five years preceding the survey, percentage receiving specific antenatal services [Haiti, 2012]

Components of antenatal care	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
<b>Among women with a live birth in the past five years, the percentage who during the pregnancy for their last birth</b>						
Took iron/folic acid tablets	55.0	66.2	65.2	47.5	70.6	64.2
Percentage receiving two or more tetanus injections during last pregnancy	46.6	59.8	41.6	44.5	47.3	46.5
Percentage of women taking iron and folic acid for more than 90 days	18.7	13.9	7.4	3.1	13.1	10.3
Number of women with a live birth in the past five years	364	418	344	498	628	1,126
<b>Among women receiving antenatal care (ANC) for the most recent live birth in the five years preceding the survey, percentage receiving specific antenatal services</b>						
Informed of signs of pregnancy complications	59.0	43.6	42.1	34.1	48.2	44.4
Blood pressure measured	90.8	95.1	97.3	90.3	98.1	96.0
Urine sample taken	88.5	90.8	94.2	83.2	96.2	92.7
Blood sample taken	90.0	91.4	94.6	86.4	95.8	93.3
Were tested and received their AIDS test	67.2	82.2	89.0	71.5	89.7	84.8
Number of women with ANC for their most recent birth	297	370	303	406	564	970

### 3.5.2 DELIVERY CARE

Deaths arising from complications of pregnancy are less likely to occur if the delivery is held in a health facility. If complications arise during delivery, a skilled attendant can manage the complication or refer the mother early to the next level of care.

Table 3.5.4 presents the percent distribution of mothers who had a live birth in the five years preceding the survey, by place of the last delivery. Forty-one percent of births took place in a public hospital, with an additional four percent in a public health center, four percent in other facility within the public sector, and five percent in a private hospital. Births at home are still frequent, with 35 percent of women delivering in their own homes. Births at home are much more frequent in rural areas (57 percent) and in the St. Marc Corridor (55 percent) and Northern Corridor (41 percent).

Table 3.5.4 Place of delivery

Percent distribution of the most recent birth in the five years preceding the survey by place of delivery [Haiti, 2012]

Place of delivery	Corridor			Setting		Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	
<b>Place of Delivery</b>						
<b>Home</b>						
Your home	54.8	41.0	29.6	57.4	26.9	35.4
Other home	3.2	1.3	0.8	1.9	0.9	1.2
<b>Public sector</b>						
Govt. Hospital	27.7	38.7	44.3	16.6	50.3	40.9
Govt. Health Center	5.7	0.7	4.3	6.4	2.5	3.6
CAL/CSL/Dispensary	2.3	0.0	1.0	0.6	1.0	0.9
Other public sector	3.6	0.7	4.6	2.1	4.1	3.6
<b>Private Med. Sector</b>						
Pvt. Hospital/ Clinic	0.6	2.5	6.6	2.0	6.0	4.9
Other private Med. Sector	0.2	0.7	0.4	0.6	0.4	0.4
Other	12.4	2.6	12.4	6.9	11.3	10.0
DK/NR/Missing	0.0	0.0	1.6	0.0	1.4	1.0
Number of women	364	418	344	498	628	1,126

Obstetric care from a health professional during delivery is recognized as critical for the reduction of maternal and neonatal mortality. Children delivered at home are more likely to be delivered without assistance from a trained provider, whereas children delivered at a health facility are more likely to be delivered by a trained health professional.

Table 3.5.5 shows delivery assistance by type of provider. About two-thirds of births take place with the assistance of a skilled birth attendant (SBA), including doctors (42 percent), nurses (17 percent) or midwives (3 percent). Traditional birth attendants (“matrones”), either with a first aid kit (16 percent) or without a first aid kit (11 percent), are still relatively frequent, particularly in rural areas where the two combined assist about half of all women.

**Table 3.5.5 Assistance during delivery**

Percent distribution of live births in the five years preceding the survey by person providing assistance during delivery [Haiti, 2012]

Assistance during delivery	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
<b>Health personnel</b>						
Doctor	20.0	28.9	51.5	18.2	51.5	42.2
Nurse	22.1	21.1	13.7	14.0	17.5	16.5
Midwife	6.9	1.6	2.1	5.9	1.3	2.6
Auxiliary	0.0	0.0	0.0	0.0	0.0	0.0
Other health personnel	0.0	0.2	1.4	0.0	1.3	0.9
<b>Other person</b>						
Community health worker	1.3	0.5	1.4	3.2	0.4	1.1
Traditional birth attendant with first aid kit	29.0	22.2	10.8	32.5	9.3	15.8
Traditional birth attendant without first aid kit	16.8	10.8	9.3	15.8	8.5	10.6
Traditional doctor	0.4	8.0	1.7	3.8	2.8	3.1
Friend or family	2.5	0.3	1.7	2.1	1.3	1.5
Other	0.2	0.2	0.8	0.1	0.7	0.6
DK/NR/Missing	0.8	6.2	5.6	4.5	5.4	5.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Percentage assisted by a skilled provider <sup>1</sup>	48.9	51.8	68.7	38.1	71.6	62.2
Number of women	364	418	344	498	628	1,126

Note: Includes only the most recent birth in the five years preceding the survey. If the respondent mentioned more than one person attending during delivery, only the most qualified person is considered in this tabulation.

<sup>1</sup> Skilled provider includes doctor, nurse, midwife, auxiliary and other health personnel

### 3.5.3 POSTNATAL CARE FOR MOTHERS AND CHILDREN

The postpartum period is particularly important for women because during this period they may develop serious, life-threatening complications. Evidence has shown that a large proportion of deaths occur during this period, with postpartum hemorrhage being an important cause. A postnatal care visit is an ideal time to educate a new mother on how to care for herself and her newborn. Therefore, it is highly recommended that women receive at least three postnatal checkups, the first within 24 hours of delivery.

Postnatal checkups were, however, rare in the survey areas. Sixty-five percent of women reported not receiving any postnatal checkup. Among those who received a checkup within the first 41 days after delivery, most received it between seven and 41 days after delivery. Only four percent received a postnatal checkup within the first 48 hours, and nine percent within the first 72 hours.

**Table 3.5.6 Timing of first postnatal checkup for the mother**

Among women age 15-49 giving birth in the five years preceding the survey, the percent distribution of the mother's first postnatal checkup for the last live birth by time after delivery, and the percentage of women with a live birth in the five years preceding the survey who received a postnatal checkup in the first two days after giving birth [Haiti, 2012]

	Corridor		Setting		Total	
	St. Marc	Northern	Cul-de-Sac	Rural		Urban
<b>Timing of first postnatal checkup for the mother</b>						
Less than 1 day	0.0	0.0	0.4	0.0	0.3	0.2
1-2 days	2.5	2.8	4.1	1.8	4.3	3.6
3-6 days	9.2	9.5	9.7	9.7	9.5	9.6
7-41 days	24.2	19.3	20.3	20.3	20.6	20.5
Don't know/ missing	1.5	1.0	1.2	1.1	1.2	1.2
No posnatal checkup <sup>1</sup>	62.6	67.5	64.4	67.1	64.1	64.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Percentage of women with a postnatal checkup in the first two days (48 hours) after birth	2.5	2.8	4.4	1.8	4.6	3.8
Percentage of women with a postnatal checkup in the first three days (72 hours) after birth	9.2	8.5	9.7	7.3	10.1	9.3
Number of women	364	418	344	498	628	1,126

<sup>1</sup> Includes women who received a checkup after 41 days

The skill level of the provider who performs the first postnatal checkup also has important implications for maternal and neonatal health. Table 3.5.7 shows that two percent of women received postnatal care from a doctor, and one percent from a nurse.

Table 3.5.7 Type of provider of first postnatal checkup for the mother

Among women age 15-49 giving birth in the five years preceding the survey, the percent distribution by type of provider of the mother's first postnatal health check in the two days after the last live birth, [Haiti, 2012]

	Corridor			Setting		Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	
<b>Provider of first postnatal checkup for the mother</b>						
<b>Health personnel</b>						
Doctor	1.5	0.5	2.3	0.6	2.2	1.8
Nurse	0.4	1.0	1.2	0.9	1.1	1.0
Midwife	0.4	0.3	0.0	0.2	0.1	0.1
Auxiliary	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0
<b>Other person</b>						
Community health worker	0.0	0.0	0.0	0.0	0.0	0.0
Traditional birth attendant with first aid kit	0.0	0.0	0.2	0.0	0.2	0.1
Traditional birth attendant without first aid kit	0.0	0.0	0.0	0.0	0.0	0.0
Tradicional doctor	0.0	0.2	0.0	0.0	0.1	0.0
Friend or family	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0
DK/NR/Missing	0.2	0.8	0.8	0.1	1.0	0.7
No postnatal checkup in the first two days after the birth	97.5	97.2	95.6	98.2	95.4	96.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	364	418	344	498	628	1,126

Note: If more than one provider was mentioned, only the provider with the highest qualifications is considered in this tabulation.

## 3.6 CHILD HEALTH

### 3.6.1 INFANT AND CHILD MORTALITY

Infant and child mortality rates are important indicators of a country's socioeconomic development and quality of life, as well as health status. Measures of childhood mortality also contribute to a better understanding of the progress of population and health programs and policies. Analyses of mortality measures are useful in identifying promising directions for health and nutrition programs and improving child survival efforts.

The mortality rates presented in this section are computed from information gathered in the birth history section of the women's questionnaire. Women were asked for the number of births they had. A detailed history of all births was gathered in chronological order, starting with the first birth. Women were asked whether a birth was single or multiple, the sex of the child, the date of birth (month and year), survival status, the age of the child on the date of the interview if alive, and, if not alive, the age at death of each child born. Because the primary causes of childhood mortality change as children age—from biological factors to environmental factors—childhood mortality rates are expressed by age categories and are customarily defined as follows:

- A. **Neonatal mortality (NN):** the probability of dying within the first month of life.
- B. **Postneonatal mortality (PNN):** the difference between infant and neonatal mortality.
- C. **Infant mortality (Iq0):** the probability of dying between birth and the first birthday.

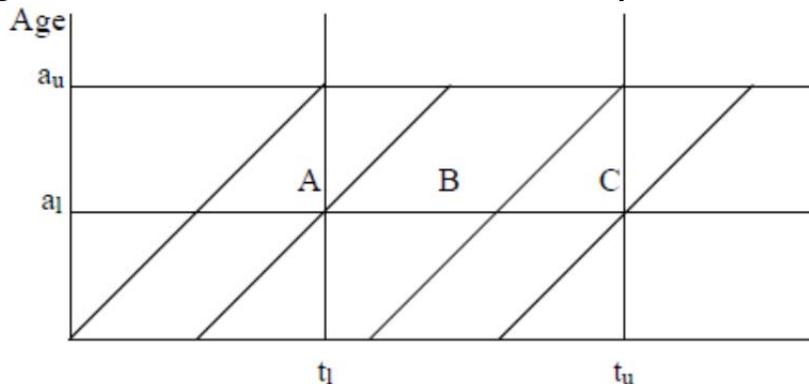
- D. **Child mortality (4q1)**: the probability of dying between exact ages one and five.
- E. **Under-five mortality (5q0)**: the probability of dying between birth and the fifth birthday.

Rates of childhood mortality are expressed as deaths per 1,000 live births, except in the case of child mortality, which is expressed as deaths per 1,000 children surviving to age one.

This survey follows the DHS methodology to compute mortality rates, which is, in turn, based on a synthetic cohort life table approach in which mortality probabilities for small age segments based on real cohort mortality experience are combined into the more common age segments. This approach allows full use of the most recent data and is also specific for time periods. Mortality rates are computed in the following steps:

1. Component death probabilities are first tabulated. Then the component death probabilities are combined into the mortality rates. The component death probabilities are calculated for age segments 0, 1-2, 3-5, 6-11, 12-23, 24-35, 36-47, and 48-59 months of completed age.
2. Each component death probability is defined by a time period and an age interval. Within these two parameters, three birth cohorts of children are included, as indicated in Figure 3.

**Figure 3. Birth cohorts of children for each component death probability**



Note:  $a_u$  = lower limit of age interval;  $a_l$  = upper limit of age interval;  $t_l$  = lower limit of time period;  $t_u$  = upper limit of time period

Source: Guide to DHS Statistics 94 Updated September 2006

3. One cohort of children is completely included and two are partially included. If the upper and lower limits of the age interval are given by  $a_l$  and  $a_u$ , respectively, and the upper and lower limits of the time period are given by  $t_u$  and  $t_l$ , respectively, then the three cohorts are defined as children born between dates  $t_l - a_u$  and  $t_l - a_l$  (cohort A),  $t_l - a_l$  and  $t_u - a_u$  (cohort B) and  $t_u - a_u$  and  $t_u - a_l$  (cohort C).
4. Cohorts A and C are only partially exposed to mortality between ages  $a_l$  and  $a_u$  during time period  $t_l$  to  $t_u$ . Therefore, account needs to be taken of the partial exposure. Because of the small age intervals of the component probabilities, the assumption is made that the exposure to mortality and deaths of birth cohorts A and C are well represented by taking one-half of the total exposure and one-half of the deaths (with the exception noted below).
5. Numerators: The sum of one-half of the deaths between ages  $a_l$  and  $a_u$  among children in cohort A, plus all deaths between ages  $a_l$  and  $a_u$  among children in cohort B, plus one-half of the deaths between ages  $a_l$  and  $a_u$  among children in cohort C.

