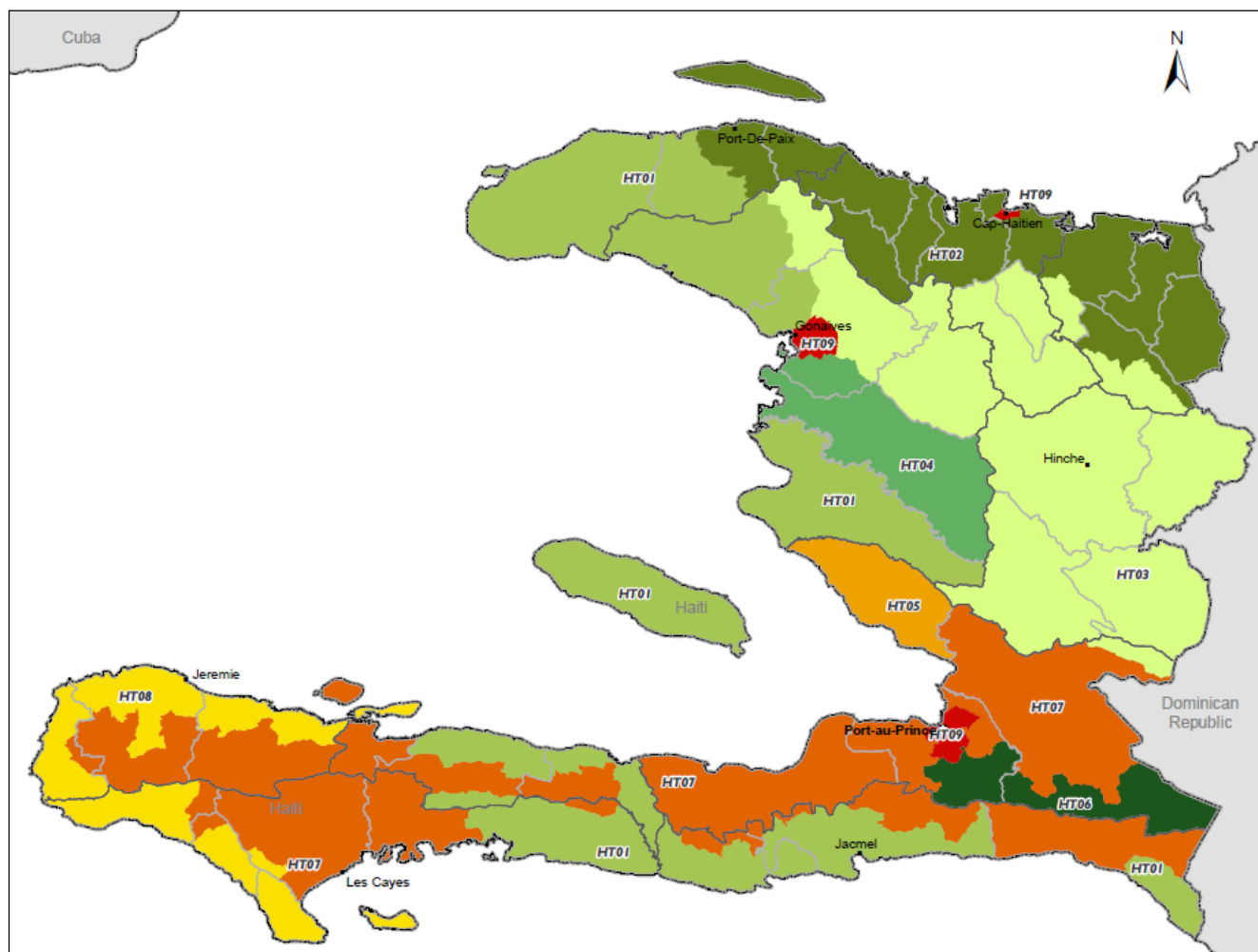


MAP OF LIVELIHOOD ZONES IN HAITI



- HT01 – Dry Coastal Maize and Charcoal
- HT02 – North Tubers and Horticulture
- HT03 – Central Plateau Maize and Tubers
- HT04 – Rice Plains of the Artibonite
- HT05 – Western Banana Plains of Archaie
- HT06 – West Gardening and Beans
- HT07 – South Beans, Bananas, and Petty Trade
- HT08 – Southwestern Coast Maize, Manioc, and Bush Products
- HT09 – Urban

- National Boundary
- Capital
- Department
- Cities



TABLE OF CONTENTS

Acknowledgments	vi
Acronyms, Abbreviations, and Terminology.....	vii
Introduction.....	1
Background on the use of HEA in Haiti.....	1
The Household Economy Analysis analytical framework	2
Methodology used in this study	3
National Overview of Rural Livelihoods in Haiti	5
Breakdown of Major Sources of Food and Income	7
Dry Coastal Maize and Charcoal (Zone HT01).....	9
Zone description	9
Market access	9
Seasonal calendar	9
Drivers of wealth.....	10
Sources of food	11
Sources of income.....	12
Expenditures.....	12
Calendar of major sources of food and income for poor households	13
Main hazards, coping strategies, and key parameters	14
North Tubers and Horticulture (Zone HT02).....	15
Zone description	15
Market access	15
Seasonal calendar	16
Drivers of wealth.....	16
Sources of food	17
Sources of income.....	18
Expenditures.....	18
Calendar of major sources of food and income for poor households	19
Main hazards, coping strategies, and key parameters	19
Central Plateau Maize and Tubers (Zone HT03).....	21
Zone description	21
Market access	21
Seasonal calendar	21
Drivers of wealth.....	23
Sources of food	24
Sources of income.....	24
Expenditures.....	25
Calendar of major sources of food and income for poor households	26
Main hazards, coping strategies, and key parameters	26
Rice Plains of the Artibonite (Zone HT04).....	28
Zone description	28
Market access	28
Seasonal calendar	29
Drivers of wealth.....	29
Sources of food	30
Sources of income.....	31
Expenditures.....	32
Calendar of major sources of food and income for poor households	32
Main hazards, coping strategies, and key parameters	33
Western Banana Plains of Arcahaie (Zone HT05).....	34
Zone description	34
Market access	34
Seasonal calendar	34
Drivers of wealth.....	35

Sources of food	36
Sources of income.....	37
Expenditures	38
Calendar of major sources of food and income for poor households	38
Main hazards, coping strategies, and key parameters	39
West Gardening and Beans (Zone HT06)	40
Zone description	40
Market access	40
Seasonal calendar	40
Drivers of wealth.....	41
Sources of food	42
Sources of income.....	42
Expenditures	43
Calendar of major sources of food and income for poor households	43
Main hazards, coping strategies, and key parameters	44
South Beans, Bananas, and Petty Trade (Zone HT07)	45
Zone description	45
Market access	45
Seasonal calendar	45
Drivers of wealth.....	46
Sources of food	47
Sources of income.....	47
Expenditures	48
Calendar of major sources of food and income for poor households	49
Main hazards, coping strategies, and key parameters	49
Southwestern Coast Maize, Manioc, and Bush Products (Zone HT08)	51
Zone description	51
Market access	51
Seasonal calendar	51
Drivers of wealth.....	52
Sources of food	53
Sources of income.....	53
Expenditures	54
Calendar of major sources of food and income for poor households	55
Main hazards, coping strategies, and key parameters	55
Annex 1: Villages Visited by Livelihood Zone.....	56
Annex 2: List of Field Team Participants.....	57

LIST OF FIGURES

Figure 1 Breakdown of sources of food during the reference year by livelihood zone.....	7
Figure 2 Breakdown of sources of income during the reference year by livelihood zone	7
Figure 3 Breakdown of total annual incomes for the reference year by livelihood zone.....	8
Figure 4 Seasonal calendar in livelihood zone HT01 (Dry Coastal Maize and Charcoal)	10
Figure 5 Breakdown of sources of food in livelihood zone HT01 (Dry Coastal Maize and Charcoal)	11
Figure 6 Breakdown of sources of income in livelihood zone HT01 (Dry Coastal Maize and Charcoal)	12
Figure 7 Breakdown of expenditures in livelihood zone HT01 (Dry Coastal Maize and Charcoal)	13
Figure 8 Main components of the food access calendar for poor households in livelihood zone HT01 (Dry Coastal Maize and Charcoal).....	13
Figure 9 Seasonal calendar in livelihood zone HT02 (North Tubers and Horticulture).....	16
Figure 10 Breakdown of sources of food in livelihood zone HT02 (North Tubers and Horticulture)	17
Figure 11 Breakdown of sources of income in livelihood zone HT02 (North Tubers and Horticulture)	18
Figure 12 Breakdown of expenditures in livelihood zone HT02 (North Tubers and Horticulture)	18
Figure 13 Main components of the food access calendar for poor households in livelihood HT02 (North Tubers and Horticulture)	19

Figure 14 Seasonal calendar in livelihood zone HT03 (Central Plateau Maize and Tubers)	22
Figure 15 Breakdown of sources of food in livelihood zone HT03 (Central Plateau Maize and Tubers)	24
Figure 16 Breakdown of sources of income in livelihood zone HT03 (Central Plateau Maize and Tubers)	24
Figure 17 Breakdown of expenditures in livelihood zone HT03 (Central Plateau Maize and Tubers).....	25
Figure 18 Main components of the food access calendar for poor households in livelihood zone HT03 (Central Plateau Maize and Tubers)	26
Figure 19 Seasonal calendar in livelihood zone HT04 (Rice Plains of the Artibonite).....	29
Figure 20 Breakdown of sources of food in livelihood zone HT04 (Rice Plains of the Artibonite)	30
Figure 21 Breakdown of sources of income in livelihood zone HT04 (Rice Plains of the Artibonite)	31
Figure 22 Breakdown of expenditures in livelihood zone HT04 (Rice Plains of the Artibonite)	32
Figure 23 Main components of the food access calendar for poor households in livelihood zone HT04 (Rice Plains of the Artibonite)	32
Figure 24 Seasonal calendar in livelihood zone HT05 (Western Banana Plains of Arcahaie)	35
Figure 25 Breakdown of sources of food in livelihood zone HT05 (Western Banana Plains of Arcahaie)	36
Figure 26 Breakdown of sources of income in livelihood zone HT05 (Western Banana Plains of Arcahaie)	37
Figure 27 Breakdown of expenditures in livelihood zone HT05 (Western Banana Plains of Arcahaie).....	38
Figure 28 Main components of the food access calendar for poor households in livelihood zone HT05 (Western Banana Plains of Arcahaie).....	38
Figure 29 Seasonal calendar in livelihood zone HT06 (West Gardening and Beans).....	41
Figure 30 Breakdown of sources of food in livelihood zone HT06 (West Gardening and Beans)	42
Figure 31 Breakdown of sources of income in livelihood zone HT06 (West Gardening and Beans)	42
Figure 32 Breakdown of expenditures in livelihood zone HT06 (West Gardening and Beans)	43
Figure 33 Main components of the food access calendar for poor households in livelihood zone HT06 (West Gardening and Beans)	43
Figure 34 Seasonal calendar in livelihood zone HT07 (South Beans, Bananas, and Petty Trade)	46
Figure 35 Breakdown of sources of food in livelihood zone HT07 (South Beans, Bananas, and Petty Trade)	46
Figure 36 Breakdown of sources of income in livelihood zone HT07 (South Beans, Bananas, and Petty Trade)	47
Figure 37 Breakdown of expenditures in livelihood zone HT07 (South Beans, Bananas, and Petty Trade)	48
Figure 38 Main components of the food access calendar for poor households in livelihood zone HT07 (South Beans, Bananas, and Petty Trade)	49
Figure 39 Seasonal calendar in livelihood zone HT08 (Southwestern Coast Maize, Manioc, and Bush Products)	52
Figure 40 Breakdown of sources of food in livelihood zone HT08 (Southwestern Coast Maize, Manioc, and Bush Products)	53
Figure 41 Breakdown of sources of income in livelihood zone HT08 (Southwestern Coast Maize, Manioc, and Bush Products)	53
Figure 42 Breakdown of expenditures in livelihood zone HT08 (Southwestern Coast Maize, Manioc, and Bush Products)	54
Figure 43 Main components of the food access calendar for poor households in livelihood zone HT08 (Southwestern Coast Maize, Manioc, and Bush Products)	55

LIST OF TABLES

Table 1 Concept of HEA-based outcome analysis.....	2
Table 2 Steps of the HEA analytical framework	3
Table 3 Drivers of wealth in livelihood zone HT01 (Dry Coastal Maize and Charcoal)	10
Table 4 Key parameters in livelihood zone HT01 (Dry Coastal Maize and Charcoal)	14
Table 5 Drivers of wealth in livelihood zone HT02 (North Tubers and Horticulture)	Error! Bookmark not defined.
Table 6 Key parameters in livelihood zone HT02 (North Tubers and Horticulture)	20
Table 7 Drivers of wealth in livelihood zone HT03 (Central Plateau Maize and Tubers)	23
Table 8 Key parameters in livelihood zone HT03 (Central Plateau Maize and Tubers)	27
Table 9 Drivers of wealth in livelihood zone HT04 (Rice Plains of the Artibonite)	30
Table 10 Key parameters in livelihood zone HT04 (Rice Plains of the Artibonite)	33
Table 11 Drivers of wealth in livelihood zone HT05 (Western Banana Plains of Arcahaie)	35
Table 12 Key parameters in livelihood zone HT05 (Western Banana Plains of Arcahaie)	39
Table 13 Drivers of wealth in livelihood zone HT06 (West Gardening and Beans)	41
Table 14 Key parameters in livelihood zone HT06 (West Gardening and Beans).....	44
Table 15 Drivers of wealth in livelihood zone HT07 (South Beans, Bananas, and Petty Trade)	46

Table 16 Key parameters in livelihood zone HT07 (South Beans, Bananas, and Petty Trade)	50
Table 17 Drivers of wealth in livelihood zone HT08 (Southwestern Coast Maize, Manioc, and Bush Products)	52
Table 18 Key parameters in livelihood zone HT08 (Southwestern Coast Maize, Manioc, and Bush Products)	55

LIST OF MAPS

Map 1 Fishing areas of Haiti.....	6
-----------------------------------	---

ACKNOWLEDGMENTS

FEWS NET and the *Coordination Nationale de la Sécurité Alimentaire* (CNSA), the Haitian National Food Security Agency, would like to thank the GVC (*Gruppo di Volontariato Civile*) and Oxfam for their close collaboration and enthusiasm during the process of developing the livelihood profiles. This study was made possible by funding from the United States Agency for International Development (USAID/Haiti) and the European Union.

FEWS NET and the CNSA would also like to express their gratitude to the local organizations and governments and numerous other participants who, in one way or another, gave their time and expertise to help complete the required field work. We would also like to thank each and every member of the data collection team who, with self-sacrifice, spared no effort to help attain the mission's objective.

Lastly, we are ever so grateful to the communities visited by the mission for their patience, availability, and welcoming attitude as they responded to our inquiries with detailed information on their various economic activities.

ACRONYMS, ABBREVIATIONS, AND TERMINOLOGY

ACF	<i>Action Contre la Faim</i> (Action Against Hunger)
ca	<i>Carreau</i> (Haitian land measurement; one <i>carreau</i> = 1.29 hectares)
CNSA	<i>Coordination Nationale de la Sécurité Alimentaire</i> (Haitian National Food Security Agency)
DDA	<i>Direction Départementale de l'Agriculture</i> (Departmental Bureau of Agriculture)
FAO	Food and Agriculture Organization (of the United Nations)
FEG	Food Economy Group
FEWS NET	Famine Early Warning Systems Network
GDP	Gross domestic product
GVC	<i>Gruppo di Volontariato Civile</i> (an Italian NGO)
HEA	Household Economy Approach
HTG	Haitian gourde (national currency)
kcal	Kilocalorie
kg	Kilogram
MARNDR	<i>Ministère de l'Agriculture, des Ressources Naturelles et du Développement Rural</i> (Haitian Ministry of Agriculture, Natural Resources, and Rural Development)
mm	Millimeter
Money Transfer	Income received from household members living away from home for part of the year (generally < six months)
MPP	<i>Mouvman Peyizan Papay</i> (Papaye Peasant Movement)
pppd	per person per day
Remittance	Income received from nonhousehold members living outside the area
USAID	United States Agency for International Development
WFP	World Food Programme (of the United Nations)

INTRODUCTION

A livelihood is the sum of the ways in which households support themselves from year to year and survive during hard times. There is a growing interest in the use of livelihoods analysis as a first step in gaining a better understanding of many development-related issues, ranging from emergency response and disaster mitigation to long-term development. This interest is rooted in two basic observations:

- First, information on any given area or community can be properly interpreted only with knowledge of the environment in which people live; and
- Second, assistance programs cannot be properly designed to fit local circumstances if planners are unfamiliar with local livelihoods and do not know whether the effects of proposed interventions will complement or clash with existing strategies.

The eight livelihood profiles presented in this report describe the main characteristics of the livelihood zones emerging from Haiti's territorial division at a workshop for food security partners in July 2014. The data furnished in these profiles were collected using the Household Economy Analysis (HEA) approach.

Livelihood profiles are not meant to be used alone in assessing the needs of a given population or for program planning purposes. They are designed to serve as a tool providing information on the environment in which people live and as a complement to other food security data, such as monitoring data on nutrition, crop production, market prices, etc. Used in this manner, livelihood profiles help food security analysts better understand current shocks in the context of the local definition of what is normal for a given population by learning how households react to a whole series of events. The value of livelihood profiles lies in their ability to help quickly spot a developing crisis, conduct more effective, better-targeted, and more in-depth assessments, and thus help mount a more rapid response to the needs of the population in question – in other words, to provide a more effective early warning. However, these profiles are not designed to provide the degree of statistical reliability or type of highly localized data so essential for the planning of local programs.

The report comprises the following three main sections:

1. Introduction
 - Background explaining how the HEA methodology used in Haiti was developed
 - A brief description of the HEA's analytical framework
2. National overview
 - A breakdown of major sources of food and income in Haiti, with a broad view of Haitian livelihoods
 - A graphic summary of food sources, income sources, and total income for Haiti's eight livelihood zones
3. Livelihood zone profiles: findings from the analysis of each of Haiti's eight livelihood zones

Background on the use of HEA in Haiti

FEWS NET and *Coordination Nationale de la Sécurité Alimentaire* (CNSA), a Haitian government food security agency, have been working together for more than ten years to develop a livelihood-based strategy and ensure that available tools and skills for livelihoods analysis at the country level meet CNSA's organizational and decision-making needs.

In 2005, FEWS NET and its partners in livelihoods-based food security analysis (USAID/Haiti, CARE, Catholic Relief Services, Save the Children, and World Vision) drew up a livelihood zone map of Haiti, along with livelihood profiles for the eight identified livelihood zones. The associated study was then used to profile food-insecure rural households based on their livelihoods as part of a survey conducted by CNSA in 2007 (a Comprehensive Food Security and Vulnerability Analysis, or CFSVA). The same study was also used in a National Food Security Survey (NFSS) conducted in 2011 through a stratified sampling process based on the country's administrative subdivisions and the livelihood zoning process. Finally, in May 2009, FEWS NET conducted an HEA of urban populations in shantytown areas of Port-au-Prince in conjunction with CNSA, with support from CHF¹ and Concern.

¹ Cooperative Housing Foundation (currently known as "Global Communities").

However, this first livelihood zone map and set of livelihood profiles have outlived their usefulness (it is recommended that the validity of these data be rechecked after five years). In addition, Haiti's rural populations have been impacted by a number of major events since 2005. They were hard hit by hurricanes in 2008 and 2010, took in displaced populations in the aftermath of the January 12, 2012 earthquake, and were later affected by the cholera outbreak. Furthermore, the 2005 profiles were established using a comparatively less detailed methodology, precluding the use of quantitative outcome analysis tools. The production systems and markets in many of the livelihood zones are believed to have changed enough to warrant an examination of available tools. Thus to support the national livelihoods strategy, the country's food security partners agreed to update existing tools by establishing a new livelihood baseline for the country.