6. Denominators: The sum of one-half of the survivors at age  $a_l$  among children in cohort A, plus all of the survivors at age  $a_l$  among children in cohort B, plus one-half of the survivors at age  $a_l$  among children in cohort C.
7. Component death probabilities are calculated by dividing the numerator for each age range and time period by the denominator for that range and period.
8. Special exception: For the time period that ends with the date of the survey, numerators are calculated as the sum of one-half of the deaths between ages  $a_l$  and  $a_u$  among children in cohort A, plus all of deaths between ages  $a_l$  and  $a_u$  among children in cohort B, plus all of the deaths between ages  $a_l$  and  $a_u$  among children in cohort C. This change is because all of the deaths reported in the survey for cohort C for this time period represent one-half of the deaths that will have occurred to the cohort between ages  $a_l$  and  $a_u$ .

Typically, mortality rates are calculated for five-year periods preceding the date of the survey. To provide stability in estimates for smaller subgroups, the 10-year period before the survey is used. To calculate the component death probabilities for the 10-year period, the numerators (deaths) for the two five-year periods are summed, as are the denominators (survivors), before dividing the numerators by the denominators. The DHS recommendation is that each rate be based on at least 500 unweighted cases exposed in any age group that contributes to the rate. Using a 10-year period, the minimum number of cases for any age group in the current sample is 519, even after breaking up into corridors.

Table 3.6.1 shows childhood mortality rates for the 10-year period preceding the survey. This reference period is used to minimize sampling errors associated with mortality estimates and to ensure a sufficient number of cases for statistical reliability.

Neonatal mortality is 22 deaths per 1,000 live births, which means that one of every 46 children dies within the first month of life. The infant mortality rate in the 10 years preceding the survey is 38 deaths per 1,000 live births, and the under-five mortality rate for the same period is 55 deaths per 1,000 live births. This means that one in every 26 children in the survey areas dies before reaching age 1, while one in every 18 dies before age 5.

Early childhood mortality rates are lower, overall, in urban areas and in the Cul-de-Sac Corridor. For example, under-five mortality in rural areas is 69 deaths per 1,000 live births, compared with 48 deaths per 1,000 live births in urban areas. The St. Marc Corridor shows the worst overall early childhood mortality rates, although neonatal mortality is similar in the Northern Corridor.

Mortality indicator	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
Neonatal mortality (NN)	26.8	27.6	18.2	25.4	20.1	21.8
Postneonatal mortality (PNN) <sup>1</sup>	31.0	11.9	14.6	19.5	14.7	16.3
Infant mortality (1q0)	57.8	39.5	32.7	44.9	34.8	38.1
Child mortality (4q1)	37.7	21.2	10.9	25.2	13.8	17.5
Under-5 mortality (5q0)	93.3	59.8	43.3	69.0	48.2	55.0

<sup>1</sup> Computed as the difference between the infant and neonatal mortality rates

### 3.6.2 VACCINATION OF CHILDREN

Information on childhood immunizations was obtained for the last living child under five years of age. Mothers were asked to recall which vaccines the child had received. Mothers were specifically asked whether the child had received the Bacille-Calmette-Guerin (BCG); measles; diphtheria, pertussis, and tetanus (DPT); and polio vaccines, including the number of doses of polio and DPT vaccines. Because immunization rates are based on maternal recall and vaccination cards were not examined, immunization rates may be underestimated.

Information on vaccination coverage among children age 12-23 months is shown in Table 3.6.2. Given that children should have received all vaccinations and doses listed in the table during the first year of life, the age group 12-23 months has been selected to show the proportion of children vaccinated at any time before the interview according to the proportion whose mothers reported that the child had been given each of the vaccines.

Overall, nine percent of children age 12-23 months were fully immunized by the time of the survey. Regarding specific vaccines, 86 percent of children age 12-23 months had received the BCG immunization, and 67 percent had been immunized against measles.

Coverage of the first dose of the DPT and polio vaccines was relatively high (69 percent and 67 percent, respectively); however, only 26 percent and 13 percent of these children went on to receive the third dose of DPT and polio, respectively.

Table 3.6.2 Vaccinations						
Percentage of children age 12-23 months who received specific vaccines at any time before the survey [Haiti, 2012]						
Vaccinations	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
BCG	91.7	89.7	83.6	80.3	87.7	85.8
DPT						
1	83.3	79.4	63.8	66.9	70.0	69.2
2	50.0	48.5	36.2	42.9	39.3	40.3
3	29.6	39.2	21.6	32.3	23.5	25.8
Polio <sup>1</sup>						
0	65.7	79.4	63.8	61.7	68.7	66.9
1	79.6	69.1	56.9	67.4	60.3	62.1
2	46.3	46.4	33.6	46.1	34.6	37.6
3	13.9	23.7	10.3	27.5	8.2	13.2
Measles	74.1	72.2	63.8	64.3	67.5	66.7
All basic vaccinations <sup>2</sup>	10.2	21.6	5.2	21.0	4.5	8.8
Number of children	91	74	74	104	135	239

Note: Only includes youngest child 12-23 months currently living with the mother.

<sup>1</sup> Polio 0 is the polio vaccination given at birth

<sup>2</sup> BCG, measles, and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth)

### 3.7 NUTRITION OF CHILDREN AND WOMEN

This chapter covers nutritional concerns for children and women. The section on women covers the nutritional status and dietary diversity of women 15 to 49 years of age. The section on children covers

anthropometric assessment of the nutritional status of children under five years of age; infant and young child feeding practices (IYCF), including breastfeeding and feeding with solid/semisolid foods; and diversity of foods fed.

Note that for children, coverage of the sample differed, depending on the indicator. For anthropometry, all children 0-59 months in the household were eligible. However, for IYCF, only the youngest living child of the selected woman was included. This means that for IYCF the sample does not cover the entire population of children: the household roster identifies 790 children under 2, whereas information on IYCF was collected for 547 children under two years of age, or about 69 percent of the children in the target group.

### **3.7.1 NUTRITIONAL STATUS OF CHILDREN**

Measurements of height and weight were obtained for eligible children. Each team of interviewers carried a scale and measuring board. Measurements were made using lightweight Seca scales (model 874 with digital screens) designed and manufactured under the authority of UNICEF. The measuring boards employed were specially produced by Shorr Productions for use in survey settings. Children under age two were measured lying down on the board (recumbent length), and standing height was measured for all other children.

Anthropometric indicators for young children provide outcome measures of nutritional status. Both height (length) and weight measurements are obtained for each child. Employing this information, the following standard indices are used to describe the nutritional status of children:

- Height-for-age (stunting)
- Weight-for-height (wasting)
- Weight-for-age (underweight)

These measures are compared with the 2006 WHO Child Growth Standards that are based on an international sample (from Brazil, Ghana, India, Norway, Oman, and the USA) of ethnically, culturally and genetically diverse, healthy children living under optimum conditions conducive to achieving a child's full genetic growth potential. The use of the 2006 WHO Child Growth Standards over the previously used 1977 National Center for Health Statistics (NCHS)/Centers for Disease Control and Prevention (CDC)/WHO Reference is due to the prescriptive rather than descriptive nature of the WHO Standards versus the NCHS Reference. The 2006 WHO Child Growth Standards identifies the breastfed child as the normative model for growth and development and documents how children should grow under optimum conditions and infant feeding and child health practices.

The use of the 2006 WHO Child Growth Standards is based on the finding that well-nourished children of all population groups for which data exist follow very similar growth patterns before puberty. The internationally based standard population serves as a point of comparison, facilitating the examination of differences in the anthropometric status of subgroups in a population and of changes in nutritional status over time. In any large population, there are natural variations in height and weight. These variations approximate a normal distribution, with 2.2 percent of the population expected to be between two and three SDs below the median and 0.1 percent of the population expected to be below three SDs.

The height-for-age index presented in Table 3.7.1 provides an indicator of linear growth retardation among children. Children who are less than two SDs below the median of the WHO Standards population in terms of height-for-age may be considered short for their age ("stunted") or chronically malnourished. Severe linear growth retardation ("stunting") reflects the outcome of a failure to receive adequate nutrition over a number of years and is also affected by recurrent and chronic illness. Height-for-age, therefore, represents a measure of the long-term effects of malnutrition in a population and

does not vary appreciably according to the season of data collection. Stunted children are not immediately obvious in a population. For example, a stunted three-year-old child could look like a well-fed two-year old. A total of 19 percent of children under five years of age in the survey population showed signs of moderate and severe stunting (less than two SDs below the median), with nine percent showing severe stunting (three SDs below the median). Rates of moderate and severe stunting were greater in rural areas (21 percent), among male children (23 percent) and in the St. Marc Corridor (25 percent).

The weight-for-height index looks at body mass in relation to body length. Children who are less than two SDs below the median of the Standards population in terms of their weight-for-height may be considered too thin (“wasted”), i.e., acutely malnourished. Wasting represents the failure to receive adequate nutrition in the period immediately before the survey and may be the result of recent illness episodes, especially diarrhea, or of seasonal variations in food supply. A total of nine percent of children under five years of age in the survey population showed signs of moderate and severe wasting (less than two SDs below the median), with four percent showing severe wasting (three SDs below the median). Rates of moderate and severe wasting were greater in urban areas (10 percent), among male children (10 percent) and in the Northern Corridor (12 percent).

Weight-for-age takes into account both chronic and acute malnutrition and is often used to monitor nutritional status on a longitudinal basis. Children who are less than two SDs below the median of the Standards population in terms of their weight-for-age may be considered underweight. A total of 11 percent of children under five years of age in the survey population showed signs of being moderately or severely underweight (less than two SDs below the median), with three percent being severely underweight (three SDs below the median). The prevalence of children who are moderately or severely underweight was greater among male children (12 percent) and in the St. Marc Corridor (12 percent).

Nutritional status	Corridor			Setting		Gender		Total
	St. Marc	Northern	Cul-de-sac	Rural	Urban	Male	Female	
Height-for-age (Stunting)								
Percentage below -2SD <sup>1</sup>	25.2	18.3	17.4	20.8	17.6	22.5	15.3	18.7
Percentage below -3SD	11.5	9.1	8.1	9.3	8.5	10.5	7.3	8.8
Mean z-score (SD)	-0.6	-0.5	-0.7	-0.7	-0.6	-0.7	-0.5	-0.6
Weight-for-height (Wasting)								
Percentage below -2SD <sup>1</sup>	10.1	12.0	7.6	7.7	9.6	10.4	7.8	9.0
Percentage below -3SD	4.8	5.7	3.3	3.6	4.4	5.3	3.1	4.1
Mean z-score (SD)	-0.1	-0.3	-0.1	-0.1	-0.2	-0.2	-0.1	-0.2
Weight-for-age (Underweight)								
Percentage below -2SD <sup>1</sup>	11.8	9.6	10.5	10.9	10.3	11.9	9.2	10.5
Percentage below -3SD	3.6	2.2	2.9	4.1	2.1	4.1	1.7	2.8
Mean z-score (SD)	-0.4	-0.5	-0.5	-0.5	-0.4	-0.5	-0.4	-0.5
Number of children	416	508	419	620	723	630	713	1343

Note: Each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards. Table is based on children with valid dates of birth (month and year) and valid measurement of both height and weight.

<sup>1</sup> Includes children who are below -3 standard deviations from the WHO Child Growth Standards median

### 3.7.2 BREASTFEEDING STATUS

UNICEF and WHO recommend that children be exclusively breastfed (no other complementary liquid or solid food or plain water) during the first six months of life and that children be given solid/semisolid complementary food in addition to continued breastfeeding beginning when the child is six months old. Introducing breast milk substitutes to infants before age six months can contribute to breastfeeding failure. Substitutes, such as formula, other kinds of milk, and porridge, are often watered down and provide too few calories.

After six months, a child requires adequate complementary foods for normal growth. Lack of appropriate complementary feeding may lead to malnutrition and frequent illnesses, which in turn may lead to death. However, even with complementary feeding, the child should continue to be breastfed for two years or more.

Table 3.7.2 shows the percentage of youngest children 6-23 months and under six months by breastfeeding status and the percentage currently breastfeeding. Breastfeeding in the survey areas is frequent, with only 33 percent of children 6-23 months not breastfeeding. The majority of children 6-23 months are breastfeeding and consuming complementary foods (52 percent) or other liquids.

Although a great majority of children under six months are breastfed (88 percent), exclusive breastfeeding is not widespread. Only 23 percent are exclusively breastfed. An additional six percent are consuming only breast milk and water, and 45 percent are breastfeeding and consuming complementary foods. Prevalence of exclusive breastfeeding is slightly greater in the St. Marc Corridor (28 percent) and the Northern Corridor (27 percent).

The prevalence of exclusive breastfeeding is lower than the rate found by the 2012 Haiti DHS, which estimated rates of exclusive breastfeeding at 40 percent.<sup>35</sup> It must be noted that the sample of the baseline survey is not directly comparable to the DHS sample: the DHS sample is nationally representative, whereas the baseline survey sample is dominated by three major urban areas (Port-au-Prince, Saint-Marc and Cap-Haïtien). The baseline survey also covered rural areas, but many of them were peri-urban, surrounding the major cities in the sample. In summary, the final sample for the baseline survey was overall more urban than the DHS sample.

Having noted this, the lower rates of exclusive breastfeeding appear to be driven by lower breastfeeding rates (88 percent in the baseline survey versus 96 percent in DHS) and higher rates of children being breastfed and given other milks (12 percent in the baseline survey versus four percent in DHS) or complementary foods (45 percent in the baseline survey versus 41 percent in DHS).

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<sup>35</sup> Preliminary report available at <http://www.measuredhs.com/pubs/pdf/PR22/PR22.pdf>

Table 3.7.2 Breastfeeding status of children 6-23 months and 0-5 months

Percent distribution of children 6-23 months and under 6 months who are living with their mother, by breastfeeding status [Haiti, 2012]

	Corridor			Setting		Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	
<b>Children 6-23 months</b>						
<b>Breastfeeding status</b>						
Not breastfeeding	28.6	28.5	35.5	28.5	35.1	33.4
Exclusively breastfed	0.0	1.9	3.8	0.4	3.9	3.0
Breastfeeding and consuming plain water only	1.3	1.9	2.2	3.8	1.4	2.0
Breastfeeding and consuming non-milk liquids <sup>1</sup>	2.6	1.9	0.5	2.2	0.6	1.0
Breastfeeding and consuming other milk	1.9	3.8	1.1	1.9	1.6	1.7
Breastfeeding and consuming complementary foods	61.0	52.5	49.7	60.1	48.5	51.6
DK/NR/Missing	4.5	9.5	7.1	3.1	8.8	7.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total currently breastfeeding	66.9	62.0	57.4	68.4	56.1	59.4
Number of children 0-23 months	125	121	117	163	200	363
<b>Children 0-5 months</b>						
<b>Breastfeeding status</b>						
Not breastfeeding	6.3	7.4	11.9	7.4	11.2	10.2
Exclusively breastfed	27.8	27.4	20.2	20.7	23.7	22.8
Breastfeeding and consuming plain water only	6.3	3.2	7.1	4.8	6.7	6.1
Breastfeeding and consuming non-milk liquids <sup>1</sup>	0.0	5.3	2.4	0.9	3.5	2.7
Breastfeeding and consuming other milk	6.3	10.5	13.1	6.8	13.5	11.7
Breastfeeding and consuming complementary foods	50.6	41.1	45.2	55.8	40.8	45.0
DK/NR/Missing	2.5	5.3	0.0	3.7	0.7	1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total currently breastfeeding	91.1	87.4	88.1	88.9	88.1	88.3
Number of children 0-5 months	65	59	60	84	100	184

Note: Only includes youngest child currently living with the mother. Breastfeeding status refers to a "24-hour" period (yesterday and last night). Children who are classified as breastfeeding and consuming plain water only consumed no liquid or solid supplements. The categories of not breastfeeding, exclusively breastfed, breastfeeding and consuming plain water, non-milk liquids, other milk, and complementary foods (solids and semi-solids) are hierarchical and mutually exclusive, and their percentages add to 100 percent. Thus children who receive breast milk and non-milk liquids and who do not receive other milk and who do not receive complementary foods are classified in the non-milk liquid category even though they may also get plain water. Any children who get complementary food are classified in that category as long as they are breastfeeding as well.

<sup>1</sup> Non-milk liquids include juice, juice drinks, clear broth or other liquids

### 3.7.3 INFANT AND YOUNG CHILD FEEDING PRACTICES

Adequate nutrition is critical to child development. The period from birth to two years of age is important to optimal growth, health and development. This period is one marked for growth faltering, micronutrient deficiencies, and common childhood illnesses such as diarrhea and ARI.

Adequate nutrition requires a minimum dietary diversity. This minimum dietary diversity is measured in terms of the seven key food groups presented in Table 3.7.3. In addition to dietary diversity, feeding

frequency (i.e., the number of times the child is fed) and consumption of breast milk or other types of milk or milk products need to be considered. All three dimensions are aggregated in the Minimum Acceptable Diet (MAD) indicator shown in Table 3.7.3. This indicator measures the percentage of children 6-23 months of age who receive a minimum acceptable diet, apart from breast milk. The MAD indicator measures both the minimum feeding frequency and minimum dietary diversity, as appropriate for various age groups. If a child meets the minimum feeding frequency and minimum dietary diversity for his or her age group and breastfeeding status, then the child is considered to be receiving a minimum acceptable diet.

Tabulation of the indicator requires that data on breastfeeding status, dietary diversity, number of semisolid/solid feeds, and number of milk feeds be collected for children 6-23 months of age for the day preceding the survey. This composite indicator will be calculated from the following two fractions:

$$\frac{\text{Total number of breastfed children 6-23 months of age who had at least the minimum dietary diversity and the minimum meal frequency during the previous day}}{\text{Total number of breastfed children 6-23 months of age in the survey}}$$

AND

$$\frac{\text{Total number of non-breastfed children 6-23 months of age who received at least two milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day}}{\text{Total number of non-breastfed children 6-23 months of age in the survey}}$$

Minimum dietary diversity for breastfed children 6-23 months of age is defined as four or more of the following seven food groups:

1. Grains, roots and tubers
2. Legumes and nuts
3. Dairy products (milk, yogurt and cheese)
4. Flesh foods (meat, fish, poultry and liver/organ meats)
5. Eggs
6. Vitamin A-rich fruits and vegetables
7. Other fruits and vegetables

Minimum meal frequency for breastfed children is defined as two or more feedings of solid, semisolid or soft food for children 6-8 months of age and three or more feedings of solid, semisolid or soft food for children 9-23 months.

For the MAD indicator, minimum dietary diversity for non-breastfed children is defined as four or more of the following six food groups:

1. Grains, roots and tubers
2. Legumes and nuts
3. Flesh foods (meat, fish, poultry and liver/organ meats)
4. Eggs
5. Vitamin A-rich fruits and vegetables
6. Other fruits and vegetables

For the MAD indicator, minimum meal frequency for non-breastfed children is defined as four or more feedings of solid, semisolid, soft food, or milk feeds for children 6-23 months of age, with at least two of these feedings being milk feeds.

Table 3.7.3 shows that only 15 percent of children in the survey areas receive a minimum acceptable diet. MAD rates are higher in rural areas (19 percent) and in the Cul-de-Sac Corridor (16 percent).

Foods and liquids consumed	Corridor			Setting		Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	
Grains, roots and tubers, including commercially fortified foods	78.6	63.9	62.8	74.0	61.6	65.0
Legumes and nuts	20.1	21.5	20.2	22.3	19.8	20.5
Dairy products (milk, infant formula, yogurt, cheese)	39.6	42.4	67.8	41.9	66.1	59.6
Flesh foods (meat, fish, poultry and liver/organ meats)	28.6	34.2	22.4	34.1	22.1	25.4
Eggs	10.4	13.9	12.0	12.6	12.0	12.2
Vitamin-A rich fruits and vegetables	40.3	38.0	27.9	37.0	29.2	31.3
Other fruits and vegetables	6.5	22.2	21.3	27.6	16.8	19.7
Other	7.1	11.4	12.6	10.3	12.2	11.7
DK/NR/Missing	5.2	9.5	7.1	3.4	8.8	7.3
Prevalence of children 6-23 months receiving a minimum acceptable diet (MAD) <sup>1</sup>	12.6	13.5	16.3	18.8	13.6	15.2
Number of children	125	121	117	163	200	363

Note: Only includes youngest child 6-23 months currently living with the mother.  
<sup>1</sup> MAD is defined per FTF guidance, based on the minimum meal frequency and minimum dietary diversity during the previous day, adjusted for breastfeeding status and age:  
- Non breastfed children 6-23 months who had 4 or more out of 6 food groups & 4 or more feedings of solid, semi-solid, soft food, or milk feeds & at least 2 milk feeds  
- Breastfed children 6-8 months who had 4 or more out of 7 food groups & 2 or more feedings of solid, semi-solid, soft food  
- Breastfed children 9-23 months who had 4 or more out of 7 food groups & 3 or more feedings of solid, semi-solid, soft food

### 3.7.4 WOMEN'S NUTRITIONAL STATUS

An adult's nutritional status has important implications for the health status of the adult as well as that of the children that women may bear. Malnutrition in adults results in reduced productivity, an increased susceptibility to infections, retarded recovery from illness, and (for women) heightened risks of adverse pregnancy outcomes. Moreover, a woman who has poor nutritional status as indicated by a low Body Mass Index (BMI), short stature, anemia, or other micronutrient deficiencies has a greater risk of obstructed labor, of having a baby with a low birth weight, of producing lower quality breast milk, of mortality due to postpartum hemorrhage, and of morbidity of both herself and her baby. Micronutrient deficiencies are a result of inadequate intake of micronutrient-rich foods and the inadequate utilization of available micronutrients in the diet due to infections, parasitic infestations, and other dietary factors.

Women's dietary diversity is examined in Table 3.7.4. The table presents nine critical food groups that are used in turn to compute a Women's Dietary Diversity score. This validated indicator aims to measure the micronutrient adequacy of the diet and reports the mean number of food groups consumed in the previous day by women of reproductive age (15-49 years). The indicator is tabulated by averaging the number of food groups consumed (out of the nine food groups) across all women.

Results indicate that women consume, on average, 3.7 of the nine basic food groups, with few differences across settings or corridors. Organ meat (12 percent); eggs (17 percent); and vitamin A-rich dark green, leafy vegetables (22 percent) are the basic food groups that women consume least often.

Table 3.7.4 Foods and liquids consumed by women in the day or night preceding the interview

Percentage of women by type of foods consumed in the day or night preceding the interview [Haiti, 2012]						
Foods groups consumed	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
Grains, roots and tubers	95.0	91.9	91.0	94.9	90.7	91.6
Legumes and nuts	50.8	50.7	45.9	57.4	44.4	47.5
Dairy products (milk, yogurt, cheese)	23.0	32.3	41.2	30.0	39.5	37.3
Organ meat	8.0	7.0	14.8	8.4	13.6	12.4
Eggs	10.2	11.3	19.7	12.3	18.3	16.9
Flesh foods and other misc. small animal protein	61.6	52.1	56.4	50.2	58.0	56.2
Vitamin A dark green leafy vegetables	40.6	11.6	22.5	27.8	20.8	22.4
Other Vitamin A rich vegetables and fruits <sup>1</sup>	51.2	32.9	50.3	43.9	47.8	46.9
Other fruits and vegetables	24.9	33.5	32.8	38.1	30.2	32.0
Other	1.3	1.5	1.1	1.1	1.2	1.2
DK/NR/Missing	0.2	1.0	0.6	0.5	0.7	0.7
Women's Dietary Diversity <sup>2</sup>	3.7	3.3	3.8	3.6	3.7	3.7
Number of women	902	954	960	1,121	1,695	2,816
Women's Dietary Diversity (Top quartile) <sup>2</sup>	5.6	5.6	6.0	5.7	5.9	5.9
Number of women in top WDD quartile	273	215	276	316	448	764

<sup>1</sup> Includes foods made with red palm products  
<sup>2</sup> Mean number of food groups consumed  
<sup>3</sup> Mean number of food groups consumed among women in the top dietary diversity quartile

The nutritional status of women was further assessed with two anthropometric indices: height and BMI. To derive these indices, height and weight measurements were taken for women ages 15-49. Women who were pregnant were excluded from the analysis.

Short stature reflects poor socioeconomic conditions and inadequate nutrition during childhood and adolescence. In a woman, short stature is a risk factor for poor birth outcomes and obstetric complications. For example, short stature is associated with small pelvic size, which increases the likelihood of difficulty during delivery and the risk of bearing low-birthweight babies. A woman is considered to be at risk if her height is below 145 cm. Table 3.7.5 shows the prevalence of short stature in the survey population. Only two percent of the women measured were below 145 cm, with slightly greater rates in urban areas and in the Cul-de-Sac Corridor (both three percent).