The Household Economy Analysis (HEA) analytical framework

HEA is a livelihood-based analytical framework designed to provide decision makers with actionable food security data.

Food security analysis is far from being an easy task, since the degree of food security can vary from one area to another within the same country, from one segment of the population to another within the same area, from one time of year to another, and from one year to another. Thus, all components of HEA involve a geographic breakdown (zoning), a demographic breakdown (in most cases, by wealth group), and a seasonal breakdown (seasonality or intraannual versus interannual fluctuations).

These breakdowns enable HEA analysts to meet the needs of decision makers in organizations working to promote food security, with actionable data on the following points:

- **Who** or which types of households are unable to meet their basic needs in the consumption year in question?
- **Where** are these households?
- **When**, or at what point in time, will their needs be most pressing?
- **How much** do they need? How large is their basic needs gap?

To answer these questions, the HEA analytical framework establishes the degree of access to adequate food intake as defined by the international standard of 2,100 kcal per person per day (pppd). The degree of food access is established based on three types of key information:

- Where and how households obtain their food;
- The sources and amount of household cash income; and
- The relative weights of different household expenditure items.

HEA enables analysts to make a quantitative assessment of the magnitude of the impact of a specific shock on different groups in a particular livelihood zone. In HEA, populations are considered to be at risk for food insecurity based on a determination of the degree of vulnerability of their livelihoods and their potential to cope with a specific hazard. The HEA approach combines two types of data to make projections on food security conditions in a particular livelihood zone: (1) livelihood data (the baseline); and (2) monitoring data on key parameters that could affect the household economy. Thus HEA produces an estimate (projection) of households' access to food and income for the year in progress, taking into account the impact of shocks and the contributions of coping strategies in terms of food and income (Table 1).

Table 1 Concept of HEA-based outcome analysis

<u>CONTEXT (Baseline)</u>	<u>CHANGES</u>	<u>OUTCOME</u>
Livelihood data for the reference year	+ Monitoring or seasonal survey data	→ Analysis of the projected situation and assistance needs

Source: Food Economy Group

It is extremely important to understand how and why households are affected by shocks to devise appropriate responses designed to reduce household vulnerability to specific hazards over the short, medium, and long term. Monitoring parameters can be used to complement the baseline data for an ongoing analysis of the situation and associated needs.

HEA breaks down livelihood data by wealth group. The wealth breakdown (by “very poor,” “poor,” “middle,” and “better-off” households) and the characteristics of each group are established based on thresholds defined by the actual population (represented by key informants). This means that the same defining characteristics of a “poor” household in one livelihood zone, in theory, could denote a “better-off” household in another livelihood zone. A wealth breakdown is necessary to better understand the differences among households in the same village or same livelihood zone and thus distinguish between the vulnerabilities and coping mechanisms of different household groups.

Lastly, the HEA analytical framework is broken down into six steps. The objective of steps 1, 2, and 3 is to create a baseline for projecting outcomes in steps 4, 5, and 6. Table 2 contains a brief explanation of these six steps.² Note that the data presented in this report are only a baseline. Full usage of the HEA analytical framework requires the systematic monitoring of key parameters and an in-depth study of the changes in these parameters as the basis for making projections.

Table 2 Steps of the HEA analytical framework

Step #	Name	Objective
Baseline	1 Livelihood zoning	Delineate geographic areas in which people share the same livelihoods and have similar options as sources of food and income.
	2 Wealth breakdown – characteristics of wealth groups	Group households based on local definitions of wealth to quantify their livelihoods (this step is part of the field work).
	3 Quantification of livelihoods	Quantify the sources of food and income and expenditure items of a typical household in each wealth group (this step is also part of the field work).
Outcome analysis	4 Quantification of the shock/hazard	Translate a shock into economic consequences at the household level to mathematically relate it to each livelihood activity in question.
	5 Analysis of coping strategies	Assess the ability of households to react to different hazards.
	6 Projection of outcomes (scenarios)	Analyze the outcome of a shock against survival and livelihood protection thresholds to establish the need for outside assistance.

Source: Food Economy Group

Methodology used in this study

The first step of the analytical framework involves the establishment of a baseline for each geographic area (Table 2, steps 1, 2, and 3) to serve as the foundation for making future projections. The outputs from the initial livelihood analysis (i.e. a livelihood zone map, baseline, and accompanying profiles) show the different ways in which populations gain access to food and income to survive and protect their livelihoods. They also provide information on the timing of major economic activities to help provide a better understanding of seasonal fluctuations in the household economy. Data are collected for a “reference” or “standard” year. The profiles presented in this report use 2013-2014 as the reference year.

Zoning

HEA first divides the country or the part of the country to be studied into different livelihood zones. Among other things, the livelihood zoning process takes into account agroecological, geographic, and market access differences. Households in the same livelihood zone generally engage in similar economic activities and thus are likely affected by the same hazards. A zoning workshop was held in Port-au-Prince in July 2014 to update the national livelihood zone map. The participants in the workshop included members of the technical staffs of CNSA, FEWS NET, *Gruppo di Volontariato Civile* (GVC), Oxfam, *Action Contre la Faim* (ACF), the Food and Agriculture Organization (FAO), and the World Food Programme (WFP).

Training in data collection

Following the zoning workshop, a group of approximately 40 people received training in the HEA methodology. The five-day training menu included sessions on the HEA analytical framework, zoning, purposive sampling, the reference year, the wealth breakdown, calculating food energy content, quantifying sources of income and expenditures, seasonality, and coping strategies. The training period also afforded an opportunity to test the data collection tools in a pilot exercise and to review the data collection methods used in the field and the strategies and tactics used to ensure data quality and consistency.

² A full description of the HEA approach, along with common practices used in the collection of field-level data, can be found in «The Practitioners’ Guide to the Household Economy Approach,” Boudreau, T. et al, The Food Economy Group (FEG) and Save the Children UK (2008) at <http://www.fegconsulting.com/resource/practitioners-guide-to-hea>.

Field work (data collection)

Raw data were collected in two rounds between August and September 2014. The data collection process in each livelihood zone was based mainly on interviews with key informants in each village or, in other words, people able to provide an overview of their village. The sampling process targeted eight villages in each livelihood zone considered representative of the characteristics of that zone. The interviews with key informants dealt with production systems and their seasonal nature, market access, and different types of risks and their effects on the local economy. During the interview process, participants were asked to classify households according to their wealth using local criteria specific to each village. A subset of members of households in each wealth group was later chosen by community leaders to form four focus groups. A special effort was made to assemble groups of four to eight members with a balanced number of men and women. The information collected through interviews with these focus group members was used to develop quantitative data on the typical sources of food and income of households in each wealth group over the course of a more or less average reference year and on the strategies used in bad years. These interviews also helped confirm or clarify the economic characteristics and drivers of wealth identified by community leaders.

One of the main features of the field work conducted as part of the HEA approach is the interviewer's constant efforts to cross-check all information for consistency. To this end, s/he makes a series of rapid assessments to "see beyond the obvious" based on the following reference points:

- The existence of sufficient food supplies as defined by basic energy requirements (2,100 kcal per person per day/pppd). Thus the figures presented throughout the report show the share of food energy needs met by different available sources of food throughout the year based on the international minimum standard of 2,100 kcal pppd. HEA considers only high-calorie foods and does not deal with detailed nutritional data.
- The existence of adequate annual incomes to cover food purchases and other household needs (the correlation between annual expenditures and earned income).

The data collection phase also included interviews of staff members in technical departmental offices and market surveys to corroborate the data collected in the field and to gain a deeper understanding of each livelihood zone in general.

Data entry and analysis

Data were input as the field work was conducted to ensure continuous close monitoring of the data collection process. An in-depth analysis of the data was made in conjunction with the data collection team immediately upon completion of the field work. This final analysis was designed to provide a standard picture of the livelihoods of each wealth group, supported by quantitative and qualitative data. A comprehensive downstream review of the baseline data helped ensure the consistency of the country-level data.

Preparation and review of livelihood profiles

The heads of the various field teams drew up summary profiles based on the quantitative and qualitative data collected and analyzed throughout the field work phase. The final report was drawn up by two consultants and approved by the team members and country technicians and partners taking part in the exercise.

The information presented in this report refers to the period from July 2013 through June 2014. Note that these dates do not coincide perfectly with the food consumption calendar in certain livelihood zones. Lastly, the profiles presented in this report should be valid for a period of approximately five years (through 2019), barring any deep-seated rapid changes in the local economies in question.

NATIONAL OVERVIEW OF RURAL LIVELIHOODS IN HAITI

Haiti occupies the western third of the island of Hispaniola, which lies between the Atlantic Ocean and the Caribbean Sea. It is a tropical and mostly mountainous country. Gently sloping plains and plateaus suitable for farming cover only a third of the country's total surface area, though the agriculture sector employs most of the rural workforce and generates approximately 25 percent of GDP (gross domestic product). Haiti has a good climate for farming, with a rainy season from April to June followed by a second rainy season from August to November. The hurricane season runs from June through the end of November, spanning nearly half the calendar year.

According to 2012 estimates by the *Institut Haïtien de Statistique et d'Informatique* (IHSI), the Haitian Bureau of Statistics and Information Technology, the country has a population of 10,413,211, including 5,258,271 rural residents³ (half the population). Population density is high, at around 375 inhabitants per square kilometer.² Rural livelihoods, the subject of this study, are extremely varied due to a number of factors, including differences in elevation and their effect on climate and production systems, population density, the lack of adequate production infrastructure, the unstable political climate, the dependence on foreign markets (for imports, funding, and job opportunities), the variable climate, and environmental degradation. These factors force rural households to resort to any and all available strategies for maintaining their livelihoods, mainly in crop production but in other areas as well.

Most farming units in Haiti are small subsistence farms. Haiti's inability to compete with imports has considerably weakened the farming sector, from which an increasingly large share of production is earmarked for sale on domestic markets. Crop production accounts for approximately half the country's total available food supply. The other half consists of imports, with a small percentage in the form of food assistance. Thus market purchases (requiring cash) are a major source of food, even in Haiti's crop-growing areas.

Natural disasters present frequent disruptions to the farming sector. Recent examples include Hurricanes Gustav, Hanna, and Ike in 2008, Hurricane Thomas in 2010, and the drought and Hurricanes Isaac and Sandy in 2012. Environmental degradation has made the farming sector extremely vulnerable to hurricanes and floods by reducing soil fertility and limiting the amount of arable land. The lack of resilience and preparedness for these types of shocks puts a large part of Haiti's population at risk for food insecurity in their aftermath.

In addition, deregulation policies, the increasingly small size of farming units, the shortage of labor (due to heavy rural-urban and external migration), and the lack of adequate production infrastructure and supporting services (credit, agricultural and livestock extension services, and poor access to inputs and market price data) only heighten the country's dependence on imported staple foods.⁴

Small-scale animal production is the main cornerstone of the livestock sector, generally accompanied by family farming activities as a source of income generation, particularly during lean periods. Livestock-raising also plays a crucial role as a savings mechanism. In fact, livestock are considered a reliable investment and valuable productive asset in rural communities. Donkeys, mules, and horses are still the main mode of transport in rural areas. As far as the fishing sector is concerned, while the country's 1,535 kilometers of coastline hold considerable potential for marine resource development, the fishing industry (including fish farming) has attracted little attention as a branch of economic activity in Haiti. It has more of an impact in certain coastal areas with fewer other economic opportunities, where it accounts for a significant share of local revenues. In any event, the large volumes of imported fish, meat, eggs, and milk suggest the existence of a considerable and largely untapped development potential in both the livestock-raising and fishing sectors that, if realized, could meet domestic demand.

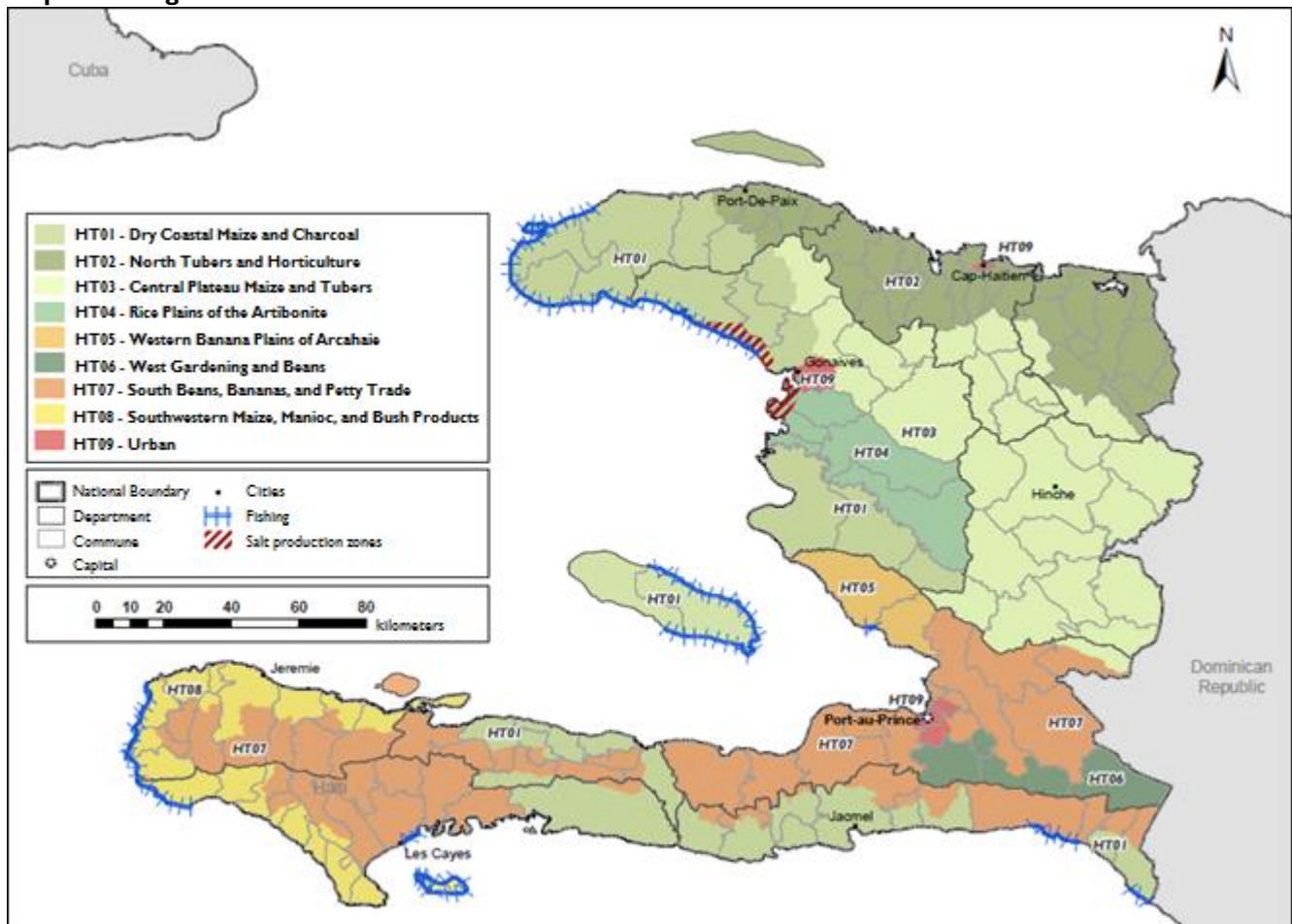
It should be noted that the livelihood profiles include no real meaningful discussion of either the fishing industry or of the livelihoods of fishermen living along the coast, as fishing populations account for only a small share of the country's total population and even that of the livelihood zones with the largest number of fishermen. As of 2003, the fishing sector employed approximately 55,000 people, or a mere 0.6 percent of the population. In fact, not all coastal populations even

³ Haitian Institute of Statistics and Information Technology (2012), "*Population totale, population de 18 ans et plus, ménages et densités estimés en 2012*" (Total population, population of 18 years and older, households and densities estimated in 2012).

⁴ CNSA (2010), "*Enquête nationale de sécurité alimentaire*" (National Food Security Survey).

count fishing among their livelihood activities. Only certain villages in certain areas identified in the livelihood zoning process in June 2014 actually engage in fishing activities (see Map 1).

Map 1 Fishing areas of Haiti



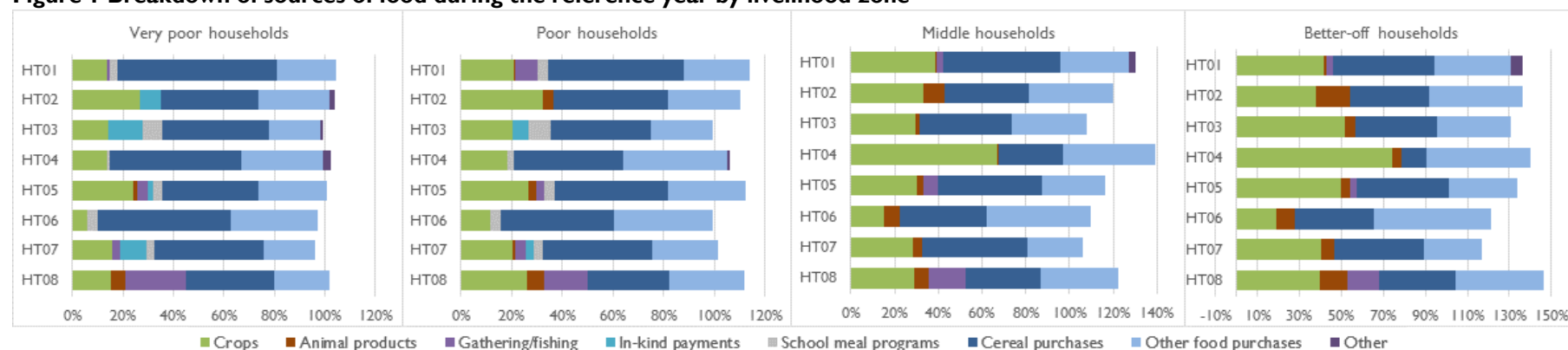
Source: FEWS NET

Please consult the following references as a good starting point to learn more about the fishing sector in Haiti: *Fishery Country Profile* ([FAO 2005](#)) and [MARNDP](#).

Finally, note that Haiti's neighbor, the Dominican Republic, figures prominently in local livelihoods. The border zone attracts Haitians from all parts of the country looking to take advantage of available job and trading opportunities in border areas of Haiti or in the Dominican Republic. Thus, the population of Haitian villages in the border zone has swollen over the last ten years. According to current estimates, close to one million Haitians live in the Dominican Republic and over 90 percent of farm workers in that country are Haitian nationals, most of whom are undocumented migrant workers who complain of being increasingly exploited.⁵

⁵ United Nations Environment Program, UNEP (2013), "Haiti – Dominican Republic: Environmental Challenges in the Border Zone."