BMI, expressed as the ratio of weight in kilograms to the square of height in meters (kg/m<sup>2</sup>), was used to measure underweight and obesity. A BMI below 18.5 indicates underweight or acute malnutrition, and a BMI of 25.0 or above indicates overweight or obesity. A BMI below 17 indicates moderate and severe malnutrition and is associated with increased mortality. Low pre-pregnancy BMI, as with short stature, is associated with poor birth outcomes and obstetric complications. A majority (60 percent) of women in the survey population have a BMI within the normal range. Nine percent can be considered underweight (BMI < 18.5), with seven percent within the moderately to severely underweight range (BMI < 17.0). Underweight women are more prevalent in the Northern Corridor (13 percent).

On the opposite side of this problem, obesity is a growing concern in developing countries, predisposing the population to a wide range of health problems such as diabetes and heart disease as well as poor birth outcomes for women. Overweight and obesity among women is actually more prevalent in the survey area than underweight. Almost one in three women (31 percent) are overweight or obese (BMI

≥ 25), with eight percent within the obese range (BMI ≥ 30). Overweight is more common in urban areas and in the Cul-de-Sac Corridor (both 33 percent).

**Table 3.7.5 Nutritional status of women**  
Among women age 15-49, the percentage with height under 145 cm, mean Body Mass Index (BMI), and the percentage with specific BMI levels [Haiti, 2012]

Nutritional status	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
<b>Height</b>						
Percentage below 145 cm	1.5	1.3	2.9	1.1	2.8	2.4
<b>Body Mass Index<sup>1</sup></b>						
Mean Body Mass Index (BMI)	23.2	22.8	23.7	23.0	23.6	23.4
Normal						
18.5-24.9 (total normal)	67.0	58.7	59.5	65.5	58.6	60.2
Underweight						
<18.5 (total underweight)	6.8	13.5	8.2	9.7	8.9	9.1
17.0-18.4 (mildly underweight)	1.9	4.6	1.7	4.1	1.8	2.3
<17 (moderately and severely underweight)	4.8	8.8	6.5	5.6	7.1	6.8
Overweight/obese						
≥25 (total overweight or obese)	26.2	27.8	32.3	24.8	32.5	30.7
25.0-29.9 (overweight)	21.0	21.2	23.4	19.4	23.7	22.7
≥30.0 (obese)	5.2	6.6	8.9	5.4	8.8	8.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	863	903	911	1,071	1,606	2,677

Note: The Body Mass Index (BMI) is expressed as the ratio of weight in kilograms to the square of height in meters (kg/m<sup>2</sup>).  
<sup>1</sup> Excludes pregnant women.

### 3.8 CHILD LITERACY

The Haiti Baseline Survey collected information on children’s literacy through a literacy test. This test is adapted from the early grade reading assessment (EGRA) tool developed for Haiti by Research Triangle Institute, the World Bank, USAID, and the Ministry of Education. The EGRA tests measure reading speed in order to determine reading fluency, because a minimum threshold of speed must be met for comprehension. While EGRAs are designed for younger children, for the Haiti Baseline Survey the exercise was deemed appropriate for a wider range of ages, given Haiti’s low education levels.

One child age 6 to 17 per household was selected to participate in the test. The test had six modules, half in Creole and half in French. Children were asked to read as many items as possible in 60 seconds. Interviewers recorded the number of correct items read and the amount of time taken to read them (60 seconds or less). Children read graphemes, isolated words and a short paragraph. The number of correct items per minute for each module is presented below, by age and location.

On average, children read French more fluently than Creole. This contrast was present for graphemes (72 per minute versus 66), isolated words (45 per minute versus 40), and words in a paragraph (59 per minute versus 54). This result is unsurprising, given that French is the primary language of instruction in most Haitian schools.<sup>36</sup> As expected, children’s performance tends to improve by age. For example, the youngest group read 28 French words per minute, while the middle group read 37 and the older group 46. Children in urban areas have greater reading fluency than those in rural areas. This pattern is present for all test modules and is most pronounced for the graphemes test (in Creole, rural children correctly

<sup>36</sup> Hebblethwaite, B., & Weber, M. (2012). Le problème de l’usage scolaire d’une langue qui n’est pas parlée à la maison: le créole haïtien et la langue française dans l’enseignement haïtien. *Dialogues et cultures*, 58, pp. 71-80.

processed 56 graphemes per minute, compared to 77 per minute for urban children; in French, rural children correctly processed 64 graphemes per minute, compared to 80 per minute for urban children)..

These results are encouraging. Some literacy experts have posited a rate of 35 to 60 correct words per minute as a minimum reading speed for comprehension.<sup>37</sup> The results suggest that most children in the corridors are meeting at least the lower bounds of this threshold.

Test type	Corridor			Setting		Total
	St. Marc	Northern	Cul-de-Sac	Rural	Urban	
<b>Creole graphemes per minute</b>	<b>56.0</b>	<b>67.5</b>	<b>80.9</b>	<b>55.5</b>	<b>76.5</b>	<b>66.1</b>
6-9 year olds	44.0	50.0	70.1	46.1	59.3	53.1
10-13 year olds	51.6	60.5	70.0	50.1	67.4	58.7
14-17 year olds	68.4	94.4	104.0	69.4	105.7	86.7
<b>Creole words per minute</b>	<b>35.1</b>	<b>40.9</b>	<b>48.6</b>	<b>35.5</b>	<b>45.2</b>	<b>40.4</b>
6-9 year olds	24.8	27.2	43.9	28.9	31.8	30.5
10-13 year olds	33.2	41.1	46.6	33.2	45.2	39.2
14-17 year olds	43.7	54.0	56.3	43.4	58.8	50.8
<b>Creole connected words (paragraph) per minute</b>	<b>45.9</b>	<b>54.6</b>	<b>65.4</b>	<b>48.2</b>	<b>58.9</b>	<b>53.7</b>
6-9 year olds	33.6	35.8	64.8	42.3	42.1	42.1
10-13 year olds	44.0	54.4	51.8	45.5	50.8	50.8
14-17 year olds	55.7	72.2	77.4	55.9	67.2	67.2
<b>French graphemes per minute</b>	<b>62.7</b>	<b>71.6</b>	<b>92.6</b>	<b>64.2</b>	<b>80.0</b>	<b>72.2</b>
6-9 year olds	52.7	60.3	89.1	56.9	72.1	65.0
10-13 year olds	74.5	66.7	67.4	55.2	72.6	63.9
14-17 year olds	62.7	89.5	117.8	80.6	97.4	88.7
<b>French words per minute</b>	<b>38.3</b>	<b>45.6</b>	<b>58.2</b>	<b>40.4</b>	<b>50.3</b>	<b>45.4</b>
6-9 year olds	28.0	30.5	57.7	36.1	36.1	36.1
10-13 year olds	36.9	44.4	51.3	36.8	48.8	42.8
14-17 year olds	46.2	62.1	64.6	48.2	66.4	56.9
<b>French connected words (paragraph) per minute</b>	<b>48.8</b>	<b>60.1</b>	<b>75.4</b>	<b>51.8</b>	<b>66.2</b>	<b>59.0</b>
6-9 year olds	35.7	39.3	71.6	44.9	46.6	45.8
10-13 year olds	46.9	59.5	69.1	48.8	64.4	56.6
14-17 year olds	59.1	80.9	85.4	60.8	88.2	73.9

### 3.9 HOUSEHOLD HUNGER

This study assessed household hunger using the Household Hunger Scale (HHS). The HHS is a simple indicator based on a perception-based food deprivation scale. The scale consists of three components measuring inadequate household food access, with each component split into an occurrence question (whether the episode of food deprivation occurred at all in the past four weeks) and a frequency of

<sup>37</sup> Abadzi, H. (2006). *Efficient Learning for the Poor: Insights from the Frontier of Cognitive Neuroscience*. Washington, DC: The World Bank.

occurrence question (how many times the episode had occurred in the past four weeks). The specific items are as follows:

- 1a. In the past [4 weeks/30 days], was there ever no food to eat of any kind in your house because of lack of resources to get food?*
- 1b. How often did this happen in the past [4 weeks/30 days]?*
- 2a. In the past [4 weeks/30 days], did you or any household member go to sleep at night hungry because there was not enough food?*
- 2b. How often did this happen in the past [4 weeks/30 days]?*
- 3a. In the past [4 weeks/30 days], did you or any household member go a whole day and night without eating anything at all because there was not enough food?*
- 3b. How often did this happen in the past [4 weeks/30 days]?*

These responses are recoded and summed into a numerical score (with a minimum possible score of 0 and a maximum possible score of 6) that is then used to construct a median HHS score for the sample of data collected and a categorical HHS indicator, with the following three categories:<sup>38</sup>

1. *Little to no hunger* (HHS score = 0 to 1): Means that respondents said “no” to all the occurrence questions above, or “yes” to one occurrence question, but then said this happened with rare frequency (only once or twice in the past four weeks).
2. *Moderate hunger* (HHS score = 2 to 3): For example, if respondents said “yes” to at least one of the occurrence questions, and the event occurred more than 10 times during the last four weeks.
3. *Severe hunger* (HHS score = 4 to 6): For example, if respondents said “yes” to at least two of the occurrence questions, and the event occurred more than 10 times during the last four weeks.

The HHS is different from other household food insecurity indicators in that it has been specifically developed and validated for cross-cultural use. This means that the HHS produces valid and comparable results across cultures and settings so that the status of different population groups can be described in a meaningful and comparable way—to assess where resources and programmatic interventions are needed and to design, implement, monitor, and evaluate policy and programmatic interventions.

Table 3.9.1 presents the scores for the HHS in the survey areas. Only 44 percent of households were identified as experiencing little to no hunger, with higher rates in urban areas (49 percent) and in the Cul-de-Sac Corridor (51 percent). Thirty-nine percent of households reported suffering from moderate hunger, and a further 11.1 percent reported severe hunger. Rates of severe hunger were particularly higher in the St. Marc Corridor (19 percent) and in rural areas in general (13 percent).

The HHS has also been shown to be sensitive to seasonal and climactic events. In the case of the Haiti Baseline Survey, data were collected between October and December of 2012, during and after an active storm season that included Hurricane Sandy and subsequent major flooding. Any analysis of the resulting data must take into account any effects that these and other seasonal factors may have had on hunger estimates.

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<sup>38</sup> For the full methodology, please refer to the HHS Indicator Guide (2011), available at [http://www.fantaproject.org/publications/hhs\\_2011.shtml](http://www.fantaproject.org/publications/hhs_2011.shtml)

**Table 3.9.1 Household Hunger**

Percent distribution of households by hunger status [Haiti, 2012]

	St. Marc	Corridor		Setting		Total
		Northern	Cul-de-Sac	Rural	Urban	
Little to no hunger in the household	30.0	33.9	50.6	32.5	49.2	44.2
Moderate hunger in the household	43.3	47.5	34.9	45.1	36.0	38.7
Severe hunger in the household	19.1	12.8	8.8	13.0	10.3	11.1
DK/NR/Missing	7.6	5.8	5.7	9.4	4.5	6.0
Total	100.0	100.0	100.0	# 100.0	100.0	# 100.0
Total with moderate or severe hunger	62.4	60.2	43.8	58.1	46.3	49.8
Median Household Hunger Score	3.0	2.0	1.0	2.0	1.0	2.0
Number of households	1,200	1,199	1,179	1,552	2,026	3,578

Note: Hunger reports from women 15-49 were used whenever available. Else, reports from other household informants were used. Household Hunger Scale was derived using FANTA guidelines. See [http://www.fantaproject.org/downloads/pdfs/HH-Indicator\\_Guide\\_Aug2011.pdf](http://www.fantaproject.org/downloads/pdfs/HH-Indicator_Guide_Aug2011.pdf)

### 3.10 AGRICULTURAL PRODUCTION

The agricultural component of the Haiti Baseline Survey was conducted in all rural households in the three geographic corridors. It included in-depth questions to learn about agricultural practices with respect to common seasonal crops and annual tree crops. The second part of the agricultural survey included questions to learn about access to inputs for all crops and questions about the characteristics, erosion control methods, and uses for sloped plots. As part of the household survey component, a series of questions was asked about agricultural land ownership, and these results are also presented at the end of this section.

The agriculture survey began with a blank page in which the interviewer sketched the respondent's plots of land. Three lists of crops (common seasonal crops; annual tree crops; and other, less common crops) were then read to the respondent, who identified those crops that were cultivated for sale or with the intention to sell from each list on these plots during the one-year reference period. If a respondent cultivated a crop solely for personal consumption, then the crop was not included as part of the survey. The interviewer then proceeded to ask the relevant survey questions for the crops that were identified from the seasonal crop list and the annual tree crop list. No further questions were asked about the third list of other, less common crops.