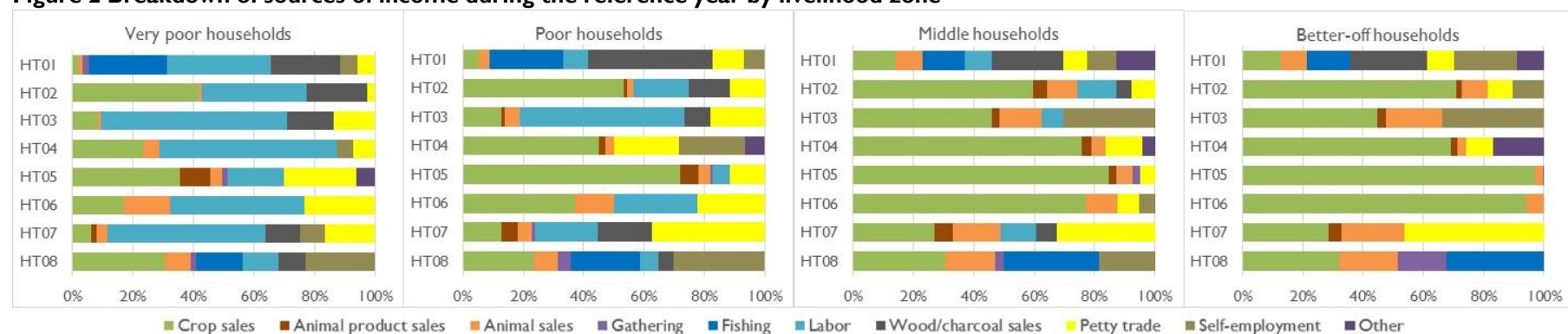
BREAKDOWN OF MAJOR SOURCES OF FOOD AND INCOME

Figure 1 Breakdown of sources of food during the reference year by livelihood zone

Source: FEWS NET

Most Haitian household groups were able to meet their basic food needs during the reference year (Figure 1). The livelihood zones in which very poor households have the most difficulty meeting their minimum energy requirement (2,100 kcal pppd) are HT03 (Central Plateau Maize and Tubers) and HT07 (South Beans, Bananas, and Petty Trade), the same livelihood zones in which very poor households have the lowest incomes.

The importance of farming as a source of food is greater for the middle group of households and, even more so, for better-off households. Better-off households in four livelihood zones met half their basic energy needs with household crop production. All four of these livelihood zones are farming areas for rice, maize, tubers, or bananas. The main source of food for very poor and poor households in all livelihood zones is market purchase.

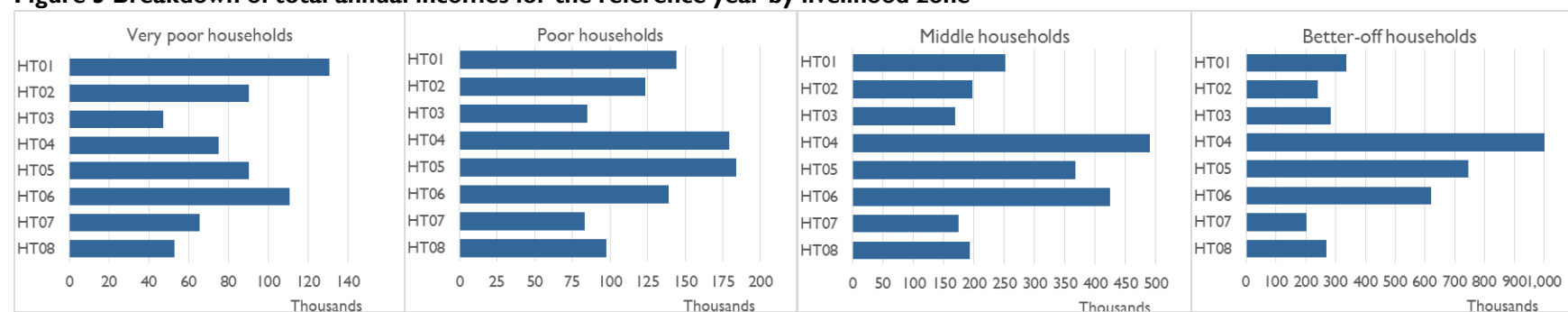
Figure 2 Breakdown of sources of income during the reference year by livelihood zone

Source: FEWS NET

The household economy of very poor and poor households is characterized by diversified sources of income (Figure 2). In contrast, better-off households have two to four sources of income and generate half their annual income from a single such source. The main sources of income for very poor households are informal (casual) labor and self-employment (mainly petty trade), while farming and livestock-raising are more important sources of income for middle and better-off households.

In general, poor households have 40-80 percent higher incomes than very poor households (Figure 3), while the annual incomes of better-off households are three to six times higher than those of very poor households. Income inequality is more pronounced in single-crop farming areas (livelihood zones HT04 and HT05).

Figure 3 Breakdown of total annual incomes for the reference year by livelihood zone



Source: FEWS NET

DRY COASTAL MAIZE AND CHARCOAL (LIVELIHOOD ZONE HT01)^{6, 7}

Zone description

Livelihood zone HT01 (Dry Coastal Maize and Charcoal) covers four different areas of the country, including virtually all of the Northwest Department, certain municipalities in the northwestern half and southern portion of the Artibonite Department, Gonâve Island, and parts of the south straddling the South and Southeast Departments. It includes coastal plain areas and dry brush and savanna grass-covered plateau areas.

The main defining characteristic of the areas included in this livelihood zone is their comparatively low rainfall. In general, annual rainfall ranges from 400 to 1,000 mm, with the northwest coast getting the least amount of rain. It can rain at any time of year, but more abundant rainfall activity occurs between April/May and November, coinciding with the growing season in this livelihood zone. However, there is a break in the rains between July and August, frequently accompanied by a sometimes slight, and other times severe, drought. This long rainy season and intervening dry spell support two low-potential growing seasons. The most productive municipalities in the Artibonite Department, known as Haiti's leading cereal-producing area, are in livelihood zones HT04 (Rice Plains of the Artibonite) and HT03 (Central Plateau Maize and Tubers).

All parts of the livelihood zone are within approximately 20 kilometers of the coast and the zone includes two-thirds of the country's fishing areas. However, the population of these fishing subzones (less than 50,000 inhabitants as of 2007) accounts for only approximately 10-15 percent of the zone's total population. Most agricultural activities, like most of the zone's population, are concentrated in the rainiest areas, where conditions are suitable for farming. Likewise, salt production is confined to a geographically restricted population concentrated mostly in the Anse-Rouge area, with modest levels of salt production in Baie-de-Henne, Gonaïves, and the Corridon Point area of the Artibonite Department.

Market access

Households in areas of the Artibonite and Northwest Departments in livelihood zone HT01 (the geographic frame of the field work) get most of their supplies from local markets in Seradotte-de-Bombardopolis, Forge, Jean-Rabel, Baie-de-Henne, Anse-Rouge, or Gonaïves and, from time to time, in Port-au-Prince. In addition to a few local crops (citrus fruits and tubers), these supplies normally include imported foodstuffs such as rice, wheat flour, vegetable oil, etc.

The first-line outlets for crops from this area are local markets such as those in Bombardopolis, Baie-de-Henne, Anse-Rouge, Port-de-Paix, Mare Rouge, and Môle-Saint-Nicolas, where the crops are purchased by crop collectors or middlemen and shipped to Port-au-Prince and Gonaïves.

Trade between large consumer centers (Port-au-Prince and Gonaïves) and crop-producing areas is severely limited by road conditions, translating into losses of income for the local economy and farming households. However, numerous available opportunities exist for generating more income and keeping the local economy going. Examples include the growing numbers of motorbike taxis carrying passengers and goods, the sale of animal and fish products, and salt-producing and related activities.

Climatic hazards such as drought have severely affected local crop production. Traders have had to bring in supplies from other areas of the country or turn to imports to ensure the availability of staple foodstuffs. Local market supplies of staple foods have not been too badly affected by climatic hazards, though most available foodstuffs are not produced locally.

Seasonal calendar

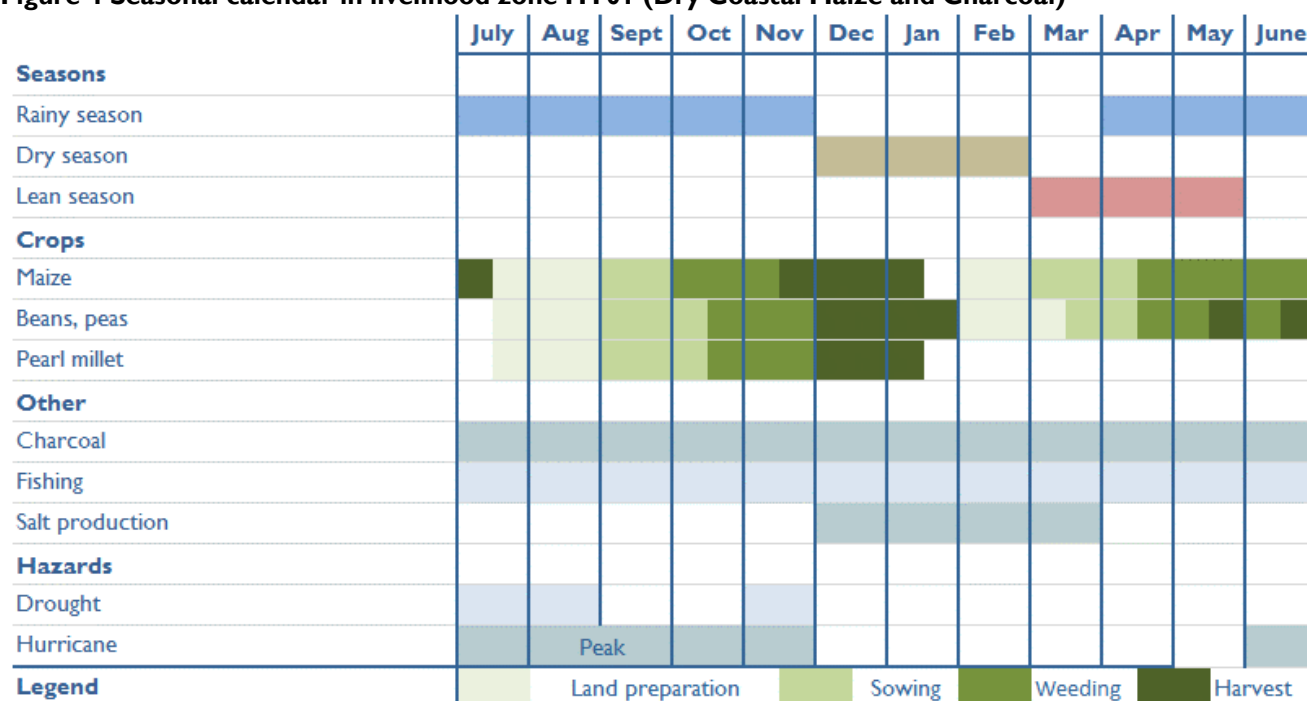
The seasonal calendar for livelihood zone HT01 (Dry Coastal Maize and Charcoal) shows the main household activities for the reference year from July 2013 (the beginning of the harvest) through June 2014. Farming activities occur year-round, though the combined effects of rainfall anomalies and the degradation and/or shortage of cropland for local households (particularly for very poor and poor households) are causing the latter to turn to either fishing activities or to the production and sale of

⁶ The data for this livelihood zone were collected in the Northwest and Artibonite Departments. Thus it would be helpful to collect data on Gonâve Island and in Nippes Department to round out this profile.

⁷ In preliminary discussions for the naming of this livelihood zone, the experts had initially suggested also including the word "goats." However, the conclusion from the analysis of the field data was that goats do not play an especially important role in this livelihood zone as a source of either food or income, whereupon it was decided to drop the word "goats" from its name.

charcoal and the sale of wood throughout the year. The two peak periods for the production and sale of charcoal are between August and September and November to February, coinciding with low-rainfall periods. There are two slack periods for fishing activities due to high winds and rough seas: between December and February and in June (Figure 4).

Figure 4 Seasonal calendar in livelihood zone HT01 (Dry Coastal Maize and Charcoal)



Source: FEWS NET

Drivers of wealth

Table 3 shows the drivers of wealth for each wealth group. It reveals significant differences in household wealth attributable mainly to the composition and assets of different groups of households. The main criteria used to establish the wealth breakdown in this dry coastal livelihood zone are as follows:

i) *Household size*: Household size is a defining factor for all four wealth groups. The better off the household, the smaller its size. Thus better-off households have four to seven members, while poor households, which account for 22-26 percent of all households in this livelihood zone, have 8-11 members.

ii) *Size of landholdings and cropped areas*: Most of the land, particularly farmland, is owned by middle and better-off households (which own three to ten times more land than poor households), to the detriment of very poor households forced to lease land or work land as sharecroppers. Together, very poor and poor households account for 69 to nearly 77 percent of all households in this livelihood zone. As land owners, middle and better-off households are able to hire members of very poor and poor households as farmhands. Their landholdings also give them enough space to grow fruit and, even more importantly, to engage in logging and charcoal production.

Table 3 Drivers of wealth in livelihood zone HT01 (Dry Coastal Maize and Charcoal)

Driver	Very poor	Poor	Middle	Better-off
Percentage of households (%)	45-50	20-25	10-15	10-15
Household size (#)	8-11	6-9	5-8	4-7
<i>Land (ca)</i>				
Owned	0.1-0.25	0.5-1	2-4	3-5
Leased	0.12-0.25	0.25-0.5	0	0
Sharecropped	0.12-0.25	0.25-0.75	0	0
<i>Livestock holdings (#)</i>				
Goats	2-4	2-5	6-17	15-40
Sheep	0-1	1-2	3-5	6-17
Pigs	0	0	1-2	2-5
Cattle	0	0-1	2-4	4-7
Horses	0	0	1-3	1-3
<i>Other productive assets (#)</i>				
Motorcycles	0	0-1	1-2	2-3

Source: FEWS NET

iii) *Livestock holdings*: Most livestock (close to 90-95 percent) are owned by better-off households, to the detriment of poor households. This helps furnish them with income to meet their various needs and cover any crop losses.

iv) *Productive assets*: This is a key distinguishing factor between wealth groups. In general, the better off the household, the more likely it is to have several sea salt basins, fishing boats, and motorcycles, enabling it to hire members of poor households to perform different types of work relating to salt production, fishing, and the rental of motorbike taxis.

Sources of food

All households in all four wealth groups were able to meet their basic energy requirements during the reference year from July 2013 to June 2014 (Figure 5). However, the ability of poor households and very poor households in particular to cover their energy needs is limited and can be undermined by a shock to their production, a rise in market prices for staple foods, or a decline in their purchasing power. Even with two growing seasons, the share of household energy needs met by crop production is relatively small (20 percent in the case of poor households and 40 percent in the case of middle and better-off households). According to local farmers, pockets of drought severely affected crop production for both growing seasons during the reference year, particularly maize. Very poor and poor households with small plots of land for growing crops are most affected by climatic hazards.

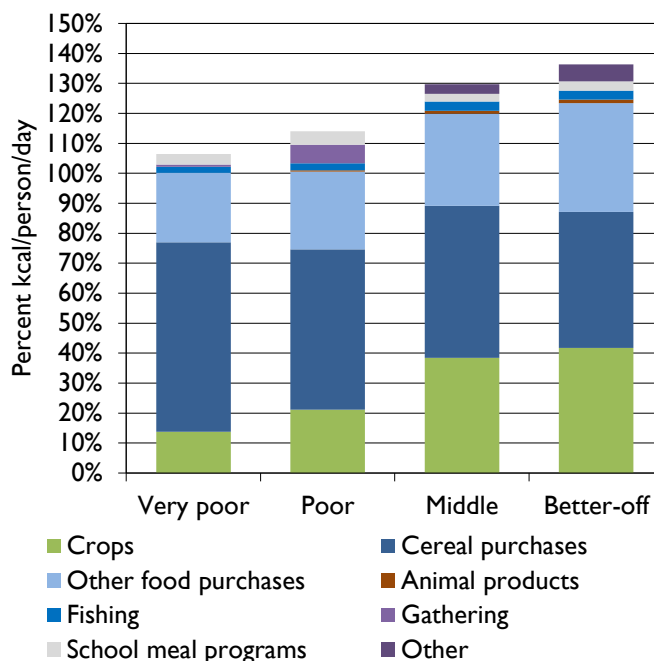
Thus, market purchase plays an important role in meeting household energy needs. It supplies close to 90 percent of the kcals consumed by very poor and poor households (the baseline is 53-63 percent), compared with 80 percent of the kcals consumed by middle and better-off households (the baseline is 45-50 percent).

Nonessential market purchases account for 30-36 percent of food intake by middle and better-off households, compared with 23-26 percent by poor households.

The share of energy needs met by animal products is extremely small (1 percent) and limited to middle and better-off households. According to discussions with certain communities in the livelihood zone, there is very little milk consumption, which is limited mainly to goat milk. Wild foods (fruits and fish) meet a significant share of household energy needs, particularly for poor households, mitigating the effects of shortfalls in crop production. Better-off households receive part of the cereal crops grown by poor households on leased lands or lands farmed under sharecropping arrangements. These crops (included under the heading "Other") meet 3-6 percent of the energy needs of middle and better-off households. Other sources of food include cash and in-kind payments from very poor and poor households to middle and better-off households for leased lands or sharecropping arrangements.

Note that the reference year (July 2013 through June 2014) used as a reference period for the data collection process in this livelihood zone was below average from a household food security standpoint due mainly to poor crop production. Thus the following data reflect the poorer than usual conditions in that year relative to a year with two good growing seasons.

Figure 5 Breakdown of sources of food in livelihood zone HT01 (Dry Coastal Maize and Charcoal)



Source: FEWS NET

Sources of income

Income from crop production by households in this deficit production area is used mainly to purchase food on local markets (Figure 6). In theory, local fishing activities could help generate sizeable amounts of income to make up for the crop production shortfalls in this area, particularly with households virtually completely market-dependent for their supplies of fish and fish products. However, fishing is confined to certain areas and is not necessarily an activity typically engaged in by local populations and villages in this livelihood zone. Thus the growing of crops for consumption and sale in non-fishing villages is expanding, reducing household dependence on market purchase and slightly boosting income from this source.

The diversification of sources of income varies from one wealth group to another (from four to seven sources). Better-off households have a larger capacity to engage in several different income-generating activities. In absolute terms, the total annual income of better-off households is nearly double that of poor households. Without exception, all households earn income from the sale of crops and wild plant products and from self-employment (petty trade in food and salt, transportation services, feedlots for livestock, etc.). However, the amount of income generated by these activities depends on the household's earning

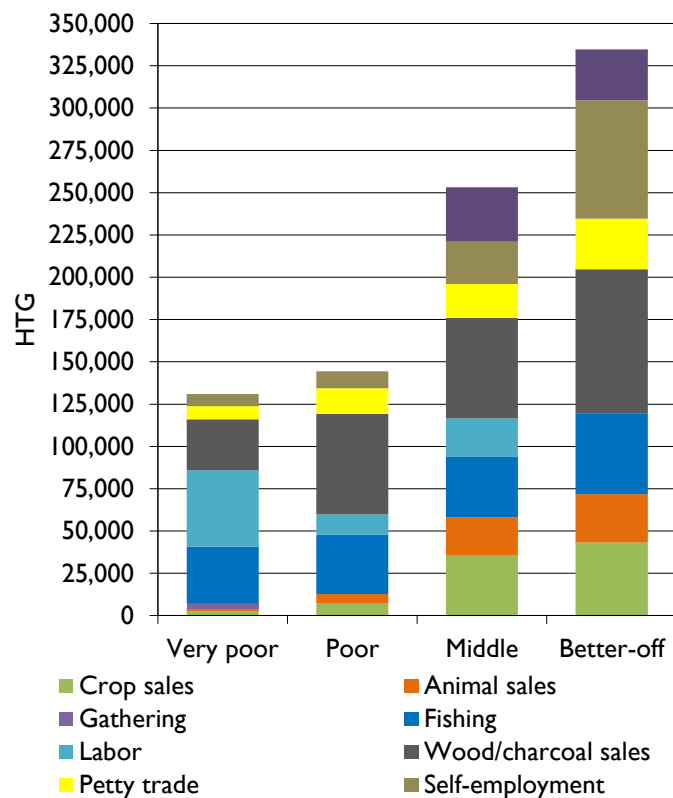
capacity. The more productive assets it owns and the better able it is to hire outside help, the more income it earns from these activities. For example, middle and better-off households earn 6-16 times more income from crop production than very poor and poor households and one-and-a-half times more income from self-employment or from wild plant and fish products than poor households. According to the breakdown of sources of household income, only poor, middle, and better-off households have income from the sale of livestock and money transfers, while only very poor, poor, and middle households earn income from casual labor. Only middle and better-off households with at least one household member living abroad, particularly in the United States, receive remittances from permanent migrants or diasporas (included under "Other").

The composition of the sources of income of very poor and poor households depends on the opportunities for gainful employment in agriculture, domestic work (including charcoal or salt production), construction, etc. afforded them by middle and better-off households, provided these latter two groups are not affected by climatic or economic shocks.

Expenditures

Patterns of spending vary from one wealth group to another in this livelihood zone, though certain similarities exist in the types of spending engaged in by very poor and poor households (Figure 7). Food purchases are the largest expenditure item for these households, accounting for close to 70 percent of expenditures by very poor households and close to half of all spending by poor households. Purchases of staple foodstuffs (rice and wheat or maize flour) consume 43 percent of the income of very poor households and 23 percent of the income of poor households, compared with only approximately 10 percent for middle and better-off households. The large share of their income spent on food purchases limits poor households' ability to invest in production inputs (for crops, fishing, fruit-growing, etc.) and social services. These purchases are made throughout the year, in line with the flow of household income. In addition, according to on-site interviews, members of middle and better-off households have more schooling and a better quality of life than members of very poor and poor households.

Figure 6 Breakdown of sources of income in livelihood zone HT01 (Dry Coastal Maize and Charcoal)



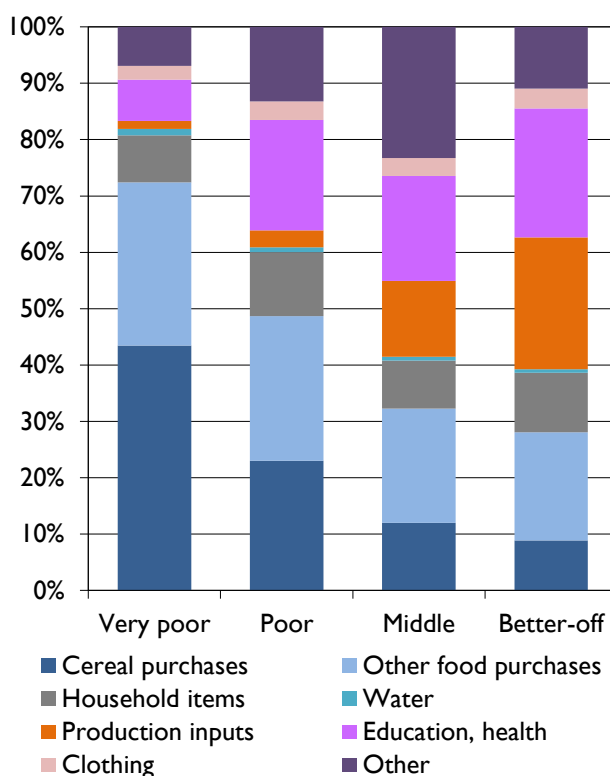
Source: FEWS NET

Lastly, coming back to expenditure items, the heading “Other” includes taxes and fees, gifts or pledges to the community, loan payments, transportation costs, and savings.

Calendar of major sources of food and income for poor households

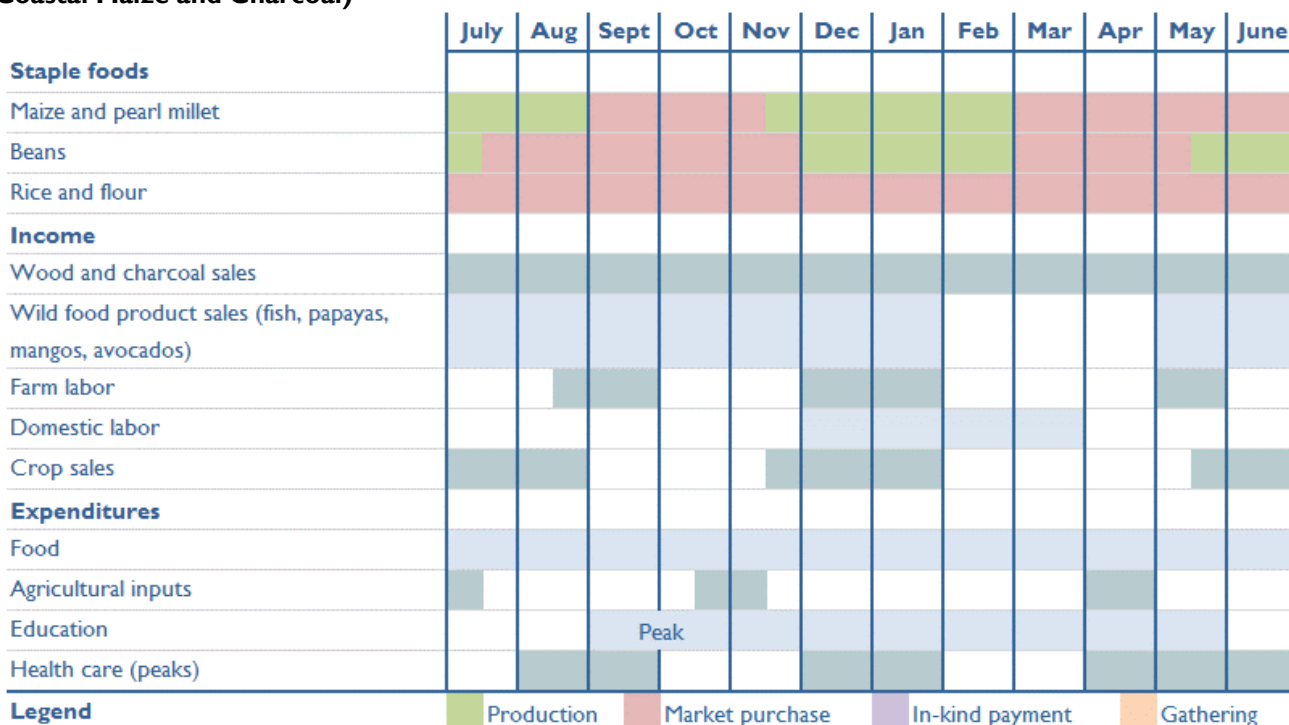
The main sources of employment for very poor and poor households are activities relating to the production and sale of wood and charcoal, salt production in the Gonaïves area, farm work (weeding), and fishing. The sources of income of households in this livelihood zone are most limited in the month of April, when there are several competing seasonal demands on their limited earnings (Figure 8).

Figure 7 Breakdown of expenditures in livelihood zone HT01 (Dry Coastal Maize and Charcoal)



Source: FEWS NET

Figure 8 Main components of the food access calendar for poor households in livelihood zone HT01 (Dry Coastal Maize and Charcoal)



Source: FEWS NET

Main hazards, coping strategies, and key parameters⁸

The main hazards in livelihood zone HT01 (Dry Coastal Maize and Charcoal) are: (1) for crops: drought, hurricanes, wind, predatory birds, locusts, and other crop pests; and (2) for livestock: animal diseases, particularly Porcine Enterovirus Encephalomyelitis (Teschin Disease).

Coping strategies of very poor and poor households include:

- Cutbacks in nonessential spending (i.e. on communications, clothing, and transportation)
- More production and sales of charcoal
- More sales of poultry
- Pre-harvest crop sales
- Gathering of more wild plant products
- Extended labor migration period (larger number of months)
- Sale of small ruminants
- Buying on credit
- More casual farm labor (more days of work)
- Construction work
- Domestic work (i.e. laundry)

Coping strategies of middle and better-off households include:

- Cutbacks in nonessential spending (i.e. on clothing, celebrations, gifts)
- Sale of charcoal
- Sale of wood and small ruminants
- Sale of salt at low (less lucrative) prices
- Receipt of money transfers from abroad
- Provision of interest-bearing loans
- Cutbacks in the hiring of farm workers

Table 4 Key parameters in livelihood zone HT01 (Dry Coastal Maize and Charcoal)

Item	Key Parameter – Quantity	Key Parameter – Price
Crop production	• Maize production • Cowpea, lima bean, and pigeonpea production • Cassava production • Peanut production	• Price of maize • Price of cowpeas, lima beans, and pigeonpeas • Price of cassava • Price of peanuts
Animal production	• Supply of cattle • Supply of goats	• Price of cattle • Price of goats
Other	• Fish catch (conch, lobster, etc.) • Fruit production or supply of wild fruits (mangoes, avocados) • Supply of farm labor (pre-harvest) • Supply of local labor (bricklayers) • Remittances from permanent migrants • Supply of fuelwood and charcoal	• Price of fish products (conch, lobster, etc.) • Price of fruit (mangoes, avocados) • Price of farm labor (pre-harvest) • Price of local labor (bricklayers) • Remittances from permanent migrants • Price of fuelwood and charcoal

Source: FEWS NET

⁸ For purposes of this report, a key parameter is defined as a source of food or income accounting for at least 10 percent of the total food supply or total annual income of households in a single wealth group or at least 5 percent of the total food supply or total annual income of households in two or more wealth groups.

NORTH TUBERS AND HORTICULTURE (LIVELIHOOD ZONE HT02)⁹

Zone description

Livelihood zone HT02 (North Tubers and Horticulture) covers a large part of northern Haiti, including most of the North and Northeast Departments, the eastern half of the Northwest Department, and Île de la Tortue (Turtle Island). It is bounded on the north by the Atlantic Ocean, on the south by the Central and Artibonite Departments, on the east by the Dominican Republic, and on the west by the Northwest Department. It is a mix of dry, humid, and hydromorphic plains, rolling hills, and mountains, with a plateau area.

The terrain is dominated by low hills and plains. The area has a typically tropical climate in which the seasons are shaped mainly by wind systems and elevation. Trade-winds, nor'easters, and east/southeast winds regularly sweep through the area at more or less fixed intervals.

These different atmospheric currents create extremely unstable climatic conditions. However, altitude tends to stabilize local temperatures. Thus areas at low elevations tend to be hotter (with temperatures of 28-32° C) and areas at higher altitudes tend to be more temperate (with temperatures of 15-22° C). The country's northern region includes several areas with temperate climates, some of which are known to contain remnants of *Pinus occidentalis* or Haitian pine forests (which are vanishing or have completely disappeared in certain locations) or other biological species characteristic of temperate zones.

This livelihood zone has a long rainy season from April to November, with a less rainy period and associated drought risk in July-August. Areas high in the *Massif du Nord* (the Northern Mountains) get more rain (1,000 to 1,500 mm or more of rain per year) than lower plain areas (with 800-1,000 mm of rain per year). This allows for two growing seasons per year, with the main season in May/June. Note that the North Department is one of the least hurricane-prone areas of the country.

A dense river network runs through this area. The main year-round rivers in the North Department are in the districts (*arrondissements*) of Borgne, Port-Margot, Limbé, Grande-Rivière-du-Nord, and Cap-Haïtien. The Northeast Department has a sparser river network. The main year-round rivers rising in the *Massif du Nord* (the Northern Mountains) are the *Rivière du Trou du Nord* and the *Rivière Marion*, which empty into Caracol and Fort-Liberté Bays, respectively. The *Ferrier* and *Massacre* Rivers run along the border between Haiti and the Dominican Republic.

Densely forested areas are no longer sustainable with the abundance of water, the altitude, the tropical climate, and the relatively dense population in this livelihood zone. However, these same factors create ideal conditions for horticulture. The area produces a wide variety of cash crops such as sugar cane, coffee, and cocoa and has numerous types of fruit trees, including pomegranate, orange, grapefruit, and avocado.

Market access

Households in this livelihood zone purchase most staples such as rice, flour, oil, sugar, and fish (mainly imports) in local markets (Port-Margot, Bogue, Cap-Haïtien, Plaisance, and Ouanaminthe). These same markets serve as outlets for agricultural commodities (bananas, yams, sugar cane, citrus fruits, fish, and other seafood). Markets in this livelihood zone are also flooded with agricultural and other commodities from border areas of the Dominican Republic, creating heavy competition between imports and locally grown commodities.

The largest sales outlets for crops are the Port-au-Prince, Cap Haïtien, Limbé, Gonaïves, and Ouanaminthe markets (though the latter market has a much smaller turnover).

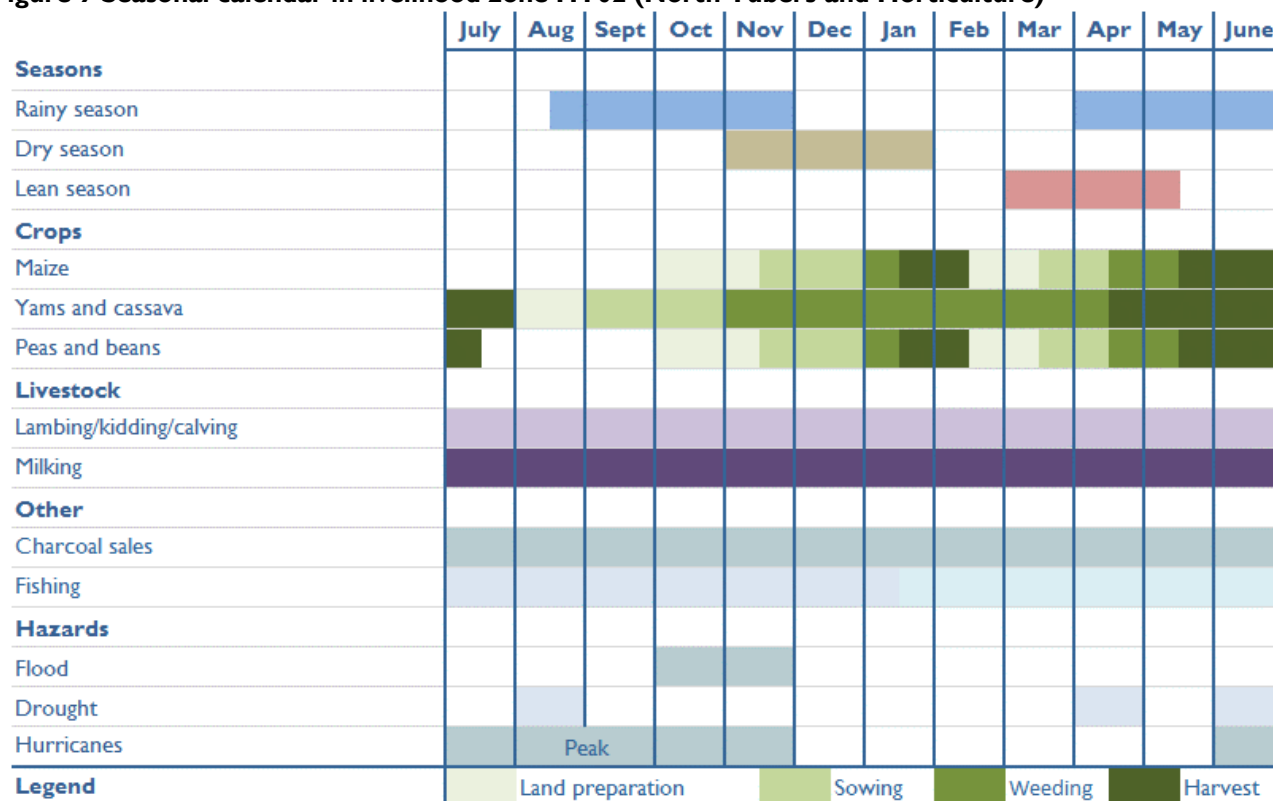
With poor road conditions impeding access to certain markets, there is a designated collection site for picking up local crops for transport. The crops are carried to the site by horse, donkey, or motorbike taxi. The trip to Port-au-Prince can take anywhere from 24 to 48 hours depending on the condition of the vehicle used.

⁹ The original name of this livelihood zone was "North Maize, Yams, and Beans." However, based on the field data, it was concluded that tubers (cassava, yams, and potatoes as a whole) were far more important than maize in this area and that its diversified fruit production was much more important than its bean production, whereupon the name of the livelihood zone was changed accordingly.

Seasonal calendar

The seasonal calendar for livelihood zone HT02 (North Tubers and Horticulture) (Figure 9) shows the main household activities for the reference year from June 2013 (the beginning of the harvest) to May 2014. Charcoal production peaks between April and June, in September, and again in December-January. Given the importance of agriculture, most labor demand is for land preparation work and weeding (in March-April, July-August, and December).

Figure 9 Seasonal calendar in livelihood zone HT02 (North Tubers and Horticulture)



Source: FEWS NET

Drivers of wealth

Error! Reference source not found. shows the main distinguishing characteristics of each wealth group in this livelihood zone. The criteria used to establish the wealth breakdown are as follows:

i) *Household size*: The better-off the household, the smaller its size, limited to a father, a mother, and two to three dependent children. Most children in better-off households attend secondary or post-secondary schools in the nation's capital of Port-au-Prince or in another large city. Note that the HEA methodology defines a household as "people who eat together," which means that children living away from home for more than six months are not counted in determining household size.

Table 5 Drivers of wealth in livelihood zone HT02 (North Tubers and Horticulture)

Driver	Very poor	Poor	Middle	Better-off
Percentage of households (%)	45-55	20-25	10-15	5-15
Household size (#)	8-11	7-9	5-7	4-6
<i>Land (ca)</i>				
Owned	0-0.5	0.25-1	1-3	2.5-5
Leased	0-0.25	0	0	0
Sharecropped	0-0.25	0	0	0
<i>Livestock holdings (#)</i>				
Goats	1-3	3-5	6-11	10-19
Pigs	0	0	1-2	2-5
Cattle	0	0-2	2-4	4-8
Horses	0	0	0-2	0-3
<i>Other productive assets (#)</i>				
Motorcycles	0	0-1	1-2	2-3
Plows	0	0	1	1-2

ii) *Land ownership*: Middle and better-off households own most of the land, which allows them to use their landholdings for different types of activities (as farms, as banana and sugar cane plantations, as citrus orchards, as pastures for livestock, and for logging and charcoal production). More often than not, part of their land is worked by groups of poor households under leases or sharecropping arrangements in return for mostly in-kind payments based on their output.

iii) *Livestock holdings*: Middle and better-off households own 90 percent of all cattle and close to 80 percent of all goats, which enables them to earn extra income from the sale of livestock, particularly in the event of crop losses due to climatic hazards.

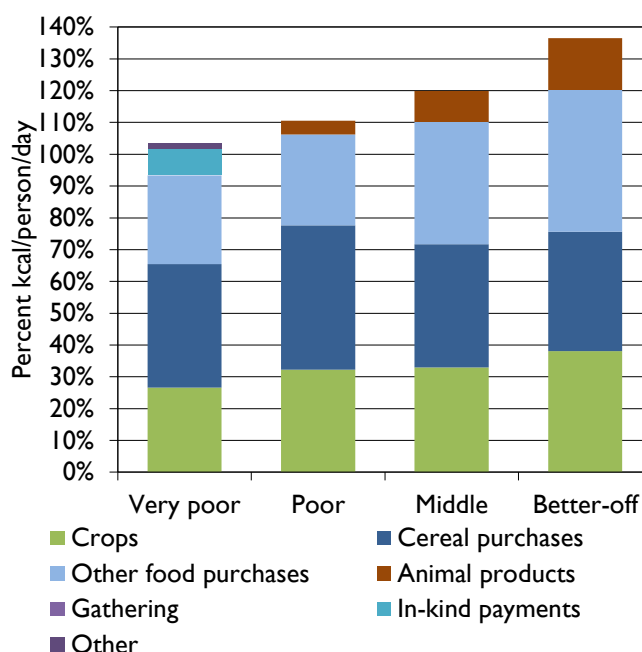
iv) *Productive assets*: Middle and better-off households in this livelihood zone own plows and draft animals to help with the farm work, which gives them a considerable advantage over very poor and poor households by improving crop yields.