Interviewers were instructed to read the questions as written. Unless the respondent expressed confusion or failed to respond, the responses were recorded as provided. Interviewers did not probe further unless it appeared from an illogical sequence that questions were misunderstood.

For questions where the respondents were asked to estimate the amount of the crop lost, harvested or sold, the respondent reported the amount in local units that were most familiar and easiest to estimate. These units were later converted to kilogram weights per unit in order to standardize responses. To obtain the kilogram weights for each unit, a consultant was hired to go to the market in Port-au-Prince and purchase all of the crops on the list. The consultant physically measured each unit of each crop using a scale zeroed to account for the weight of the container. The units measured and their weight in kilograms for each crop are provided in Annex D. The kilogram weights for each unit of each crop were measured as accurately as possible; however, they should be considered estimates because each unit of each crop may vary slightly due to variations in the same crop. For example, a basket of small potatoes might weigh more than a basket of large potatoes because the small potatoes are more densely packed in the basket. Measurements were obtained for fresh, dried, shelled, or otherwise processed crops as needed, and the most appropriate form and kilogram weight measurement was used for each crop, depending on the survey question. For example, weights for fresh beans were used for the questions

about losses prior to harvesting and amount harvested, while weights for dried beans were used for the questions about processing losses, post-harvest losses and amount sold.

### **3.10.1 SEASONAL CROPS**

The characteristics of agricultural plots and crops cultivated for sale or with the intention to sell in rural households are presented for each of the three growing seasons in Tables 3.36, 3.37 and 3.38. The 19 crops of interest for the seasonal modules were predetermined based on input from the Haiti Mission. These crops consisted of the most common grains, legumes, roots/tubers, and vegetables grown in the corridors along with sugar cane, bananas and plantains.

During the primary rainy season (generally between February and August), 66 percent of rural households sold or intended to sell the crops of interest. Fewer households in the Northern Corridor (56 percent) sold or intended to sell these crops compared to the St. Marc Corridor (72 percent) and the Cul-de-Sac Corridor (68 percent). The most common crops that households sold or intended to sell during the primary rainy season were corn, beans, pigeon peas, sorghum/millet, bananas and plantains. In the St. Marc Corridor, more households sold or intended to sell rice, while more households sold or intended to sell sweet potatoes, yams and cassava in the Northern Corridor. Very few households sold or intended to sell vegetables (cabbage, lettuce, tomatoes, spinach, bell peppers and leeks) in any of the three corridors, with the exception of leeks and shallots in the Cul-de-Sac Corridor.

Table 3.10.1 Agriculture - Primary Rainy Season (February to August 2012)

Crops sold or intended for sale in rural households

	St. Marc	Corridor Northern	Cul-de-Sac	Total
<b>Percent of households</b>				
Sold or intended to sell crops during season	71.7	56.2	68.0	66.0
Did not sell or intend to sell crops during season	28.2	43.4	32.0	33.9
DK/Missing	0.1	0.4	0.0	0.2
Total	100.0	100.0	100.0	100.0
Number of households	875	475	200	1,550
<b>Percent of households that sold or intended to sell crops</b>				
Corn	51.5	44.6	66.9	55.8
Rice	27.1	15.0	1.5	14.3
Sorghum/Millet	25.8	—	41.2	25.6
Beans (butter, white, black, red,...)	31.6	23.2	36.0	31.3
Pigeon peas	33.7	33.7	41.2	36.6
Peanut	0.2	7.5	—	1.9
Cabbage	3.4	—	3.7	2.7
Lettuce	—	—	—	—
Spinach, purslane	1.0	0.8	2.2	1.4
Tomato	2.7	0.8	3.7	2.6
Bell pepper	—	—	0.7	0.3
Leek (including shallots)	1.0	—	19.1	7.8
Potato	0.6	—	8.1	3.4
Sweet potato	8.6	21.0	14.7	13.9
Yam, masoko	2.9	30.0	—	8.2
Sweet cassava	8.8	26.6	2.9	10.8
Cassava	4.0	23.6	2.2	8.0
Sugarcane	2.1	9.4	—	3.0
Banana & Plantain	33.0	47.2	13.2	28.7
Number of households	627	267	136	1,030
<b>Average number of crops per household*</b>	2.37	2.83	2.61	2.58
<b>Average number of plots per household*</b>	2.30	1.77	1.80	1.98
<b>Average area of plot (hectares)</b>	0.50	0.53	0.49	0.50

\*For all households that sold or intended to sell crops

During the dry season (generally between October and February), about one-third of households sold or intended to sell the crops of interest. More households sold or intended to sell these crops in the St. Marc (37 percent) and Cul-de-Sac (35 percent) Corridors compared to the Northern Corridor (24 percent). Beans, corn, pigeon peas, bananas and plantains were the most common crops that households sold or intended to sell during the dry season.

Table 3.10.2 Agriculture - Dry Season (Oct. 2011 – Feb 2012)

Crops sold or intended for sale in rural households

	St. Marc	Corridor Northern	Cul-de-Sac	Total
<b>Percent of households</b>				
Sold or intended to sell crops during season	36.8	23.8	35.5	32.7
Did not sell or intend to sell crops during season	63.2	75.4	64.5	67.1
DK/Missing	0.0	0.8	0.0	0.2
Total	100.0	100.0	100.0	100.0
Number of households	875	475	200	1,550
<b>Percent of households that sold or intended to sell crops</b>				
Corn	23.6	31.9	31.0	28.3
Rice	19.6	5.3	—	8.7
Sorghum/Millet	12.4	—	29.6	16.9
Beans (butter, white, black, red,...)	23.0	25.7	40.9	30.8
Pigeon peas	13.4	21.2	26.8	20.5
Peanut	—	8.0	—	1.6
Cabbage	4.7	—	—	1.8
Lettuce	—	—	—	—
Spinach, purslane	—	0.9	5.6	2.5
Tomato	5.3	—	4.2	3.8
Bell pepper	—	—	—	—
Leek (including shallots)	—	—	15.5	6.3
Potato	0.3	—	5.6	2.4
Sweet potato	10.9	20.4	12.7	13.6
Yam, masoko	0.3	18.6	1.4	4.5
Sweet cassava	5.9	23.9	1.4	7.7
Cassava	2.2	13.3	—	3.6
Sugarcane	2.2	11.5	—	3.2
Banana & Plantain	32.0	48.7	16.9	29.2
Number of households	322	113	71	506
<b>Average number of crops per household*</b>	1.56	2.29	1.92	1.85
<b>Average number of plots per household*</b>	1.68	1.55	1.41	1.54
<b>Average area of plot (hectares)</b>	0.48	0.50	0.47	0.48

\*For all households that sold or intended to sell crops

During the secondary rainy season (generally between July and December), approximately 38 percent of households sold or intended to sell the crops of interest. More households sold or intended to sell these crops in the Cul-de-Sac Corridor (43 percent) compared to the St. Marc (35 percent) and Northern (34 percent) Corridors. Corn, beans, bananas and plantains were the most common crops that households sold or intended to sell during this season. In the Cul-de-Sac Corridor, more households sold or intended to sell sorghum/millet and pigeon peas, and fewer households sold or intended to sell bananas and plantains, compared to the St. Marc and Northern Corridors.

Table 3.10.3 Agriculture -Secondary Rainy Season (July 2011 – Dec. 2011)

Crops sold or intended for sale in rural households

	St. Marc	Corridor Northern	Cul-de-Sac	Total
<b>Percent of households</b>				
Sold or intended to sell crops during season	35.3	34.3	42.5	37.7
Did not sell or intend to sell crops during season	64.7	65.7	57.5	62.3
DK/Missing	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0
Number of households	875	475	200	1,550
<b>Percent of households that sold or intended to sell crops</b>				
Corn	26.5	33.7	40.0	34.1
Rice	23.3	11.7	—	10.5
Sorghum/Millet	11.7	0.6	27.1	15.4
Beans (butter, white, black, red,...)	24.9	30.1	28.2	27.6
Pigeon peas	13.6	14.1	23.5	17.9
Peanut	1.6	3.7	—	1.5
Cabbage	4.5	0.6	1.2	2.1
Lettuce	—	—	—	—
Spinach, purslane	0.7	0.6	4.7	2.4
Tomato	1.9	—	3.5	2.1
Bell pepper	—	—	—	—
Leek (including shallots)	—	—	10.6	4.5
Potato	—	—	5.9	2.5
Sweet potato	9.1	13.5	9.4	10.3
Yam, masoko	1.3	16.6	—	4.6
Sweet cassava	8.4	12.9	4.7	8.0
Cassava	2.6	6.8	3.5	4.1
Sugarcane	3.9	9.2	—	3.6
Banana & Plantain	28.8	42.3	11.8	25.0
Number of households	309	163	85	557
<b>Average number of crops per household*</b>	1.63	1.96	1.76	1.77
<b>Average number of plots per household*</b>	1.66	1.37	1.39	1.47
<b>Average area of plot (hectares)</b>	0.51	0.51	0.35	0.45

\*For all households that sold or intended to sell crops

### 3.10.2 OTHER CROPS CULTIVATED FOR SALE

Respondents were asked about other crops that were cultivated for sale or with the intention to sell during the past year (July 2011 to August 2012). Table 3.10.4 presents the results for these crops. The most commonly cultivated of these crops were lima beans, black-eyed peas and okra. In the Northern Corridor, 14 percent of households reported selling or intending to sell malanga and taro.

Table 3.10.4 Agriculture - Other Crops Cultivated between July 2011 and August 2012

Other crops sold or intended for sale in rural households

	St. Marc	Corridor Northern	Cul-de-Sac	Total
<b>Percent of households</b>				
Lima beans	7.5	1.1	11.7	7.3
Blackeye peas	5.2	20.5	8.1	10.6
Eggplant	7.8	1.3	1.0	3.4
Watermelon	4.9	0.7	1.0	2.2
Pumpkin, zucchini, squash	6.5	4.7	4.6	5.3
Okra	12.1	8.2	14.7	12.0
Carrot and turnip	0.2	—	2.5	1.0
Red beetroot	0.1	—	1.0	0.4
Onions (including shallots)	1.7	—	0.5	0.8
Malanga, Taro	3.5	14.0	1.0	5.5
Pinapple	0.1	0.4	—	0.2
Breadfruit	4.7	5.4	3.6	4.5
Lemon & lime	1.6	1.1	2.5	1.8
Grapefruit	0.2	1.9	3.6	2.0
Tangerines, mandarines, and clementines	—	—	—	—
Cashew	—	0.9	—	0.2
Pepper (capsicum spp.)	6.5	3.0	4.1	4.6
Papaya	5.7	3.0	4.1	4.3
Other (militon, melon, pistachio, etc.)	4.6	4.1	5.6	4.8
Number of households	875	475	200	1,550

### 3.10.3 INPUTS, HARVEST, GROSS MARGIN AND LOSSES FOR SEASONAL CROPS

For each seasonal crop that was sold or intended for sale during the three growing seasons, the costs of agricultural inputs and the amount of income received from the sale of the crop were recorded, along with estimates of the amounts harvested and sold. Estimates of amounts lost prior to harvesting, during processing and after harvesting were also recorded. Amounts were reported by respondents in various units; all units were standardized to kilograms for this analysis. Fewer than 30 households reported cultivating (for sale or with the intention to sell) lettuce, spinach, bell peppers and potatoes, so these crops were excluded from the analyses.

The results for total purchased input costs, yield, gross margin and losses for each crop over all three seasons combined are presented in Table 3.10.5. The results for total purchased input costs, broken down by type of input for each crop, are presented in Table 3.10.6. Gross margin was computed as  $[(\text{income from selling/quantity sold}) * (\text{quantity harvested}) - (\text{total purchased input costs})] / (\text{area in hectares})$ . Losses prior to harvesting are presented as a percentage of total production where total production equals the sum of amount lost prior to harvesting plus amount harvested. Losses due to processing and after processing are presented as a percentage of total yield.