Sources of food

Households in all four wealth groups were able to meet their basic energy needs during the reference year (Figure 10). However, the ability of poor households and very poor households in particular to cover their energy needs is limited and can be undermined by a shock to their production, a rise in market prices for staple foods, or a decline in their purchasing power. Even with two growing seasons per year, crop production still meets only a small share of the energy needs of households in all wealth groups (20-30 percent). Only small tracts of land are planted in food crops (roughly a third of the arable land area), with the other two-thirds used to grow cash crops. Thus the main source of food for all households is market purchase. In fact, 70-80 percent of household energy needs are met by market purchase. The share of purchases of staple foods (rice and flour) is more or less the same for households in all wealth groups. The difference is in their purchases of nonessential foods (meat, fish, bread, milk, noodles, etc.), which meet 38-45 percent of the annual energy needs of middle and better-off households and less than 30 percent of the needs of very poor and poor households. Animal products meet a significant share of the needs of better-off households (close to 16 percent), which own most of the livestock in this livelihood zone. Wild plant foods cover only a small share of household energy needs (3-7 percent), but are a source of extra food for area households. With the reported crop failures in this area, local households are increasingly resorting to wild plant food to meet their consumption needs.

In-kind payments to very poor households for farm and domestic work (under the heading “Other”) cover 10 percent of their energy needs. This is an important source of food, meeting the needs of a nine-member household for a period of approximately one month.

Figure 10 Breakdown of sources of food in livelihood zone HT02 (North Tubers and Horticulture)



Source: FEWS NET

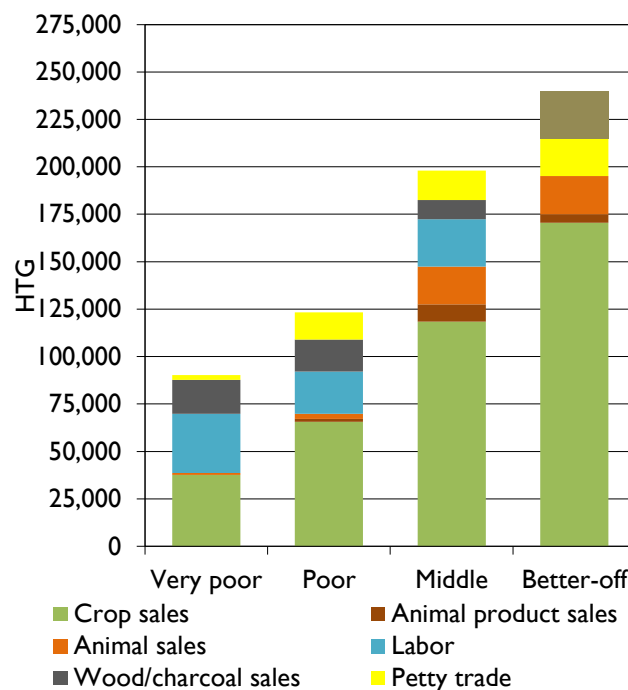
Sources of income

All households earn most of their income from the sale of crops and wild plant products and from self-employment. In absolute terms, the total annual income of a better-off household in this livelihood zone is double that of a poor household (Figure 11). In fact, the share of income from crop sales by better-off households is twice that of poor households and four times that of very poor households; better-off households earn three times more income from the sale of wild plant products than poor households and eight times more income than very poor households. Certain sources of income are specific to a particular wealth group. Very poor and poor households earn part of their income from casual labor, while middle and better-off households do so from the sale of livestock and animal products, the leasing of land and houses, or self-employment. This keeps poor households in general and very poor households in particular in a state of vulnerability. In fact, income from casual labor accounts for just under 10 percent of the total annual income of poor households and close to 30 percent of the total annual income of very poor households.

Expenditures

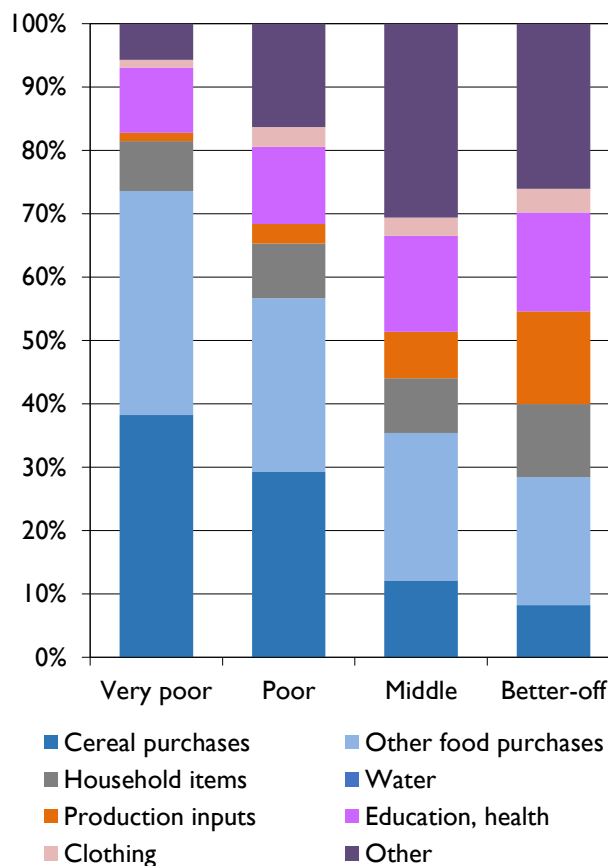
As illustrated in the right-hand column of Figure 12, household expenditures on food purchases consume 55 percent of the annual income of poor households and 75 percent of the annual income of very poor households. Purchases of staple foods consume 28 percent of the annual income of poor households and 39 percent of that of very poor households, compared with only 9 percent for better-off households and 15 percent for the middle group of households. The breakdown shows that very poor and poor households spend most of their income on purchases of food. This makes it difficult for them to invest in ways to improve their crop or citrus fruit production. It also curtails their access to social (health and education) services. In contrast, middle and better-off households spend nearly 16-18 percent of their income purchasing farm inputs, accessing basic social services, and maintaining an acceptable quality of life. Thus the expenditure item "Other" for these households includes spending on travel, transportation, communications, etc.

Figure 11 Breakdown of sources of income in livelihood zone HT02 (North Tubers and Horticulture)



Source: FEWS NET

Figure 12 Breakdown of expenditures in livelihood zone HT02 (North Tubers and Horticulture)

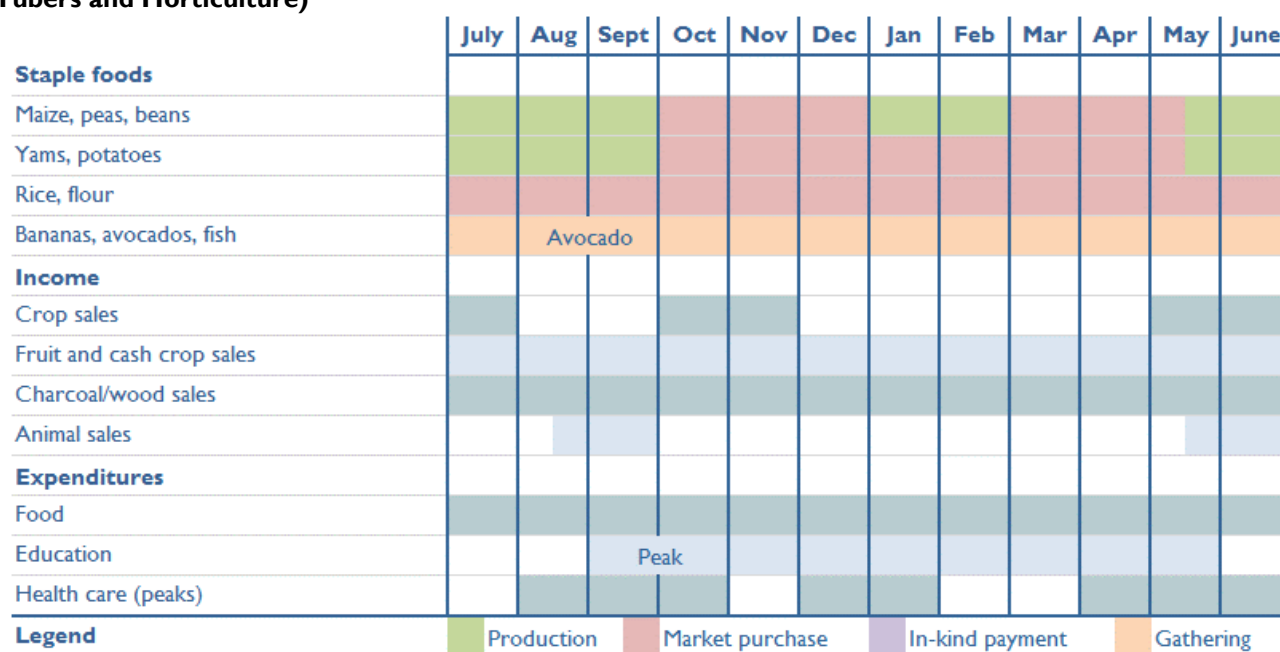


Source: FEWS NET

Calendar of major sources of food and income for poor households

Poor households have the most difficulty maintaining food access in March and April, the time of year when their sources of income are most limited (Figure 13).

Figure 13 Main components of the food access calendar for poor households in livelihood HT02 (North Tubers and Horticulture)



Source: FEWS NET

Main hazards, coping strategies, and key parameters

The main hazards in this livelihood zone are: (1) for crops: drought, floods, hurricanes, and wind; and (2) for livestock: animal diseases.

Coping strategies of very poor and poor households include:

- Cutbacks in nonessential spending (i.e. spending on celebrations, communications, transportation, clothing)
- More sales of charcoal
- Gathering of more wild plant products
- Extended labor migration period (larger number of days)
- More casual farm labor (more days of work)
- Cutbacks in spending on school fees
- Sale of poultry
- Buying on credit

Coping strategies of middle and better-off households include:

- Cuts in nonessential spending (i.e. spending on clothing, celebrations, gifts)
- Sale of charcoal
- Sale of wood and small ruminants
- Sale of salt production at lower (less lucrative) prices
- Receipt of money transfers from abroad
- Provision of interest-bearing loans
- Cutbacks in the hiring of farm workers

Table 5 Key parameters in livelihood zone HT02 (North Tubers and Horticulture)

Item	Key Parameter – Quantity	Key Parameter – Price
Crop production	• Maize production • Cowpea and pigeonpea production • Cassava, sweet potato, and yam production • Banana, breadfruit, pomegranate, orange, watermelon, and avocado production • Sugar cane production	• Price of maize • Price of cowpeas and pigeonpeas • Price of cassava, sweet potatoes, and yams • Price of bananas, breadfruit, pomegranates, oranges, watermelons, and avocados • Price of sugar cane
Animal production	• Supply of cow milk • Supply of cattle • Supply of goats	• Unit price per liter of cow milk • Selling price of cattle • Selling price of goats
Other	• Supply of wild plant products • Supply of farm labor (pre-harvest) • Supply of wood and charcoal	• Price of wild plant products • Price of farm labor (pre-harvest) • Selling price of wood and charcoal • Income from petty trade

Source: FEWS NET

CENTRAL PLATEAU MAIZE AND TUBERS (LIVELIHOOD ZONE HT03)

Zone description

Livelihood zone HT03 (Central Plateau Maize and Tubers) covers four departments, including all of the Central Department (Hinche, Mirebalais, Lascahobas, and Cerca-la-Source districts), the southwestern reaches of the Northeast Department (Trou-du-Nord district), the southern half of the North Department (Grande-Rivière-du-Nord and Saint-Raphaël districts), and parts of the Artibonite Department (Gonaïves, Gros Morne, and Marmelade districts). The field work focused on the Central Department and Saint-Raphaël and Marmelade districts. The populations studied are all rural, with livelihoods based on subsistence farming and livestock-raising activities.

The Central Plateau is an enormous basin bounded on the north by the *Massif du Nord* (the Northern Mountains), on the west by the *Montagnes Noires* (the Black Mountains) mountain range, on the south by the *Montagnes du Trou d'Eau*, and on the east by the *Bassin de San Juan* (San Juan Basin). It is a mountainous area, with altitudes ranging from 500 meters above sea level in Hinche to more than 2,000 meters above sea level on certain mountain peaks. The serious degree of deforestation in this livelihood zone is steadily reducing soil fertility. The real impact of deforestation on the land is especially noticeable in areas along the border with the Dominican Republic, which has visibly more tree cover than the Haitian mountainsides. Average temperatures range from 20-30° C and average annual rainfall is 1,000 mm, though the High Plateau gets less rain than the Lower Plateau (approximately 500 mm/year). The distribution of rainfall allows for only one growing season. A wide variety of crops are grown in this livelihood zone. The main cash crops are beans (black beans and pigeonpeas), peanuts, and bananas. The main crops grown for household consumption are maize and tubers (sweet cassava, yams, and sweet potatoes), though most households are market-dependent for their food supplies. Citrus fruits and coffee are grown in areas at the highest elevations. Sugar cane crops in Saint-Michel and Saint-Raphaël districts are used to make syrup and liquor.

Access to farmland (fertile, sufficiently flat land) is one of the main constraints to crop production, though sharecropping is a common practice among households without enough land of their own. Better-off households oftentimes lease land within their local area or across the border to gain access to larger or more productive tracts of land. Access to on-farm employment opportunities in the Dominican Republic is crucial for poor households, despite the low pay.

The terrain in this livelihood zone lends itself to raising goats. Cattle are raised in pens and oxen are commonly used for farm work (by better-off households) and, in some cases, even rented out. However, theft of livestock is extremely common, mainly for resale in the city and in the Dominican Republic, and the size of animal herds is relatively small.

Market access

The area's rugged terrain makes access to major markets within the livelihood zone and across the country from crop-producing areas rather difficult. Four trade routes cross through the area. The main trade route is the road between the city of Hinche and Port-au-Prince through Mirebalais. There is also a road from Hinche to Cap-Haïtien. The third route connects Marmelade district with the city of Gonaïves and the fourth connects the city of Mirebalais with Arcahaie and Saint-Marc, via Saut-d'Eau. However, local villages have poor access to markets. The lack of paved roads is a major factor curtailing local households' market access, particularly during the rainy season. Middle and better-off households own donkeys and horses to help them transport goods to municipal markets and major markets in each district.

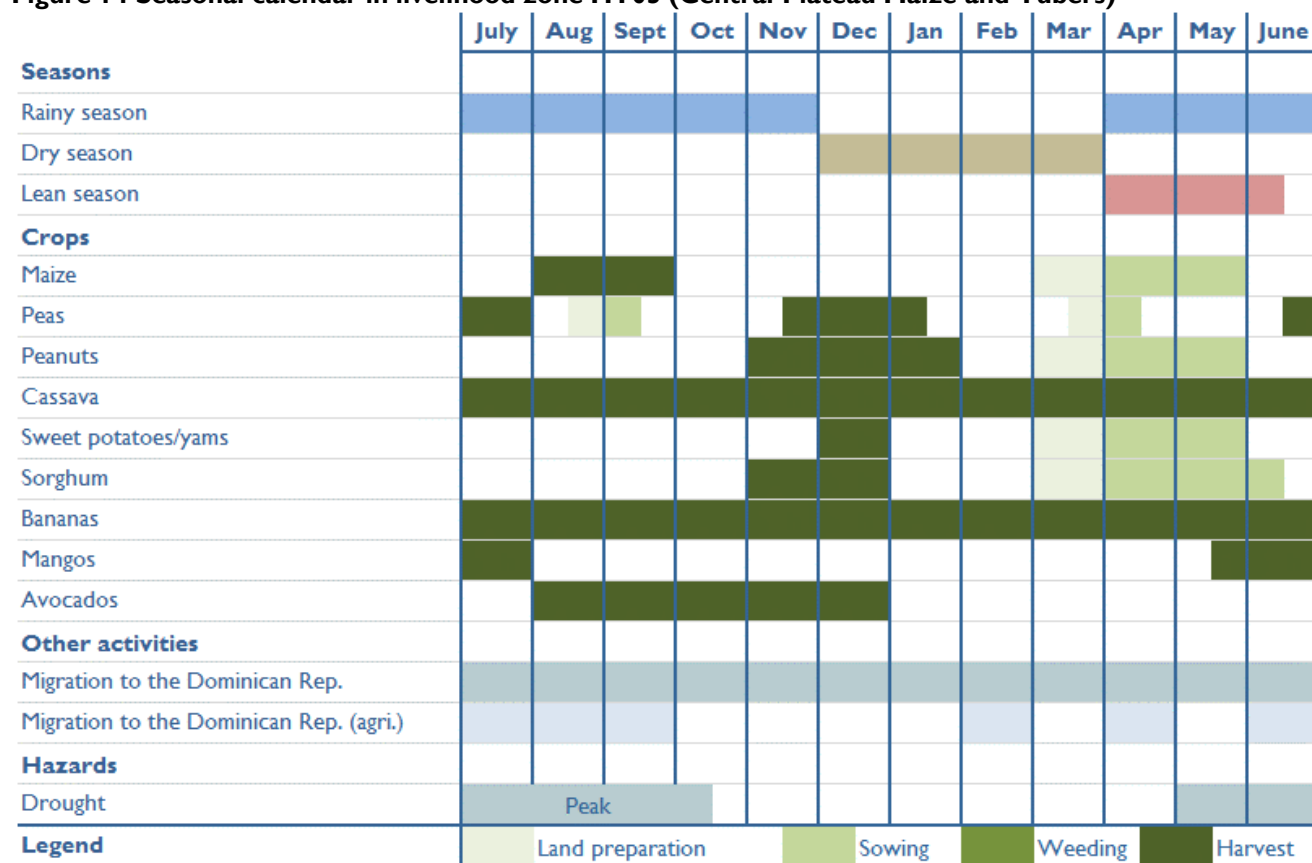
Trade with the Dominican Republic serves as an extremely important commercial market for villages in border areas of this livelihood zone. Such trade is not confined to the sale of crops but rather is also an outlet for the pool of unskilled farm and nonfarm labor (in construction or domestic work). Many Haitians from this livelihood zone cross the border for short periods of time to take advantage of economic and other opportunities, particularly for purchasing food, job hunting, looking for land on which to grow crops, trading on bi-national markets along the border, utilizing available services in the Dominican Republic such as schools, hospitals, or universities, and engaging in illegal activities such as charcoal production or firewood collection.

Seasonal calendar

The seasonal calendar for livelihood zone HT03 (Central Plateau Maize and Tubers) (Figure 14) shows the different activities engaged in by the local population during the reference year from July 2013 to June 2014. More specifically, it breaks down farming activities by the type of crop grown and other typical household activities engaged in throughout the year. The reference year was "average" from a food security standpoint, with average crop production, animal reproduction, and seasonal migration rates. On the other hand, the new consumption year (from July 2014 to June 2015) got underway with a

slight decline in production due to the late start of the rains, causing damage to fields of parched maize crops suffering from a shortage of water.