Table 3.10.5 Agriculture - Seasonal Crops  
Input costs, yield, gross margin and losses per crop

	Average Total purchased input cost* per hectare	Average Yield** per hectare	Average gross margin* per hectare	Average percent of total production*** lost prior to harvesting due to rodents, storms, flooding or theft	Average percent of total yield lost due to processing	Average percent of total yield lost after harvest excluding processing losses	Number of observations
Corn	\$997	2,183	\$400	62%	11%	17%	835
Rice	\$1,660	3,561	\$1,370	58%	24%	19%	371
Sorghum/Millet	\$707	3,176	\$957	51%	12%	19%	337
Beans (butter, white, black, red...)	\$1,279	1,238	\$181	57%	18%	20%	589
Pigeon peas	\$853	1,121	\$237	63%	17%	22%	524
Peanut	\$353	497	\$127	64%	13%	5%	41
Cabbage	\$1,218	7,563	\$2,316	50%	—	88%	57
Tomato	\$1,508	7,293	-\$30	44%	—	25%	53
Leek (including shallots)	\$1,086	1,002	\$341	39%	—	52%	52
Sweet potato	\$982	2,696	\$279	51%	—	22%	254
Yam, masoko	\$1,247	23,727	\$1,030	73%	—	4%	151
Sweet cassava	\$625	2,563	\$464	64%	—	30%	227
Cassava	\$390	5,569	\$1,651	48%	—	43%	135
Sugarcane	\$502	22,620	\$129	52%	—	—	82
Banana & Plantain	\$1,129	9,193	\$3,389	53%	—	17%	683

\*Input costs and gross margin are measured in U.S. dollars (conversion rate: 1 Haitian gourde = 0.02353 U.S. dollars)

\*\*Yield is measured in kilograms

\*\*\*Total production = amount lost prior to harvesting plus amount harvested.

Table 3.10.6 Agriculture - Seasonal Crops  
Individual input costs per crop\*

	Average Total Purchased Input cost per hectare	Average Seed cost per hectare	Average Fertilizer cost per hectare	Average Pesticide cost per hectare	Average Land preparation cost per hectare	Average Water/irrigation cost per hectare	Average Labor cost per hectare	Number of observations
Rice	\$1,660	\$196	\$471	\$43	\$450	\$6	\$309	371
Tomato	\$1,508	\$272	\$98	\$85	\$432	\$77	\$465	53
Beans (butter, white, black, red...)	\$1,279	\$516	\$78	\$25	\$262	\$36	\$212	589
Yam, masoko	\$1,247	\$670	\$4	\$0	\$167	\$1	\$225	151
Cabbage	\$1,218	\$427	\$346	\$42	\$198	\$33	\$124	57
Banana & Plantain	\$1,129	\$246	\$74	\$10	\$391	\$55	\$241	683
Leek (including shallots)	\$1,086	\$527	\$233	\$7	\$103	\$5	\$148	52
Corn	\$997	\$155	\$63	\$26	\$317	\$19	\$256	835
Sweet potato	\$982	\$138	\$54	\$30	\$301	\$39	\$281	254
Pigeon peas	\$853	\$184	\$18	\$10	\$271	\$4	\$245	524
Sorghum/Millet	\$707	\$76	\$49	\$16	\$193	\$41	\$237	337
Sweet cassava	\$625	\$69	\$28	\$5	\$170	\$25	\$226	227
Sugarcane	\$502	\$105	\$20	\$5	\$158	\$2	\$103	82
Cassava	\$390	\$47	\$12	\$1	\$118	---	\$143	135
Peanut	\$353	\$128	\$2	\$12	\$59	\$0	\$103	41

\*Input costs are measured in U.S. dollars (conversion rate: 1 Haitian gourde = 0.02353 U.S. dollars)

Crops with the highest purchased input costs per hectare were rice, tomatoes and beans, while crops with the lowest purchased input costs per hectare were cassava, sugarcane and peanuts. Seeds, land preparation, and labor costs accounted for the majority of input costs for most crops. For rice, cabbage and leeks/shallots, costs for fertilizer were also high.

Crops with the highest gross margin per hectare were bananas/plantains and cabbage, while crops with the lowest gross margin per hectare were tomatoes (negative gross margin), peanuts and sugarcane.

The losses reported prior to harvesting were quite substantial for all crops, ranging from 39 percent of total production for leeks/shallots to as high as 73 percent of total production for yams/masoko. Losses due to processing (for those crops where processing losses were reported) ranged from 12 percent of total yield for sorghum/millet to 24 percent of total yield for rice. Post-harvesting losses ranged from four to five percent of total yield for yams/masoko and peanuts to as high as 88 percent of total yield for cabbage. Post-harvesting losses for sweet cassava and cassava were high, at 30 percent and 43 percent of total yield, respectively. Post-harvesting losses for other crops averaged around 20 percent of total yield.

The types of processing used for those crops where processing was applied are shown in Table 3.10.7. Shelling/hulling/beating and drying were used most frequently for these crops. Milling and grinding was also frequently used for rice. About 25 percent of corn, rice, sorghum/millet and peanut crops were not processed, while 44 percent of pigeon pea crops were not processed and 17 percent of bean crops were not processed.

	None	Shelling/ Hulling/ Beating	Drying	Milling/ Grinding	Other	Number of Observations
Percent reported for each type of processing *						
Corn	26.0	60.0	50.6	17.8	1.8	826
Rice	24.9	48.2	47.6	41.5	1.2	371
Sorghum/Millet	26.7	54.1	39.7	19.7	3.5	327
Beans (butter, white, black, red,..)	17.3	67.9	47.6	3.2	1.9	586
Pigeon peas	43.7	38.0	22.6	3.0	4.4	509
Peanut	26.5	25.6	51.3	—	2.6	41

\*Missing responses excluded  
Multiple responses allowed so the sum may exceed 100 percent

The reasons for losses occurring after harvesting are shown in Table 3.10.8. Rotting was the most frequently reported reason for post-harvesting losses for most crops. For rice, sorghum/millet and peanuts, rodents and pests were the most frequently reported reason for post-harvesting losses. For peanuts and corns, insects were another frequently reported reason for post-harvesting losses.

	Rotting	Insects	Rodents/ Pests	Flood	Theft	Other	Don't know	Total	Number of Observations**
Percent for each crop*									
Corn	29.8	16.8	21.8	3.1	1.8	11.1	15.6	100.0	196
Rice	8.4	9.5	36.8	12.1	2.1	14.2	16.9	100.0	87
Sorghum/Millet	15.4	17.5	27.3	4.4	—	5.3	30.3	100.0	91
Beans (butter, white, black, red,..)	40.4	11.5	18.4	1.1	2.6	18.3	7.7	100.0	115
Pigeon peas	19.9	17.4	9.2	0.8	—	1.1	51.6	100.0	92
Cabbage	13.5	6.8	—	32.4	6.8	—	40.6	100.0	11
Tomato	62.1	2.2	10.6	2.2	—	12.9	10.0	100.0	18
Sweet potato	29.0	4.5	24.6	—	4.5	3.3	34.1	100.0	46
Yam, masoko	3.3	—	—	—	—	8.3	88.3	100.0	22
Sweet cassava	18.9	12.9	12.4	—	—	—	55.8	100.0	26
Cassava	21.6	3.7	7.5	—	—	—	67.2	100.0	20
Banana & Plantain	1.1	9.3	1.1	1.1	14.6	31.4	41.6	100.0	116

\*Missing responses excluded  
\*\*This question was only asked of respondents who reported post-harvest losses (excluding processing losses). Results for crops with fewer than 30 observations may not be representative

### 3.10.4 TYPES OF STORAGE AND BUYERS FOR SEASONAL CROPS

Respondents were asked about the main types of storage used for their seasonal crops. These results are provided in Table 3.10.9. Use of any type of storage was most prevalent for corn, rice, sorghum/millet, beans and pigeon peas. For all other crops, households reported that they stored less than 40 percent. The most common methods of storage reported were heaps or bags stored in the house. Silos were used for a very small percentage of crops.

Main method of storage										
	None	Unprotected pile	Heaped in house	Bags in house	Silo	Hung in Tree	Other	Don't know	Total	Number of Observations
Percent for each crop*										
Corn	22.6	1.5	24.1	27.3	0.4	15.4	3.7	5.1	100.0	782
Rice	21.3	1.0	20.3	48.8	1.2	—	1.3	6.1	100.0	353
Sorghum/Millet	20.6	3.7	31.7	25.0	1.4	—	5.0	12.5	100.0	317
Beans (butter, white, black, red,...)	16.9	0.4	36.1	41.7	0.9	—	2.0	2.0	100.0	549
Pigeon peas	35.4	4.0	17.0	24.2	0.3	—	3.5	15.5	100.0	479
Peanut	60.0	—	9.5	28.4	—	—	—	2.1	100.0	34
Cabbage	76.8	—	7.5	6.3	—	—	—	9.4	100.0	52
Tomato	85.5	—	6.8	1.4	—	—	—	6.3	100.0	44
Leek (including shallots)	64.2	—	21.0	11.6	—	—	2.6	0.5	100.0	42
Sweet potato	65.2	5.8	9.6	7.3	—	—	0.3	12.0	100.0	223
Yam, masoko	59.7	—	14.5	3.3	—	—	0.6	22.0	100.0	125
Sweet cassava	67.6	1.0	9.7	8.7	—	—	0.8	12.2	100.0	184
Cassava	62.1	—	16.2	3.9	1.0	—	1.0	15.7	100.0	105
Sugarcane	76.9	1.4	2.9	1.4	3.8	—	1.4	12.0	100.0	79
Banana & Plantain	68.7	1.7	9.9	4.4	—	—	0.7	14.5	100.0	551

\*Missing responses excluded

Respondents were asked about the main type of buyers for their seasonal crops. These results are provided in Table 3.10.10. Local markets were the most prevalent source of buyers for all crops. Only a small percentage of these crops were sold to private traders, friends/neighbors or some other type of buyer.

Main buyer of crop									
	None	Friend/Neighbor	Local Market	Private Trader	Other	Don't Know	Total	Number of Observations	
Percent for each crop*									
Corn	32.9	1.1	58.5	0.5	1.5	5.5	100.0	773	
Rice	20.5	2.2	64.6	3.0	3.0	6.7	100.0	369	
Sorghum/Millet	24.3	3.0	56.6	1.1	2.6	12.5	100.0	308	
Beans (butter, white, black, red,...)	21.3	2.5	71.7	0.9	1.0	2.7	100.0	555	
Pigeon peas	37.3	0.5	42.6	0.2	2.6	16.8	100.0	463	
Peanut	14.6	—	80.6	2.9	—	1.9	100.0	37	
Cabbage	18.5	2.7	68.7	2.0	—	8.1	100.0	55	
Tomato	19.2	6.7	67.7	—	1.2	5.2	100.0	48	
Leek (including shallots)	8.9	—	90.7	—	—	0.5	100.0	49	
Sweet potato	26.6	0.3	59.9	1.2	1.5	10.5	100.0	222	
Yam, masoko	32.6	—	37.6	1.7	3.2	25.0	100.0	122	
Sweet cassava	28.8	2.5	51.2	1.5	2.2	13.8	100.0	193	
Cassava	28.4	1.3	50.5	2.0	1.3	16.5	100.0	105	
Sugarcane	40.4	2.4	29.3	13.0	1.4	13.5	100.0	79	
Banana & Plantain	28.2	1.0	48.6	1.8	3.1	17.4	100.0	571	

\*Missing responses excluded

### 3.10.5 TREE CROPS

The tree crops of interest for this study were avocados, mangos (Francique and others), oranges, coconut palms, coffee and cocoa. Close to half of all households (45 percent) cultivated one or more of these crops for sale during the prior agricultural year. The majority of these households cultivated fewer than 10 trees per crop. Avocados and mangos were the most commonly cultivated crops among those households with fewer than 10 trees per crop. About 13 percent of all households cultivated at least one tree crop with 10 or more trees. For these households, avocados, mangos and coffee were the most common crops cultivated.

	St. Marc	Corridor Northern	Cul-de-Sac	Total
<b>Percent of households</b>				
Sold or intended to sell tree crops - all crops with less than 10 trees	30.5	28.5	36.3	32.0
Sold or intended to sell tree crops - at least one crop with 10 or more trees	9.4	17.3	11.7	12.5
Did not sell or intend to sell tree crops	60.1	54.1	52.0	55.5
DK/Missing	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0
Number of Households	875	475	200	1550
<b>Percent of households that sold or intended to sell crops with less than 10 trees</b>				
Avocado	57.9	49.6	70.8	60.9
Francique mango	46.6	5.9	38.7	32.8
Other mango	58.7	85.2	46.2	60.6
Orange	21.8	40.7	31.3	30.5
Coconut palm	44.4	38.5	18.8	32.7
Coffee	11.7	6.7	10.9	10.1
Cocoa	4.5	16.3	—	5.8
Number of Households	266	135	65	466
<b>Percent of households that sold or intended to sell crops with 10 or more trees</b>				
Avocado	28.1	35.4	42.9	35.9
Francique mango	4.9	2.4	15.0	7.1
Other mango	6.1	57.3	35.0	36.3
Orange	3.7	19.5	21.1	15.6
Coconut palm	18.3	6.1	15.0	12.3
Coffee	62.2	29.3	47.4	43.9
Cocoa	—	35.4	—	14.7
Number of Households	82	82	21	185

For each of the tree crops where 10 or more trees were cultivated, the cost of care for the crop, amount harvested and net income per tree were calculated. The results for these variables are provided in Table 3.10.12. Cost of care per tree was highest for mangos, and average net income per tree was highest for avocados.

Table 3.10.12 Agriculture - Annual Tree Crops with 10 or more trees

Cost of care, yield and net income per crop

	Average Number of trees	Average Cost of Care* per tree	Average Yield** per tree	Average Net income* per tree	Number of observations***
Avocado	35.6	\$0.18	48.6	\$11.44	61
Francique mango	31.4	\$0.60	99.7	\$8.12	9
Other mango	36.6	\$0.26	44.4	\$6.81	58
Orange	41.2	\$0.10	34.6	\$5.72	23
Coconut palm	20.7	\$0.10	43.1	\$4.68	22
Coffee	221.2	\$0.09	1.2	\$4.81	84
Cocoa	201.2	\$0.08	2.3	\$3.89	29

\*Cost of care and net income are measured in U.S. dollars (conversion rate: 1 Haitian gourde = 0.02353 U.S. dollars)

\*\*Yield is measured in kilograms

\*\*\*Results for crops with fewer than 30 observations may not be representative

For coffee and cocoa, questions were asked about the type of processing and the type of storage used. These results are provided in Table 3.10.13. Drying and roasting were the most commonly reported types of processing used for coffee and cocoa crops. The most common methods of storage reported for coffee and cocoa were heaps or bags in the house or unprotected piles outside the house. A small percentage of coffee crops (2 percent) were stored in either traditional or metallic silos.

Table 3.10.13 Agriculture - Annual Tree Crops

Processing and storage of coffee and cocoa

	Coffee	Cocoa
<b>Type of Processing (percentage)*</b>		
None	17.3	11.1
Drying	74.8	71.4
Roasting	35.2	25.0
Grinding	17.0	3.6
Fermenting	—	—
Number of Observations	84	28
<b>Main method of storage (percentage)*</b>		
None	4.9	3.7
Unprotected pile	23.8	22.2
Heaped in house	28.7	33.3
Bags in house	35.5	33.3
Traditional silo	0.8	—
Metallic silo	1.2	—
Number of Observations	80	27

\*Multiple responses allowed so the sum may exceed 100 percent

### 3.10.6 ACCESS TO INPUTS

Farmers were asked about the use, timing and source of agricultural inputs for their plots. These results are provided in Tables 3.49 and 3.50. Paid labor (71 percent), land preparation equipment (65 percent) and improved seeds (49 percent) were the most frequently used inputs. Only 18 percent of households reported using pesticides for their plots. Fewer households in the Northern Corridor reported using all types of inputs compared to those in the St. Marc and Cul-de-Sac Corridors, particularly fertilizer, pesticides and irrigated or pump water.

Over 90 percent of farmers who used improved seeds, paid labor and land preparation equipment reported that they were able to obtain these inputs on time, while 83 percent of farmers using irrigated pump water and fertilizer reported that they were able to obtain them on time.

	St. Marc	Corridor Northern	Cul-de-Sac	Total
<b>Percent of households using agricultural inputs*</b>				
Irrigated or pumpwater	32.0	8.0	30.4	24.5
Improved seeds	49.8	40.4	54.8	48.8
Fertilizer	38.2	7.0	34.8	27.9
Pesticides	20.2	5.3	26.5	18.1
Paid labor	72.3	60.3	77.4	70.6
Land preparation equipment	59.9	57.5	74.7	64.5
None	13.3	13.1	12.0	12.7
Don't know/missing	8.9	15.8	9.5	11.1
Number of households	875	475	200	1,550
<b>Percent able to obtain input on time**</b>				
Irrigated or pumpwater	85.0	76.3	82.1	82.9
Improved seeds	94.9	93.1	90.7	92.8
Fertilizer	89.0	81.8	76.9	83.0
Pesticides	92.0	80.0	83.7	86.6
Paid labor	94.7	95.7	87.5	92.2
Land preparation equipment	94.7	94.4	89.3	92.4
*Multiple responses allowed so the sum may exceed 100 percent				
**Percentage of all households who reported using agricultural input				

The most common sources for improved seeds, fertilizer and pesticides were the marketplace or private stores. Friends and neighbors, associations and self were the most commonly reported sources for paid labor. Land preparation equipment was obtained most frequently from the marketplace, associations, friends and neighbors, or self-owned.

The question for source of inputs was intended to allow for spontaneous responses. Some of the responses shown may appear implausible, which in some cases may be due to the interviewer trying to fit a given response into one of the preset categories. For example, for irrigated water, "self" may indicate that the water came from a pump on the respondent's land. For paid labor, the respondent may have reported any source of labor (whether paid or not) and included themselves and friends or neighbors as sources. Paid labor from a previous crop may indicate that the hired laborers were those who worked on the crop in prior seasons. In other nonsensical cases, it is likely that the respondents misunderstood the question.

Table 3.10.15 Agriculture - Access to Inputs

Source of inputs in rural households

	Irrigated or pump water	Improved Seeds	Fertilizer	Pesticides	Paid Labor	Land Preparation Equipment
<b>Source of inputs (percentage)*</b>						
Previous crop	2.4	10.9	2.9	3.5	5.9	2.5
Marketplace	0.2	70.7	61.8	57.8	2.2	25.3
Private store	9.9	8.7	28.1	32.4	3.4	9.9
Association	23.6	2.7	1.4	2.3	35.1	12.3
Donor project	3.8	1.1	1.3	0.9	0.1	0.4
Government (BAC, DDA, etc.)	12.5	4.1	6.8	5.9	—	0.9
Self	27.8	6.4	1.7	0.9	25.2	37.9
Canal	6.9	—	—	—	—	—
Tank	10.4	—	—	—	—	—
Family member	—	—	—	—	1.5	1.8
Friends/neighbors	—	—	—	—	20.8	12.9
Worker	—	—	—	—	7.7	2.7
Other	2.9	—	—	—	2.7	0.8
Number of households	373	723	428	248	1052	926

\*Percentage of all households who reported using input

Multiple responses allowed so total may exceed 100 percent

### 3.10.7 SLOPE OF PLOTS, EROSION CONTROL AND USAGE

Farmers were asked about the slope of their plots, the availability of erosion and water shedding controls for their sloped plots, and usage of their sloped plots. These results are provided in Table 3.10.16. Overall, 28 percent of households reported that their plots were mostly sloped. The Cul-de-Sac Corridor (40 percent) had a higher percentage of mostly sloped plots compared to the St. Marc Corridor (26 percent) and the Northern Corridor (17 percent). For all corridors, the most frequently used form of erosion control on sloped plots was dry walls (45 percent). In general, households in the Cul-de-Sac Corridor reported higher usage of all forms of erosion control compared to the St. Marc and Northern Corridors. Sloped plots were used most for food producing crops in the Cul-de-Sac Corridor and the St. Marc Corridor, while they were used more for dispersed trees/shrubs and bananas in the Northern Corridor.

Table 3.10.16 Agriculture - Plot characteristics  
Slope of plots, types of erosion control, and usage in rural households

	St. Marc	Corridor Northern	Cul-de-Sac	Total
<b>Percentage of households with flat or sloped plots</b>				
Mostly flat	58.9	60.8	60.2	59.9
Mostly sloped	26.1	16.7	39.8	28.3
Not applicable or missing	15.0	22.5	0.0	11.8
Total	100.0	100.0	100.0	100.0
<b>Percentage of sloped plots with erosion controls*</b>				
Terraces	6.3	21.8	16.7	14.1
Grass strip	9.4	19.2	31.9	22.4
Rock wall	17.0	15.4	33.3	24.9
Dry walls	37.1	25.6	56.9	45.1
Water catchment/impluvium	3.6	1.3	2.8	2.8
Vetiver grass	8.0	15.4	31.9	21.3
Tree belts	14.3	23.5	27.8	23.5
Hedgerows	4.9	10.3	19.4	13.1
Drainage ditches	4.0	5.1	16.7	10.6
Gully plugs	13.8	9.0	27.8	20.0
Contour farming	4.0	6.4	18.1	11.5
Other	5.8	6.4	4.2	5.1
None	4.5	2.6	2.8	3.3
<b>Usage of sloped plots*</b>				
Dense trees/shrubs	18.9	43.8	34.7	31.1
Dispersed trees/shrubs	43.8	55.1	45.1	46.4
Bananas	33.8	50.7	29.6	34.6
Staple crops	56.3	46.2	79.2	66.1
Pasture	29.9	44.9	40.3	37.7
Fallow	27.4	39.7	47.2	39.5
Other	1.8	1.3	4.2	2.9
None	0.5	0.0	7.0	3.7
Number of households	875	475	200	1,550

\*Multiple responses allowed so the sum may exceed 100 percent

### 3.10.8 AGRICULTURAL LAND OWNERSHIP IN RURAL HOUSEHOLDS

Respondents in rural households were asked about whether they owned agricultural land, land titles and the size of their land holdings. These results are provided in Table 3.10.17.

Ownership of agricultural land was reported by 55 percent of households. More households with both male and female adults reported owning agricultural land (58 percent) compared to those with an adult male only (49 percent) or an adult female only (43 percent).

Of those households that reported ownership of agricultural land, 44 percent reported having an official title, 16 percent reported having an informal title, and 41 percent reported having no title. In the St.

Marc Corridor, 54 percent of households reported holding no title to the land compared to 33 and 34 percent of households in the Northern and Cul-de-Sac Corridors, respectively.

The average size of agricultural land holdings was 4.3 hectares, and the median size was 1.3 hectares. A small number of rural households (11) reported sizeable land holdings (20 or more hectares). Median size of agricultural land holdings was similar for households with male and female adults compared to those with a single male or female adult. The median size of agricultural land holdings was smaller (one hectare) in the Northern Corridor compared to the St. Marc or Cul-de-Sac Corridors (two hectares).

	Corridor			Gendered Household Type			Total
	St. Marc	Northern	Cul-de-Sac	Adult Female no Adult Male	Adult Male no Adult Female	Male and Female Adults	
<b>Land Ownership</b>							
Does any member of this household own any agricultural land?	54.4	58.5	52.0	43.2	48.6	58.0	54.6
Number of rural households	875	475	202	236	158	1148	1552
<b>Land Title Ownership <sup>1</sup></b>							
Has Official Title	34.9	46.0	49.5	46.0	43.7	42.5	43.5
Has Informal Title	11.3	21.2	16.2	13.6	14.0	16.8	16.0
Has No Title	53.8	32.7	34.3	40.4	42.3	40.6	40.5
DK/NR/Missing	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Size of Land Holding (In Hectares) <sup>1</sup></b>							
Mean size of land holding	3.7	4.5	4.7	2.9	7.9	4.1	4.3
Median size of land holding	1.9	1.0	2.0	1.3	1.3	1.3	1.3
Number of rural households that own land	476	278	105	93	87	676	859

<sup>1</sup> Includes rural households that own any agricultural land.

### 3.11 WOMEN'S EMPOWERMENT IN AGRICULTURE

Women play a critical and potentially transformative role in agricultural growth in developing countries, but they face persistent obstacles and economic constraints limiting further inclusion in agriculture. The WEAI measures the empowerment, agency and inclusion of women in the agriculture sector in an effort to identify ways to overcome those obstacles and constraints. The WEAI is a significant innovation in its field and aims to increase understanding of the connections between women's empowerment, food security and agricultural growth. This index measures the roles and extent of women's engagement in the agriculture sector in five domains: (1) decisions about agricultural production, (2) access to and decision-making power over productive resources, (3) control over use of income, (4) leadership in the community, and (5) time use. It also measures women's empowerment relative to men within their households.<sup>39</sup>

The WEAI is composed of two sub-indexes: The five domains of empowerment sub-index (5DE) assesses whether women are empowered across five domains. It consists of 10 indicators that range between the values of zero and one, with higher values representing greater empowerment. The gender parity sub-index (GPI) measures gender parity in empowerment within the household and also ranges between 0 and 1, with higher values representing greater gender parity. By definition, households without a primary adult male are excluded from this measure. The total WEAI score is computed as a weighted sum of the 5DE and the GPI. The 5DE sub-index contributes 90 percent of the weight to the

<sup>39</sup> International Food Policy Research Institute (IFPRI). (2012). *Woman's Empowerment in Agriculture Index Summary Brochure*.

WEAI. Based on both sub-indexes, the WEAI is thus an aggregate index that shows the degree to which women are empowered in their households and communities and the degree of inequality between women and men within the household. The WEAI is an aggregate index reported at the country or regional level that is based on individual-level data on primary male and female decision makers within the same households.