Figure 14 Seasonal calendar in livelihood zone HT03 (Central Plateau Maize and Tubers)



In general, there is a single growing season for all types of crops with the exception of pulses grown in slightly more humid areas (which is not the norm). The growing season begins with land preparation work and the planting of crops in March and April in anticipation of the first rains. Demand for labor peaks just before the harvest, between March and May. A large part of the farm work is performed using a traditional practice known as *konbit*, in which organized groups (mainly of men) help one another by sharing the farm work. Under the *konbit* system, a group of people may, for example, hire themselves out to better-off households, with each member of the group receiving the full amount of wages paid to the group as a whole at the end of each work day, on a rotating basis. Likewise, the group may work the land of each member on a rotating basis, in which case the group and its members receive no pay for their work, though the group member owning the land in question will feed the entire group. This practice is not that different from the concept of the “tontine,” a type of group savings fund (usually organized by women). However, use of the *konbit* system is becoming increasingly less common in rural communities.

Labor migration to the Dominican Republic to look for work on farms, in construction, or in domestic service jobs is possible year-round. However, the usual practice is for migrant workers to leave home before the beginning of the growing season (between January and March) to earn needed cash for use during the growing season. They may also leave immediately after the completion of land preparation work (between May and July) once women are able to take over the rest of the farm work. Youth (in most cases, the eldest son) will also head to the Dominican Republic during school holidays.

Tubers, pulses (mainly beans), and sorghum (known as “*pitimi*” in Creole) are grown as companion crops, while maize, peanuts (known as “*pistach*” in Creole), and bananas are generally grown in single-cropping systems. Peanuts are grown mainly in areas with sandy soils but not in areas with chalky soils, usually by middle and better-off households. Sweet cassava is grown for consumption and bitter cassava is earmarked for sale. In general, avocados and mangoes are grown in farming “concessions” (around the house) rather than on plantations. Certain varieties of mangoes enjoy a large demand in Port-au-Prince and the Dominican Republic, particularly the Baptiste, Jean Marie, and Fransik varieties.

The lean season from April to June has the fewest local employment opportunities. It is a waiting period for major crops. The consumption year begins in July with the harvest of fresh maize crops.

Drivers of wealth

Table 6 breaks down the defining characteristics of the four wealth groups targeted by the study. Though the Central Plateau area is characterized as agropastoral, the sale of crops generates the most income for middle and better-off households. Thus the main drivers of wealth for households in this livelihood zone are access to land and the ability to work it.

As indicated by the community, the difference in the size of the area farmed by local households increases with the level of wealth. Thus better-off households are able to farm at least 4 hectares of land, most of which they own. In many cases, they also own other tracts of land, which are left to lie fallow. Middle households farm at least 2.5 hectares of land, a portion of which is leased. Very poor and poor households are also considered farming households, though they have only small plots of 0.25 to 1 *carreau* of land. To gain access to fertile land, very poor and poor households oftentimes enter into sharecropping arrangements in which they agree to pay the lessor (the landowner) approximately a third of their crops.

Livestock holdings are another driver of wealth, though livestock-raising activities generate less income than farming. Middle and better-off households with two to six cows have an alternate source of food and income (from the sale of

milk). Households owning one or two pair of oxen and plows are better able to work the land and to farm larger areas. Most households own goats, but herd size is limited to a maximum of 15 goats due mainly to fear of theft, which is rampant in cross-border areas. The goats owned by very poor and poor households are frequently obtained as part of caretaking arrangements. The raising of poultry is a common practice in this livelihood zone, particularly as a source of cash income during hard times. A hen is easier to sell than a kid goat, for example.

No significant differences in household size exist between wealth groups. The only distinguishing factor in the case of very poor and poor households is their less uniform household size, which can range from six to as many as nine members. On the other hand, the composition of households in different wealth groups varies. Middle and better-off households often have at least one child away at school outside the livelihood zone (in Port-au-Prince or the Dominican Republic). Lastly, many households include grandchildren among their members.

Table 6 Drivers of wealth in livelihood zone HT03 (Central Plateau Maize and Tubers)

Driver	Very poor	Poor	Middle	Better-off
Percentage of households (%)	35-45	25-35	15-20	10-15
Household size (#)	6-9	7-9	6-7	5-7
<i>Land (ca)</i>				
Owned	0-0.5	0.5-1	1-3	4-8
Leased	0	0	0.5-1	0
Sharecropped	0.25-0.5	0.25-0.75	0	0
<i>Livestock holdings (#)</i>				
Poultry	4-5	5-6	15-20	20-25
Goats	0-2	2-3	4-6	10-14
Cattle	0	0	2-4	4-6
Oxen	0	0-2	1 pair	2 pairs
Horses	0	1	1-2	2
<i>Other productive assets (#)</i>				
Motorcycles	0	0	1	1-2
Plows	0	0	1	1-2

Source: FEWS NET

Sources of food

On the whole, though very poor and poor households were barely able to meet their basic energy needs, the Central Plateau area was food-secure during the reference year (Figure 15).

The main distinguishing feature of this livelihood zone is the heavy market dependence of local households for their food supplies, with this source of food meeting 60-65 percent of the annual basic food needs of households in all four wealth groups. Note that rice, though a mainstay of the Haitian diet, is not grown in this livelihood zone. Thus Dominican rice is usually purchased at the border and in local markets, where U.S. and Asian rice are also available.

In spite of sharecropping arrangements and in-kind wage payments to very poor and poor households (mainly to female household members working in harvests of different crops), the size of farming units is relatively small (except for those of better-off households). This factor, combined with the effects of continued land degradation, limits the amount of food supplied by crop production, which meets only 30-35 percent of households' basic annual food needs. After the sale of crops, better-off households are able to meet half their needs from household production.

In addition, in this livelihood zone, the heading "Other" refers to meals received during the work day by farm workers, particularly from very poor households. Very poor and poor households have no access to milk, unlike middle and better-off households, which have access to milk for three to four months of the year, though no clear seasonal factors affect milk production in this livelihood zone. Lastly, school meal programs function in most primary schools in local villages.

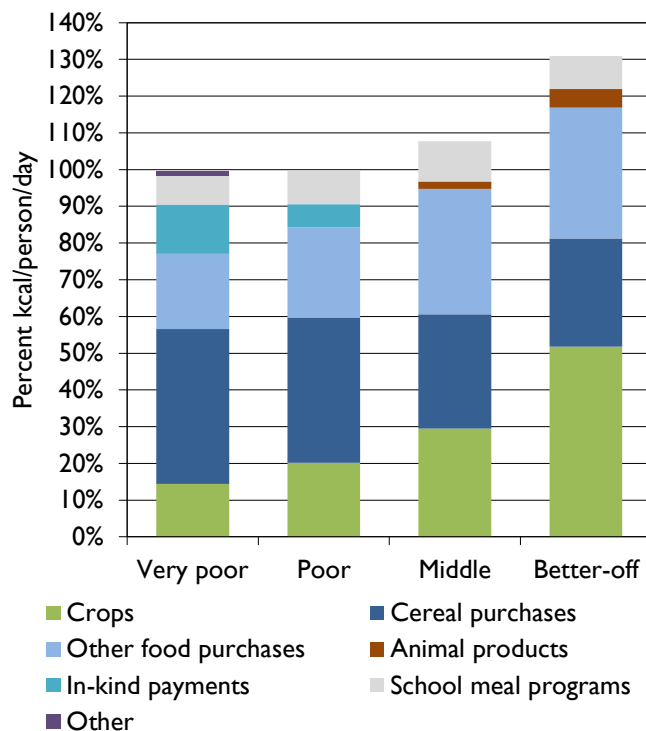
Sources of income

Middle and better-off households are much better able to harness the main available sources of income in livelihood zone HT03 (Central Plateau Maize and Tubers). As illustrated in

Figure 16, the average income of a better-off household for the reference year (at around HTG 280,000) was nearly five times higher than that of a very poor household (approximately HTG 50,000) and more than three times the annual income of a poor household.

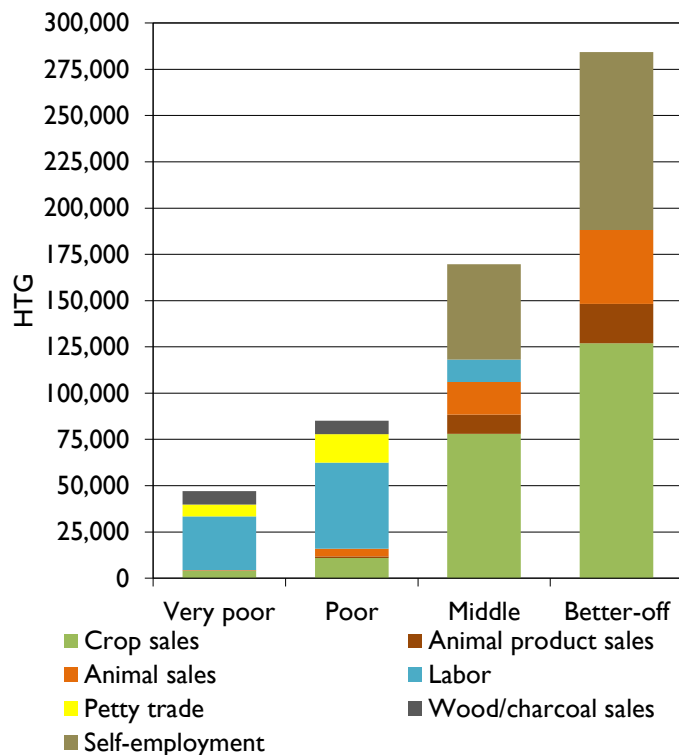
Middle and better-off households have more productive assets, particularly land and capital but also livestock, from which they generate much higher incomes in spite of needed investments (in farm labor, for example) to maximize their returns. In terms of crop

Figure 15 Breakdown of sources of food in livelihood zone HT03 (Central Plateau Maize and Tubers)



Source: FEWS NET

Figure 16 Breakdown of sources of income in livelihood zone HT03 (Central Plateau Maize and Tubers)



Source: FEWS NET

sales, sales of pulses (fresh and dry pigeonpeas and black beans) bring in the most income, followed by sales of peanuts, bananas, and avocados. Sales of livestock by middle and better-off households include the sale of cows past their milk-producing age and calves (mainly males), kid goats, and pigs. Trading activities by middle and better-off households also encompass purchases and deferred sales of cereal stocks and livestock, food purchases in the Dominican Republic or nearby large cities (Hinche, Cap-Haïtien, or Port-au-Prince, for example) in the case of locally grown food items, and the leasing of land, oxen, and motorcycles (included under the heading “Self-employment”).

On the other hand, very poor and poor households rely mainly on gainful employment by working household members during farming seasons, either locally or outside the area (in neighboring areas or the Dominican Republic). Crop sales by these households are limited to the sale of pulses, bananas, sorghum, and small amounts of avocados. Very poor households generally do not have enough livestock to sell even one animal a year, but they do sell poultry. Poor households may sell an average of three kid goats and pigs per year. The sale of charcoal is not a seasonal activity. Households produce charcoal to use for cooking and, from time to time, sell a few bags of charcoal as a way to supplement their income. There are also other types of related activities. For example, better-off households may hire outsiders to produce charcoal for them or may give them the wood with which to make charcoal and share the finished product with them. All trading activities are extremely small-scale, involving the buying and reselling of small amounts of foodstuffs (rice, sugar, etc.), kerosene, and household items (soap, matches, salt, etc.) or the production and sale of “clairin” or “kleren” (a traditional alcoholic beverage).

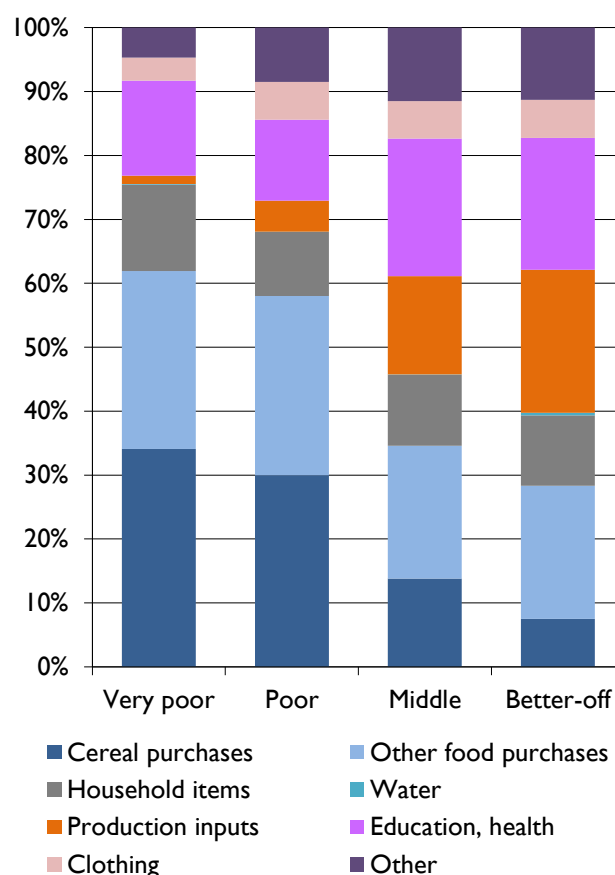
Expenditures

Household expenditures vary from one wealth group to another according to their degree of food self-sufficiency and income-generating capacity. Food spending is the largest expenditure item for very poor and poor households, consuming over 60 percent of the total annual income of very poor households and close to 60 percent for poor households (Figure 17). The main staple foods purchased on the market are rice and maize (in kernel and flour form), equally important mainstays of the household diet. However, to save money, poorer households will buy much less expensive broken rice (known as “cabecita”) from the Dominican Republic.

The heading “Household items” includes seasonings, soap, milling charges (for food crops), and lighting supplies (candles, kerosene, batteries, and, for many better-off households, solar lamps). Only better-off households buy charcoal, firewood, and, in some cases, cooking gas. Other households gather wood out in the brush. Spending on water (which is virtually negligible according to Figure 17) mainly involves purchases of water treatment plates, whose use has become extremely common since the cholera outbreak in Haiti.

Significant expenditures are made on social (health and education) services by all wealth groups. Very poor households spend an estimated HTG 5,000 on social services, compared with HTG 8,000 spent by poor households, HTG 30,000 spent by middle households, and HTG 52,000 spent by better-off households. Spending on education varies according to students’ grade level and type of school attended (public versus private). In addition to tuition fees, these outlays include the cost of school uniforms, books, and other school supplies, which explains why many very poor and poor households are unable to enroll all of their school-age children.

Figure 17 Breakdown of expenditures in livelihood zone HT03 (Central Plateau Maize and Tubers)



Source: FEWS NET

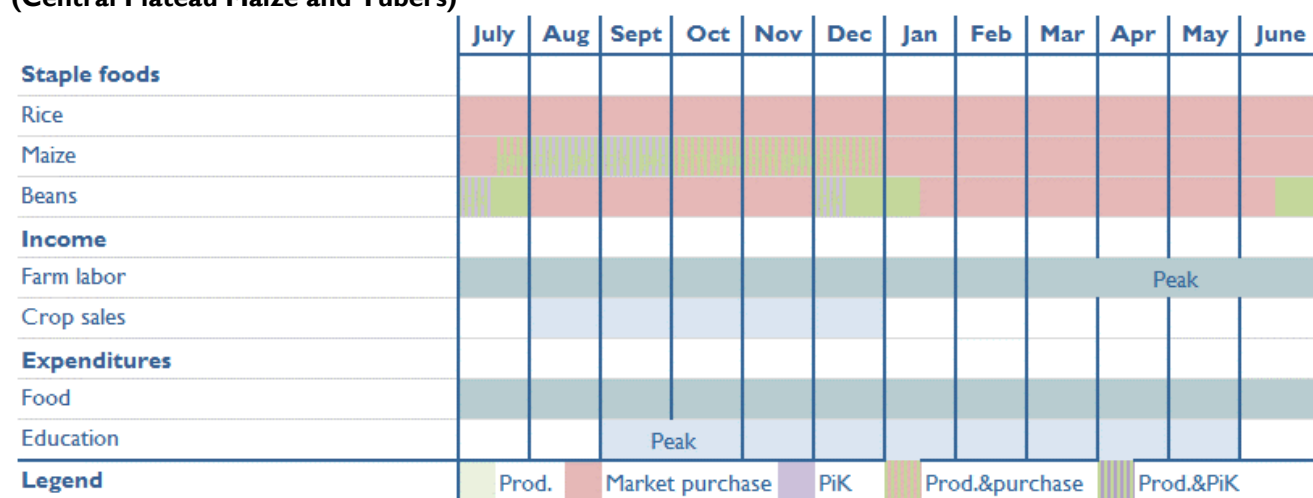
Lastly, spending on production inputs includes purchases of seeds and farm implements (by all four wealth groups), the hiring of farm workers (by middle and better-off households), and the leasing of land. Middle and better-off households make visibly

larger investments in livestock. The heading “Other” includes spending on transportation and communications and financial contributions to the community.

Calendar of major sources of food and income for poor households

Poor households are dependent on market purchase virtually year-round, but mainly between January and June (Figure 18). Poor households have fewer income-generating opportunities at this time of year, making them particularly reliant on gainful on-farm employment.

Figure 18 Main components of the food access calendar for poor households in livelihood zone HT03 (Central Plateau Maize and Tubers)



Source: FEWS NET

Main hazards, coping strategies, and key parameters

Livelihood zone HT03 (Central Plateau Maize and Tubers) is exposed to the following major hazards:

For crops:

- Drought, due to late start of rains or inadequate rainfall activity during the planting season
- Limited supply of seeds
- Predatory birds, locusts, and other crop pests

For livestock:

- Animal diseases
- Poultry diseases
- Lack of veterinary services

For market purchase:

- Rising prices, particularly for imported cereals (i.e. rice)

For labor migration:

- Security problems at border crossings and irregular status in destination areas

In addition to these annual risk factors, the area is exposed to much more serious hazards, which can interfere with efforts to preserve and improve local livelihoods. Deforestation and loss of soil fertility are old problems calling for more targeted efforts by the government based on proven experiences in the Dominican Republic. Lastly, the exploitation of labor in the Dominican Republic, reflected in the extremely low rate of pay (HTG 150 to 200 per day without food or lodging, which is below the legal minimum wage), the insecure situation of migrant workers, and the informal nature of their work contracts, makes it difficult to improve the quality of life in this livelihood zone.

Coping strategies of very poor and poor households include:

- Cutbacks in nonessential spending
- Cutbacks in consumption of more expensive foods
- Extended migration period (larger number of days) in the Dominican Republic or outside the area

- Larger supply of farm labor on local markets (the size of this labor pool is limited by the need for a minimum number of workers to run family farms for household production)
- More production and sale of charcoal
- Sale of poultry

Coping strategies of middle and better-off households include:

- Cutbacks in nonessential spending
- Expanded trading activities
- External migration
- Sale of livestock

Table 7 Key parameters in livelihood zone HT03 (Central Plateau Maize and Tubers)

Item	Key Parameter – Quantity	Key Parameter – Price
Crop production	• Maize production • Black bean and pigeonpea production (fresh, dry) • Cassava production • Peanut production • Banana, avocado, and mango production	• Price of maize • Price of black beans and pigeonpeas • Price of cassava • Price of peanuts • Price of bananas, avocados, and mangoes
Animal production	• Supply of cow milk • Supply of cattle, goats, and pigs	• Price of cow milk • Price of cattle, goats, and pigs
Other	• Supply of local farm labor • Supply of nonfarm labor • Supply of charcoal • Migration outside the area	• Price of local farm labor • Price of nonfarm labor • Price of charcoal • Price of labor outside the area

Source: FEWS NET

RICE PLAINS OF THE ARTIBONITE (LIVELIHOOD ZONE HT04)

Zone description

The Rice Plains of the Artibonite livelihood zone (HT04) covers the irrigated plain areas surrounding the Artibonite River, a particularly fertile region with an altitude near sea level. The entire zone is located in the Artibonite Department and, more specifically, is made up of the district of Dessalines and the municipal section of L'Estère (in the district of Gonaïves). The zone's economy is primarily based on crop production, because due to its geography, the environment and weather conditions are more favorable to agriculture than in other regions of the country. Annual rainfall in the zone is around 1,400 mm.

The zone is characterized by irrigated rice crops. Its heavy clay soil (vertisoil)¹⁰ is particularly well-suited to rice crops, as it is nearly impermeable when saturated. Rainfed agriculture is more difficult in this zone, as the type of soil found there can only be tilled in a narrow range of moisture conditions; it is hard when dry and very sticky when wet. Other than rice production, crops produced in this zone include market garden produce, sweet potatoes, beans, cassava, maize, and bananas.

The zone has good road access, with good connections to sale markets (in Port-au-Prince and the Dominican Republic). However, rice production costs are high and depend on inputs imported from the United States (and are therefore at the mercy of the U.S. dollar exchange rate), which impacts households' ability to participate in rice production and sales. Poverty in this zone is mainly linked to limited access to land and a limited capacity to invest in rice production.

Livestock-rearing is another activity in this zone. Animal herds consist mainly of cattle, goats, and horses or donkeys. Households also typically own pigs and poultry. Better-off households own considerable herds and entrust a certain number of animals to poorer households for tending. Only cows are milked, and most of the milk produced is reserved for sale. Almost all households sell at least two or three animals a year. In middle and better-off households, pigs and especially goats are often killed during Christmas and year-end celebrations. One of the biggest concerns in terms of livestock-rearing is keeping animals out of mature rice paddies. Therefore, most animals are tied up with rope. Cattle are not used for plowing, and the land is mostly hand-cultivated, though rotary tillers are frequently used by better-off households.

Market access

The Artibonite region is relatively small and compact and has a high population density. Each municipal section has an urban center. The largest city in the zone is Saint-Marc, on the coast between Port-au-Prince and Gonaïves (on the main highway). The zone is surrounded by secondary roads: from Hinche to Saint-Michel, Saint-Michel to Liancourt, and Saint-Marc to Mirebalais.

Rice follows the following main trade route: Production areas → municipal section markets (in Poste-Pierrot, La Chapelle, Verrettes, Petite-Rivière, L'Estère, Pont Joux/Pont-Sondé, and Désarmes) → department-level markets in Gonaïves, Cap-Haïtien, Croix-des-Bouquets, and Port-au-Prince → consumer markets.

The main season for rice sales runs from November through January. A second season runs from April through May, but is less significant in terms of sales volumes. Locally produced rice is in direct competition with rice imported from the Dominican Republic and East Asia, which is less expensive but generally of lower quality. Potatoes follow the same trade route as rice, as do market garden vegetables and bananas, although they are also sold locally.

Demand for labor is high enough for the zone to be a destination for seasonal farm labor, particularly in the rainy season during peaks in rice production. Outside these periods, local population migration is significant (but not typical) among households that depend on labor opportunities to survive. Members of these households migrate to municipal section urban centers, Port-au-Prince, Cap-Haïtien, and the Dominican Republic. As very poor households can hardly afford the travel costs, these migrants are mainly from poor households.

¹⁰ The soil is rich in a particular type of clay.

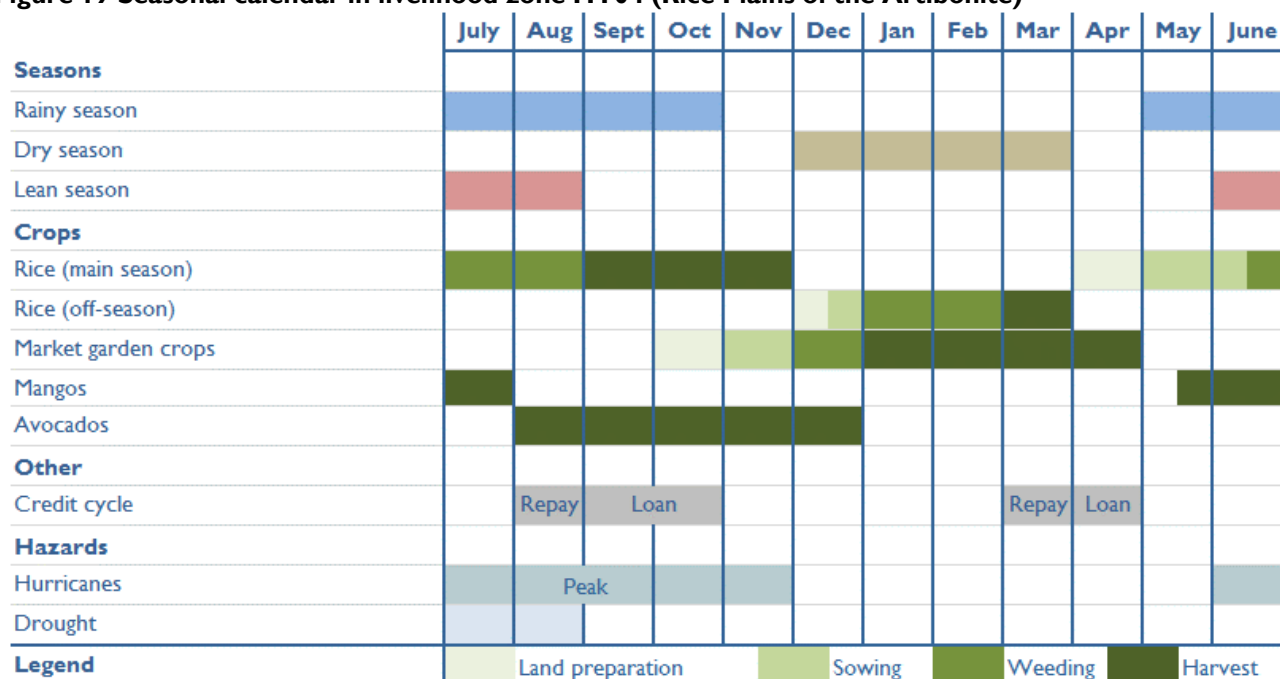
Seasonal calendar

Despite the generalized use of irrigation systems on farms, the zone's farming calendar is dependent on rainfall. Water availability decreases as water levels in rivers and canal systems fall, and most households do not have motor pumps to access water.

Irrigated rice crops are produced during a main season that corresponds to the rainy season (plantings in May/June and harvests from September through November), and during a second, smaller season (with yields equal to 60-80 percent of those of the first season) in the off-season from December through April. Areas specialized in rice production can even have a third or fourth harvest. The rice production cycle is closely linked to the use of credit. Loans are obtained at the start of the season and repaid once crops are sold. The rice harvest is followed by a rotation of bean, potato, and maize crops or the continuation of another rice production season. Market garden crops are planted on the edges of rice paddies during the off-season (Figure 19).

Thanks to good rainfall and the availability of buyers for the zone's main crops, the zone's reference year in terms of food security is considered average or slightly above-average. The previous year (from September 2012 to August 2013) saw less rainfall and the decapitalization of farmers due to several difficult years following the earthquake and cholera epidemic. The new consumption year (from September 2014 to August 2015) could be compromised by high food prices and low fertilizer availability.

Figure 19 Seasonal calendar in livelihood zone HT04 (Rice Plains of the Artibonite)



Source: FEWS NET

Drivers of wealth

The main driver of wealth in this agricultural zone is farming capacity, which is determined by access to capital and sources of credit to purchase inputs, hire labor at key periods during the agricultural calendar, and rent mechanical tools as needed (Table 8). Households considered to be very poor are those that farm a maximum of one-third of a carreau (ca) of land, while the poor are those that farm less than 1 ca. However, both groups must enter into sharecropping agreements to access that land. Sharecropping agreements are paid for in kind by handing one-third of the crop yield over to the landowner. Middle households farm approximately 2 ca of land, while better-off households farm approximately 4 ca. These middle and better-off households own most of the land they farm and lease additional land to grow rice and other cash crops (peppers, bananas, and other market garden vegetables). The annual price for leasing a carreau of land is approximately HTG 50,000.

Better-off households own more animals and entrust some of them (particularly goats) to poorer households for tending. Pigs are mainly owned by middle households due to their fast reproduction rates (six to seven piglets per farrowing, twice a year) and relatively high sale prices. Pigs are tied up to keep them out of rice paddies. Most households (except very poor ones) raise cattle for milk production and consumption or sale in urban centers. Agricultural waste (rice and maize) is used as animal feed, in addition to purchased wheat and maize. Horses and donkeys are a common mode of transport among very poor and poor households.

Table 8 Drivers of wealth in livelihood zone HT04 (Rice Plains of the Artibonite)

Drivers of wealth	Very poor	Poor	Middle	Better-off
Percentage of households (%)	40-50	20-30	10-20	5-15
Household size (#)	7-9	7-8	5-7	5-6
<i>Irrigated land (ca)</i>				
Owned	0-0.12	0.25-0.5	1-1.5	2-3
Leased	0	0	0.5-1	1-2
Sharecropped	0.15-0.25	0.25-0.5	0	0
<i>Livestock holdings (#)</i>				
Poultry	0-5	0-20	0-30	10-40
Goats	0-3*	0-5*	5-10	10-30
Cattle	0	1-2*	2-7	5-15
Pigs	0	0-2	2-3	3-4
Horses/donkeys	0	0-1	0-2	0
<i>Other productive assets (#)</i>				
Rotary tiller	0	0	0	0-1

* Indicates that some or all of these animals may be tended on behalf of better-off households.

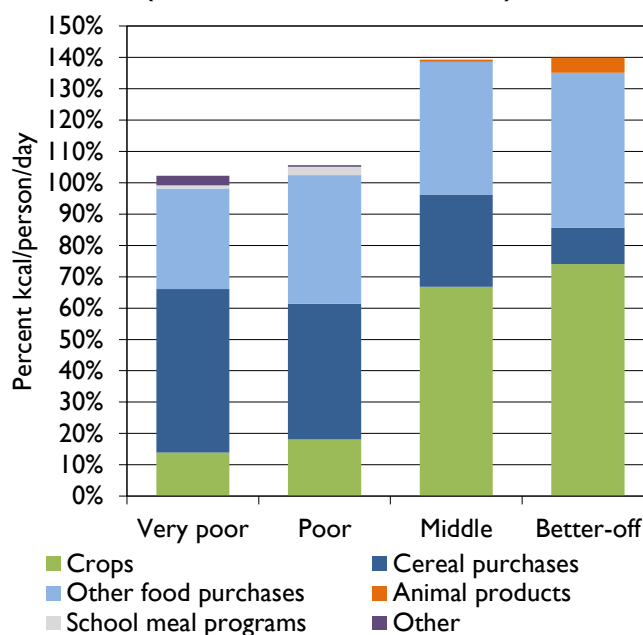
Source: FEWS NET

Sources of food

This livelihood zone is considered a surplus crop production zone, but only middle and better-off households are self-sufficient in rice (Figure 20). Very poor and poor households could produce enough rice to meet their own needs (while reserving the required one-third portion for owners of sharecropped land), but they prefer to sell their crops and buy imported rice, which is less expensive. As a result, the crops produced by these households (rice, potatoes, maize, and peas) barely cover 10-20 percent of their minimum energy requirements, and they depend on markets to access staple foods (rice and maize) and foods other than cereals. The "Other" category refers to food received while working on farms, which is extremely important to very poor households. It is not clear whether food payments for labor are typical in the zone, but some communities surveyed mentioned the existence of relatively significant in-kind payments for rice and maize harvesting and post-harvesting activities (harvesting, grinding, and winnowing).

Middle and better-off households enjoy food security, possessing over a year's worth of rice stocks. They purchase small quantities of grain maize and maize flour to supplement what they produce, but most foods they purchase are not staples but rather items such as sugar, oil, bread, pasta, and meat. Better-off households, which own more cattle than middle households, also have access to a significant quantity of milk.

Figure 20 Breakdown of sources of food in livelihood zone HT04 (Rice Plains of the Artibonite)



Source: FEWS NET

Sources of income

The inequality among different wealth groups becomes clear when looking at the sources of income (Figure 21). Very poor households (40-50 percent of households in the zone), which depend largely on the market for their labor contracts, earn almost three times less income than poor households and 14 times less than better-off households. Crop production capacity has a significant multiplier effect on income, even when taking account of the fact that rice production is costly and absorbs 65-70 percent of the income earned from rice crop sales. Being able to wait for prices to rise is also crucial for the sale of rice crops. Before the harvest, very poor and poor households sell some of their crops at lower prices (an average of HTG 40 per "marmite" (unit of measurement) before the harvest, compared to HTG 50 per marmite during the harvest). Better-off households and some middle households produce large enough volumes of rice to sell directly to intermediate buyers or the food industry (for example, to Ti Malice, a large food manufacturer in Haiti).

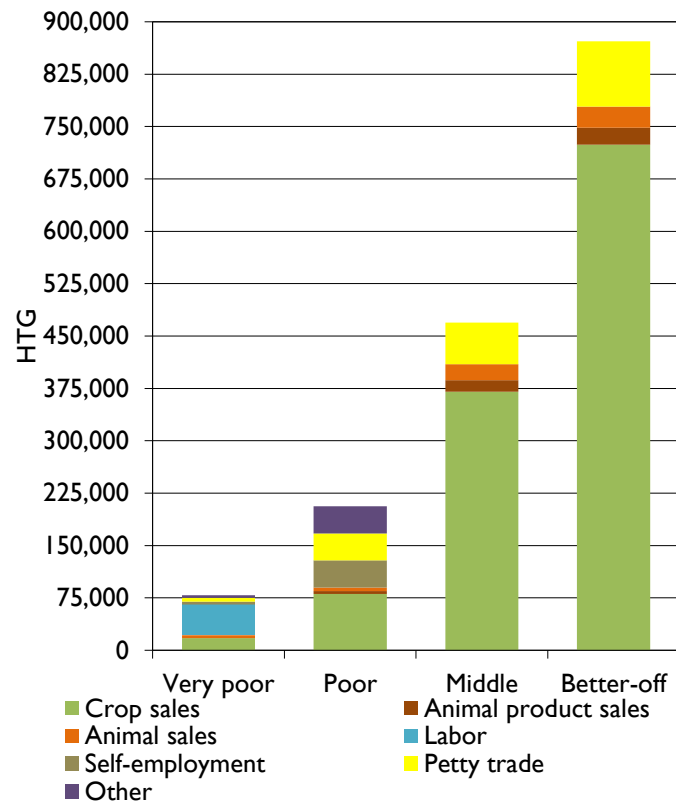
Other than agriculture, another important category is "Self-employment," which covers independent commercial activities. Very poor and poor households sell top-up phone cards or drive motorbike taxis (rented under contract) and sometimes sell wood or charcoal.

Middle and better-off households especially act as intermediaries in food sales (Madame Sara traders¹¹). They may also own shops and generally engage in trade at a larger scale. For very poor households, petty trade is a strategy to smooth income and consumption. For example, during or after the harvest, they invest in a business, which they view as a way to generate savings or as an investment that will make the income they earn from selling crops last longer. These businesses only operate for a few months, as the capital invested in them is insufficient, and the earnings are used to meet household consumption needs.

Middle and better-off households use credit to finance rice production. They obtain formal, contractual loans from commercial banks at an annual interest rate of approximately 10 percent. Very poor and poor households obtain small, informal loans, normally with no interest and sometimes in exchange for labor or crops. If the loan is repaid in kind at the time of the harvest, the crops are valued at 10-15 percent below the market price. For most households, credit is therefore a way to access funds to invest in agriculture, a highly productive activity in this zone. But for very poor households who sell their crops before the harvest, credit is a strategy for smoothing income.

Very poor and poor households sell few heads of livestock (earning HTG 4,000-5,000 a year), as they own very few animals, and the small ruminants they do have at home are tended for middle and better-off households. Livestock sales are a larger source of income for the two other wealth groups, which own more animals. Theft has been cited as a significant risk for livestock, limiting the number of animals owned by households.

Figure 21 Breakdown of sources of income in livelihood zone HT04 (Rice Plains of the Artibonite)



Source: FEWS NET

¹¹ *Madame Saras* are traders. The name comes from a bird, so "Madame Saras" are not necessarily women. However, most are female traders who provide a link between producers and markets. There are two types: (1) rural *Madame Saras* who buy local products and sell them on the markets and who therefore travel shorter distances and earn less; and (2) urban *Madame Saras* who mainly provide a link between rural areas and urban market suppliers, traveling long distances and therefore earning more.

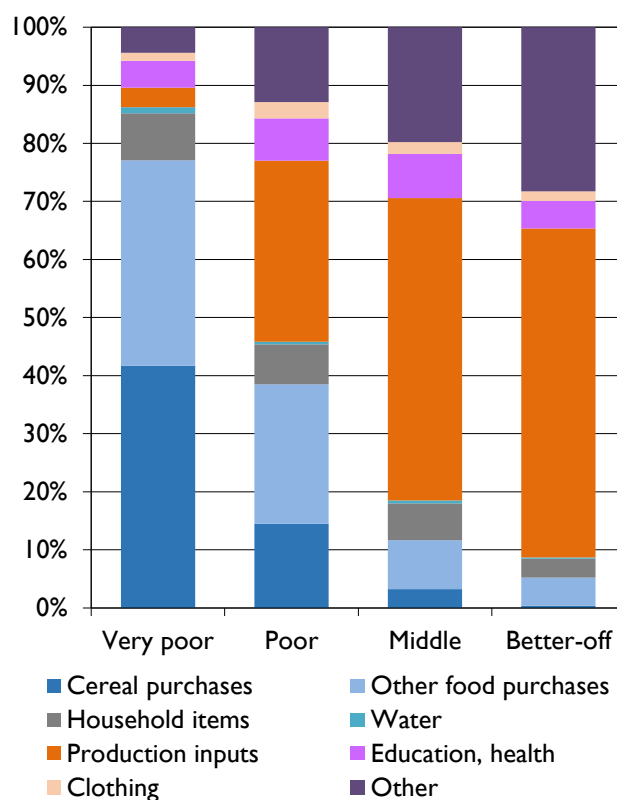
Expenditures

The difference in access to land can be seen in the expenditures of different wealth groups (Figure 22). Expenditures among poor, middle, and better-off households follow a very similar pattern, even though the weights of food and production input (mainly agricultural) expenditures are inversely correlated with wealth.

The expenditure pattern for very poor households is completely different. Market purchases of food make up 80 percent of their annual expenditures. They therefore have little income remaining to purchase other basic goods and services, such as lighting, hygiene, education, health, transportation, and even condiments.

Better-off, medium, and poor households all make significant investments in agriculture for the following (in descending order of importance): hiring labor, purchasing fertilizer, and leasing land. Changes in fertilizer prices were often cited as a concern during the reference year.