The WEAI was initially developed to track changes in women’s empowerment levels that occur as a direct or indirect result of interventions under FTF, the USG’s global hunger and food security initiative. It was collaboratively developed by USAID, International Food Policy Research Institute (IFPRI), and Oxford Poverty and Human Development Initiative (OPHI).

The WEAI survey instrument consists of a series of six modules that are administered to both men and women. The WEAI survey is conducted only in households with either dual female and male adults or in households with a single female adult. In Haiti, the WEAI was administered in all eligible households in the 62 rural SDEs. Of the 1,550 rural households included in the sample, the WEAI was completed in 1,017 dual female/male households and 365 female-only households.

The overall WEAI results are presented in Table 3.11.1, which is similar to the format used for the WEAI pilot results.<sup>40</sup> The WEAI for Haiti is 0.846. It is a weighted average of the 5DE sub-index value of 0.835 and the GPI subindex value of 0.941.

Table 3.11.1 Women’s Empowerment in Agriculture Index (WEAI) in Haiti

Indexes	Haiti	
	Women	Men
Disempowered Headcount (H)	49.6%	41.4%
Average Inadequacy Score (A)	33.3%	31.9%
Disempowerment Index (M0)	0.165	0.132
5DE Index (1-M0)	0.835	0.868
Number of observations	1383	1015
% of Data Used	74.1%	78.7%
% of women with no gender parity (HGPI)	37.1%	
Average Empowerment Gap (IGPI)	15.9%	
GPI	0.941	
No. of women in dual households	1014	
% of Data Used	69.6%	
WEAI	0.846	

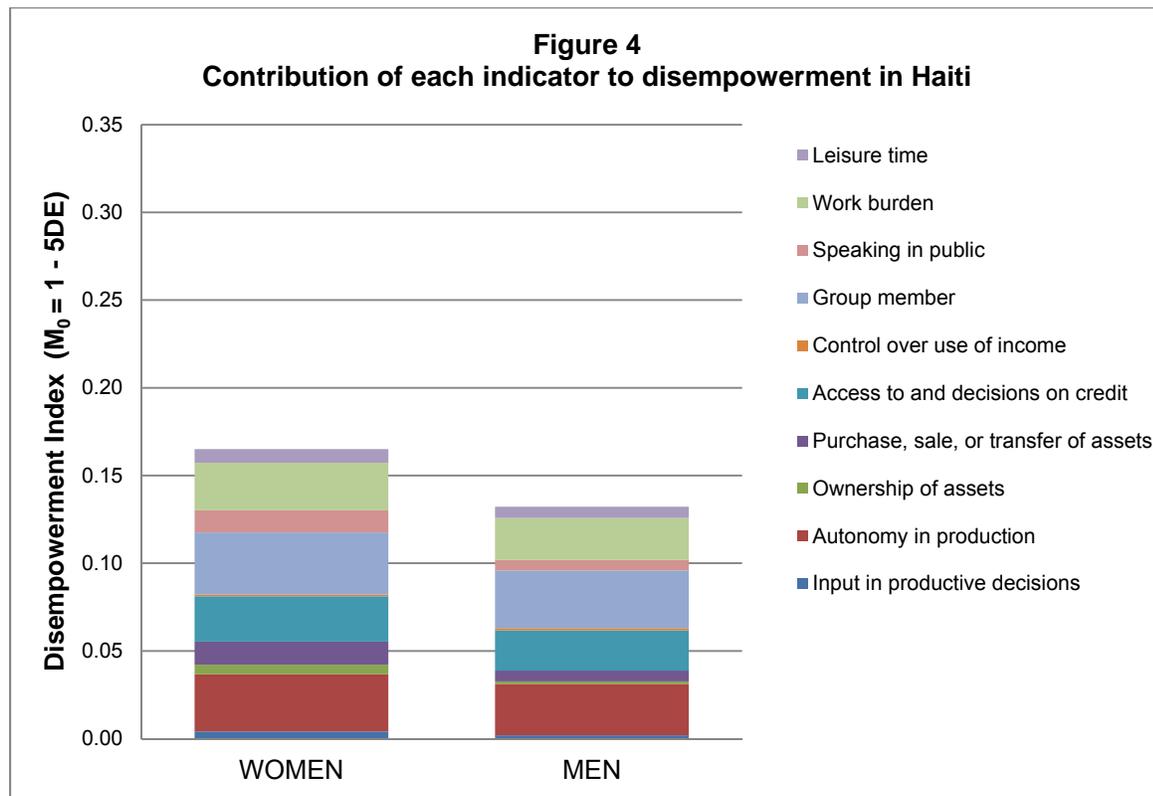
The components of the 5DE for Haiti show that 49.6 percent of women are disempowered, or conversely, 50.4 percent (1 - H) are empowered. These disempowered women have, on average, inadequate achievements in one-third (33.3 percent) of the domains. Thus, the disempowerment index for women is 0.496 times 0.333, or 0.165. For men, 41.4 percent are not yet empowered, and the average inadequacy score among these men is 31.9 percent, resulting in a disempowerment index of 0.132.

<sup>40</sup> Alkire, S., Meinzen-Dick, R., Peterman, A., Quisumbing, A. R., Seymour, G., & Vaz, A. (2012). *The Women’s Empowerment in Agriculture Index*. IFPRI Discussion Paper No. 01240. Poverty, Health & Nutrition Division, International Food Policy Research Institute.

The GPI shows that 62.9 percent (1- HGPI) of women have gender parity with the primary male in their household. Of the 37.1 percent of women with no gender parity, the empowerment gap between them and the male in their household is 15.9 percent. Thus, the overall GPI in Haiti is  $\{1 - (37.1\% \times 15.9\%)\}$  or 0.941.

Figure 4 compares the configuration of men’s and women’s disempowerment. The length of the bars represents the disempowerment index for women and men, respectively, while the composition of the bars represents the absolute contributions of each of the indicators to the disempowerment index. The most striking result from this figure is the very small gap between the disempowerment of women compared to men, and the strikingly similar results in the configuration of women’s disempowerment relative to men’s. For both women and men, lack of group membership and autonomy in production are the indicators with the largest contribution to disempowerment. The indicators that contribute the least to disempowerment for both men and women are control over use of income and ownership of assets.

The results for Haiti compared with the results from the three pilot countries of Bangladesh, Uganda and Guatemala<sup>41</sup> show that women in Haiti have a higher level of empowerment and have achieved a level of empowerment much closer to that of the men compared to their counterparts in these pilot countries.



<sup>41</sup> Ibid. See Tables 9.1, 9.3, and 9.5

## 4. DISCUSSION OF LIMITATIONS AND ISSUES ENCOUNTERED

The baseline data collection exercise was ambitious, aiming to collect a large amount of data on a wide variety of indicators. The length of the resulting questionnaires was a significant challenge, and it was determined that it would be unfeasible to collect all the data required within one integrated survey, so data collection was divided into two separate exercises, each managed by a different data collection firm (IHE and BRIDES). This added to the logistical complexity of the survey.

Additionally, the research environment in Haiti is hampered by significant capacity constraints. There are few data collection firms, and even fewer firms that are able to handle a survey of this complexity. Aware of these constraints, the project included a significant capacity building, supervision and quality control component. It is, however, difficult to find a firm with sufficient potential, and the difficulty doubles when two firms are needed.

Field teams encountered many of the expected challenges of working in difficult settings as well as some unexpected challenges. Some clusters were very remote and not accessible by vehicle, and it was particularly difficult to carry the heavy and bulky anthropometry equipment. Some clusters were sparsely populated and required long walks between selected households. In rural areas, entire villages were sometimes absent for full days due to weekly markets. Additionally, some enumeration areas were very unsafe due to high levels of crime, and the teams lost nearly five days of work in some areas due to a sudden increase in gun violence. Finally, Hurricane Sandy arrived at the start of fieldwork, delaying progress and increasing the difficulty of reaching some clusters.

Questionnaire length was also a challenge in the field. The expenditures portion was found to be particularly burdensome. In addition to the relatively long time needed to conduct this module, additional explanations were often necessary for the respondent to understand what was being asked. Despite careful probing by interviewers, respondents often provided responses that were contradictory. In particular, expenses that were both regular and irregular, such as health spending, led to confusion and an inability for interviewers to accurately and efficiently collect data. The length of the questionnaire led to visible respondent fatigue during interviews.

Although a vast amount of data were collected, the wide variety of topics and indicators meant that some topics could be covered only superficially. Indicators such as prevalence of injuries, revenue of household enterprises, vaccination of children and postnatal care are complex and require their own dedicated modules to be measured thoroughly. Some of these modules could not be developed in all their complexity due to questionnaire length constraints.

For the agricultural survey, it was difficult for respondents to recall and/or estimate amounts of losses, harvests, sales and income in general over the past year, even though the modules were broken into three distinct seasons. Many respondents had trouble grasping the dates and timing of the seasons because of the variation in growing and harvesting times for different crops. The survey was conducted late in the year (late October to early December) after the end of the primary rainy season and at the start of the dry season; however, many farmers were unable to report their harvests and sales for crops grown during the primary rainy season, which typically should have ended in August/September for most crops.

## 5. CONCLUSIONS

The purpose of the Haiti Baseline Survey was to collect baseline data in order to provide foundational information to assess progress toward the goals listed in USAID's Performance Monitoring Plan. USAID has increasingly focused on monitoring and evaluation, and this plan provides guidance on what data to collect and how to understand findings. The objectives listed in the plan are "to catalyze economic growth through investments in agriculture, energy and infrastructure" and "to ensure long-term stability through investments in public institutions." The ultimate goal is "a stable and economically viable Haiti." The USG's activities are concentrated in the three development corridors in order to foster governmental and population decentralization. The hypothesis is that investment in these key areas will foster broader growth throughout the country.

The survey provides data on a core set of indicators central to the mission's objectives. As previously described, the indicators fall across four broad pillars:

- A. Infrastructure and energy
- B. Food and economic security
- C. Health and other basic services
- D. Governance and rule of law

Because this survey was intended to provide data at an impact level, many of the indicators provide information on the situation of several pillars. For example, children's anthropometric measurements can be related to and therefore shed light on the family's socioeconomic status, agricultural productivity, and access to health care, all of which are ultimately impacted by access to infrastructure and rule of law. While acknowledging that the indicators are highly interrelated, this study provides an overview of the baseline situation in each pillar.

Pillar A, infrastructure and energy, seeks to improve infrastructure that supports community and commercial development. While this type of development is relatively difficult to measure at the household level, the indicators of shelter performance improvement and improved access to energy can be assessed at the household level. The baseline study collected data on household characteristics, energy, and water and sanitation. Findings indicate that while more than three-quarters of households use an improved source of drinking water, few households (12 percent) have access to water directly at home and only about half of households treat their drinking water using an appropriate method. Fewer than half of households have access to an improved, not shared toilet. Around half of households reported access to electricity at home. The majority of homes have concrete, cement, or brick floors and one or two rooms for sleeping.

Pillar B seeks to increase food and economic security through agricultural growth; technical assistance and training to support micro, small, and medium enterprises; and increased access to capital. Indicators of advancement in these areas at an individual level include improved nutrition, decreased wasting and stunting, and higher levels of employment. At a household level, they include decreased hunger, increased agricultural productivity, and greater numbers of household enterprises. Current data suggest that there is ample room for growth under this pillar as well. Only around one-quarter of adult household members performed activity for economic gain the week preceding the survey. Around one-fifth of households operated a household enterprise in the last year. The dietary data suggest significant challenges in nutrition in the country.

Pillar C, health and other basic services, seeks to improve the population's health status and learning environment. USAID's intention is to support GOH to strengthen the Ministry of Health and Ministry of

Education in rebuilding and reforming systems and infrastructure for delivery of basic services. There is a breadth of indicators that could potentially shed light on the health status of the population, many of which are discussed in this report. These include rates of disability; access to health care and insurance; issues of fertility; and maternal, newborn and child health. Results in this area showed both strengths and weaknesses in the system. For example, fewer than half of households indicated using public schools in the last year. In addition, women report difficulty in accessing health care and insurance. Around one-third of women use contraception. Infant mortality rates are high and are more concentrated in rural areas, and vaccination rates are low.

Pillar D, governance and rule of law, aims to support more responsive governance and improved rule of law. While many indicators in this pillar are difficult to measure at the household level, it is possible to evaluate citizens' perceptions of electoral and legislative processes, functioning of the justice system and protection of human rights. Additionally, indicators of access to government representatives and services were explored in this study. The results indicate great variability in the performance of the government. Trust in the government is low, and respondents have little faith in the fairness of elections. The results indicate wide access to certain public services, such as public markets, roads and transport, and limited access to such services as sports installations, the legal system and the police. Satisfaction with schools and police were relatively high, while satisfaction with markets, roads and waste disposal services were fairly low. While around one-quarter of households participated in civic organizations in the past year, fewer than one-quarter met with an elected representative in the past year.