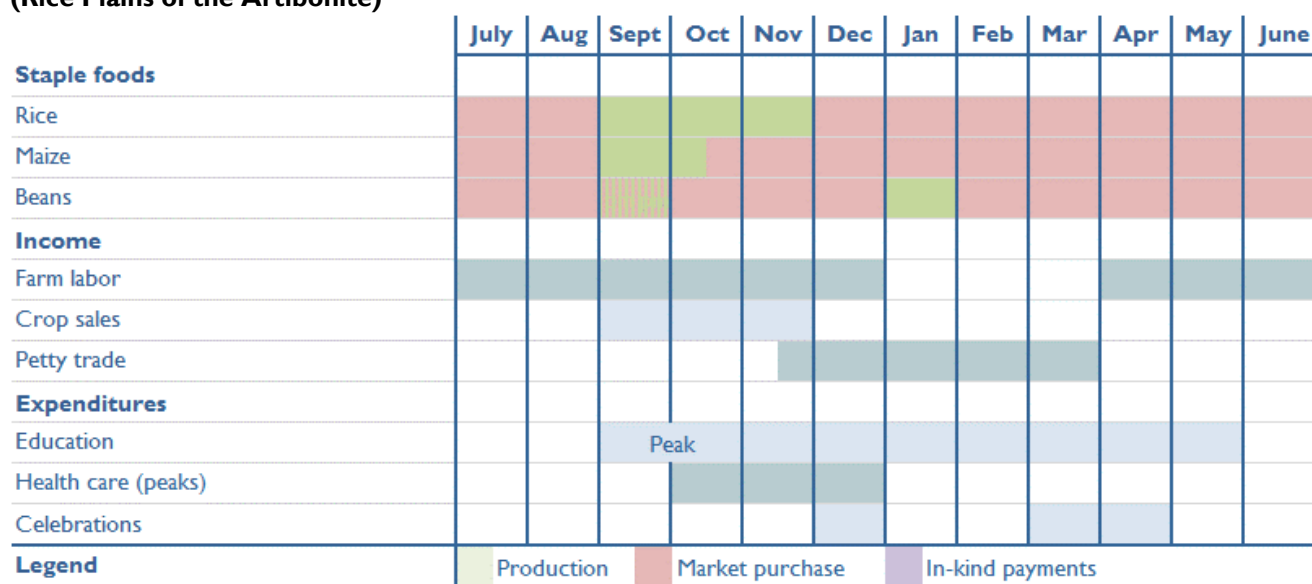
Figure 22 Breakdown of expenditures in livelihood zone HT04 (Rice Plains of the Artibonite)



Source: FEWS NET

Calendar of major sources of food and income for poor households

Figure 23 Main components of the food access calendar for poor households in livelihood zone HT04 (Rice Plains of the Artibonite)



Source: FEWS NET

Main hazards, coping strategies, and key parameters

The following are the main hazards cited by rural communities in the zone:

For crops:

- Drought or a late start to the rainy season, leading to lower water levels in rivers and canal systems leading to irrigated land
- Attacks on rice crops by parasites/pests
- Higher fertilizer prices and less fertilizer available locally, resulting in smaller areas planted in rice

For livestock:

- Livestock theft, resulting in smaller herd sizes and less investment in livestock-rearing

Another concern of farmers in the zone is the maintenance of canals by the government (primary level) and the community (secondary/tertiary level). As this maintenance is difficult to coordinate, irrigation systems are in poor condition, reducing the quantity of available water. Inadequate communication and little knowledge of when water will be released into the canal system complicates the situation. Additional concerns are related to soil conservation and degradation of the productive environment.

Finally, very poor and poor households must meet the high demand for labor at key times during the agricultural calendar, which prevents them from dedicating the necessary time to their own fields, as mechanization is out of their reach.

Very poor and poor households use the following coping strategies, in descending order of priority:

- Increased labor supply locally or outside the zone
- Mortgage of crops to access the credit needed to cover expenditures until the harvest
- Loans or requests for salary advances for performed labor
- Livestock sales
- Increased sales of firewood and charcoal
- Leasing of land

Medium and better-off households use the following coping strategies, in descending order of priority:

- Use of household savings
- Assistance from family members outside the zone
- Livestock sales
- Formal or informal loans, depending on the quantity requested

Table 9 Key parameters in livelihood zone HT04 (Rice Plains of the Artibonite)

Item	Key Parameter - Quantity	Key Parameter - Price
Crop production	• Production of rice • Production of beans • Production of maize • Production of sweet potatoes • Production of bananas • Production of market garden crops	• Price of rice • Price of beans • Price of maize • Price of sweet potatoes • Price of bananas • Price of market garden crops
Animal production	• Supply of cow's milk • Supply of cattle, small ruminants	• Price of cow's milk • Price of cattle, small ruminants
Other	• Supply of labor • Demand for credit	• Price of labor • Interest rates

Source: FEWS NET

WESTERN BANANA PLAINS OF ARCAHAIE (LIVELIHOOD ZONE HT05)

Zone description

The Western Banana Plains of Arcahaie livelihood zone (HT05) covers a relatively small area located between the coast and the *Chaîne des Matheux* mountains. It includes only one part of the Ouest Department: the Arcahaie district. The largest city is Arcahaie, but Port-au-Prince is a short distance away. The Arcahaie district is densely populated (an average of 280 inhabitants per km²), making it difficult to access farmland, particularly for the zone's small farmers. Access to land is also limited by a high rate of landowner absenteeism; many landowners live far from their land, either in the capital or in other urban centers, and have their land managed by administrators.

The zone is characterized by alluvial and sandy fibrous clay soil and 1,200 mm of annual rainfall. Four rivers pass through the zone and provide water to the plains: the Matheux, the Torcelle, the Bretelle, and the Courjolle Rivers. Irrigation systems have helped the agriculture sector to develop, despite the constraints of a tropical, semi-arid climate. The main production system is therefore based on irrigation, although some non-irrigated land exists in the southern part of the zone.

Unlike the Rice Plains of the Artibonite (Zone HT04), this zone is specialized in plantain production. Most agricultural land is dedicated to plantain crops, grown on large banana plantations, with a few pockets of cassava and bean production throughout the zone. A significant portion of the harvest is sold on local markets and then transported to Port-au-Prince. Banana production plays an essential role for all wealth groups in the zone. It is the main source of income for all groups and the second largest source of food after rice (which is purchased on the market).

Livestock-rearing plays a minor role in the zone, but goat and pig sales allow poorer households to fill crop production gaps. Petty trade is another important economic activity, particularly among poor households. The gathering of wild plant foods is widespread. The breadfruit tree – known locally as the "*arbre véritable*" – is important, particularly as a source of food.

Market access

The zone has a good road network and markets are easy to access. A paved road and railway run along the coast between Gonaïves and Port-au-Prince, while secondary roads connect the interior of the zone to the coast. Production areas located close to markets in the zone and the capital provide the zone's farmers with significant opportunities. That is one reason why prices for farmers in this zone are more lucrative than in the country's other banana-producing zones.

Bananas and market garden produce travel according to the following trade route: production areas → farmers' markets (Cabaret, Arcahaie, Pierre Payen, and Titanyen) → the Croix-des-Bossales Market in Port-au-Prince (assembly market and consumer market) → consumer markets (Pétion Ville, Canapé Vert, Croix-des-Bouquets – all retail markets).

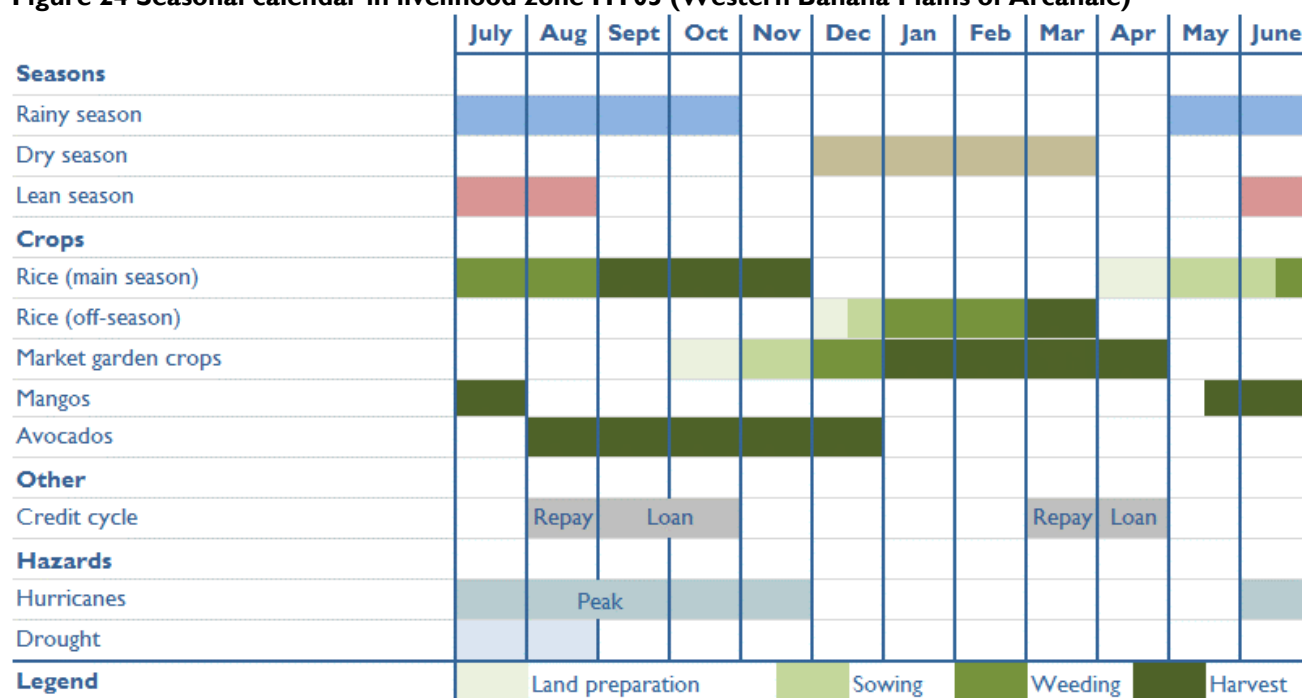
Fruit (mainly mangoes, melons, and papayas) travels to international markets, including the United States, along the following route: production areas → farmers' markets (Cabaret, Arcahaie, Pierre Payen, and Titanyen) → collection centers → export companies.

Households in the zone mainly purchase food from the markets in Cabaret, Arcahaie, and Titanyen. These markets sell cereals imported from the United States and Asia.

Seasonal calendar

Like the rest of the country (except LZ 02), this zone has a main rainy season from May to November, during which time banana production reaches its peak (from July to October) and market garden and fruit crops (including papayas and melons) can be found (Figure 24). Vegetables are planted and replanted during the dry season, but the main crops (eggplants and tomatoes) are harvested during the rainy season. Local opportunities for farm work are therefore available year-round. Banana trees are mostly replaced during the months of January and February. Breadfruit trees are picked at the start of the rainy season.

Finally, significant livestock sales take place just before the start of the school year. All wealth groups sell animals during this time to cover school expenses. However, income from livestock sales is not enough to cover school fees, which are relatively high in this zone given its peri-urban setting. Because of these education expenses, September is the most difficult time for accessing food in this zone.

Figure 24 Seasonal calendar in livelihood zone HT05 (Western Banana Plains of Arcahaie)

Drivers of wealth

Due to the heightened importance of agriculture in this zone, the way farmers access land is the main distinguishing factor among wealth groups (Table 10). Ownership, leasing, and sharecropping are the three ways of accessing land. Owned land is land acquired through purchase or inheritance and is generally farmed by middle and better-off households, but in some places, very poor and poor households also own land, albeit smaller quantities of marginal land in dry areas. Leased land (often owned by absent landowners) is tenant-farmed land for which the farmer pays rent negotiated on the basis of the term of the lease agreed upon by the parties, even though generally no written contract stipulates these terms.

All wealth groups typically lease land, but middle and better-off households are those who benefit the most. Very poor households constitute a small minority of those with this type of land agreement. The two ways of leasing land generally seen in the zone are:

- Leasing of land for producing banana crops in irrigated areas. The term of the lease is generally five years, with an annual rent of HTG 8,000 to 10,000 per carreau.
- Leasing of land for producing seasonal crops (melons, maize, sorghum) on dry land. The term of the lease is generally one year, with a rent of HTG 1,500 per carreau.

Table 10 Drivers of wealth in livelihood zone HT05 (Western Banana Plains of Arcahaie)

Drivers of wealth	Very poor	Poor	Middle	Better-off
Percentage of households (%)	20-30	20-30	15-25	10-20
Household size (#)	5-8	6-8	6-7	6-8
<i>Land (ca)</i>				
Irrigated/owned	0	0.12-0.5	0.5-1	1-2
Irrigated/leased	0	0.12	0.25-0.75	0.25-0.75
Irrigated/sharecropped	0-0.25	0.25-0.5	0	0
Rainfed/owned	0	0	0.25-0.75	0.25-0.75
Rainfed/leased	0	0.25-0.5	0.25-0.75	0
Rainfed/sharecropped	0.25-0.5	0	0	0
<i>Livestock holdings (#)</i>				
Goats	2-4	3-5	4-6	4-6
Cattle	1-2*	1-2	2-4	2-4
Pigs	0-1	1-2	2-3	0-1
Horses or donkeys	0	0-1	0-2	0

Source: FEWS NET

Finally, sharecropping is a way of accessing land in which the landowner hands over part of his or her land to a third party in exchange for an in-kind payment of one-third of the harvest. Sharecropped land is generally farmed by poorer households (very poor and poor). Households that access land this way generally have access to irrigated and dry land, allowing them to produce bananas.

Livestock holdings are a secondary driver of wealth. Most households own at least one cow (although very poor households tend rather than own), with better-off households owning up to three. They also own goats and, to a lesser extent, pigs.

Sources of food

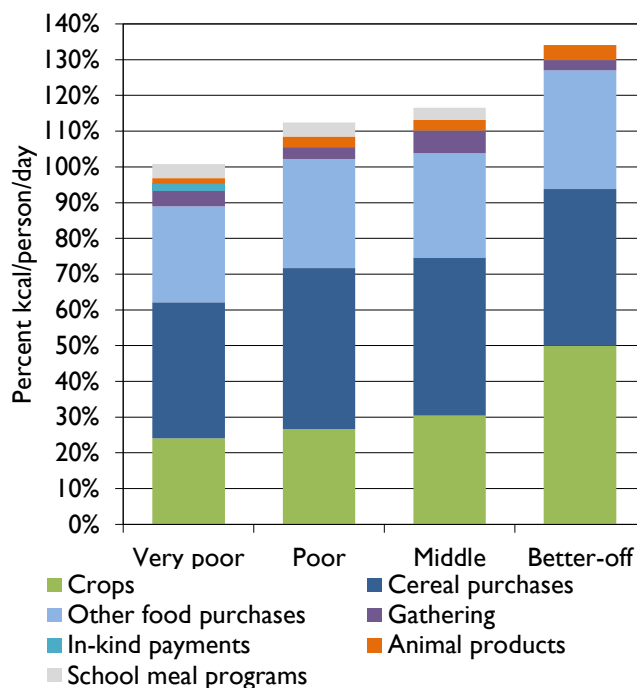
Food diversity in the zone makes households market-dependent, as their main staple food (rice) is not produced there. Households therefore obtain 65-77 percent of their energy needs from market purchases. Purchases of rice and maize (included in the "Staple food purchases" category) represent almost half of the kilocalories obtained from this food source (Figure 25).

Households produce small quantities of cassava, sorghum, and legumes (cowpeas and beans) and consume a significant portion of the plantain crop (covering 15 percent of minimal energy needs for very poor households, approximately 20 percent for poor and middle households, and more than 30 percent for better-off households).

Other than the main food sources, crop production, and market purchases, households have access to additional (but less significant) food sources. Cattle holdings provide households with access to fresh milk for close to three months out of the year. Some of the milk produced is sold locally. School meal programs are present in most villages. However, better-off households tend to send their children to private schools, which generally do not offer such programs. Farm laborers, especially those from very poor households, receive a prepared meal on days when they work. Finally, wild plant foods are a significant source of food for all households in the zone. This is especially true of mangoes and the "*arbre véritable*" (breadfruit tree), which produces fruit from April to June. Some of the fruit gathered is sold.

On the whole, the zone is in a situation of food security, thanks in large part to the excellent road network, good access to markets, and the possibility of purchasing rice and maize year-round.

Figure 25 Breakdown of sources of food in livelihood zone HT05 (Western Banana Plains of Arcahaie)



Source: FEWS NET

Sources of income

Agriculture is the most important economic sector in the zone (Figure 26). Fruit production provides a good source of income to rural populations, most of whom grow fruit. The sale of fruit (plantains, papayas, and melons) is the main source of income for three out of the four wealth groups and is a distinguishing factor among wealth groups in this zone. Better-off households earn an annual income eight times higher than that of very poor households, four times higher than that of poor households, and twice as high as that of middle households.

Only very poor households, which have neither their own land nor enough capital to lease irrigated land, must earn income outside the agriculture sector to cover more than 75 percent of their annual expenses. Labor opportunities, which are all local and in agriculture, are available in banana and other fruit plantations year-round.

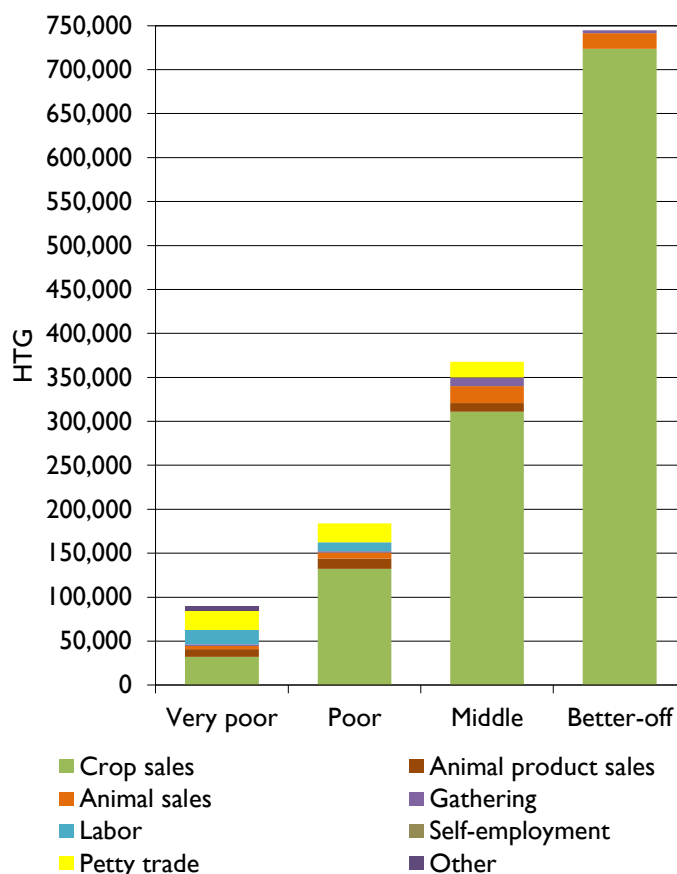
Crop sales make up 76 percent of the annual income of poor households (approximately HTG 130,000), 85 percent of that of middle households (approximately HTG 310,000), and more than 95 percent (approximately HTG 725,000) of that of better-off households. Very poor households produce crops under sharecropping agreements and must therefore cede one-third of their harvest to the landowner, but they are still able to earn 36 percent (approximately HTG 30,000) of their annual income from crop sales.

Very poor and poor households also earn income from farm labor, and together, crop sales and farm labor make up 54 percent of the annual income of very poor households and 82 percent of that of poor households. In short, poorer households are trapped in the vicious cycle of sharecropping. They cannot participate more fully in the agriculture sector as they do not have the capital to lease all the land they could farm on their own. On the other end of the scale, better-off households are faced with a shortage of arable land, making it difficult for them to expand their farming activities.

A very small percentage of annual income comes from livestock and animal product sales (milk and meat). Households generally sell five to seven animals, mostly pigs and goats. Only middle and better-off households own and can sell cattle. The age of animals sold ranges from three to six months for small ruminants and pigs to six to nine months for large ruminants. Poultry-raising is not reported in the zone.

Credit systems in the zone are mostly informal and small-scale and are offered by traders. However, large producers can obtain bank loans. Most very poor households, meanwhile, resort to informal loans at some point during the year. These are generally no-interest, very short-term loans (one to two weeks) used to fill weekly gaps in purchasing food and other essential items. Such loans are generally repaid in cash. Middle and better-off households have access to formal loans, the interest rates of which vary from 10-25 percent, with terms ranging from 3 to 12 months. Remittances from household members living outside the zone or outside the country were not reported in the zone.

Figure 26 Breakdown of sources of income in livelihood zone HT05 (Western Banana Plains of Arcahaie)



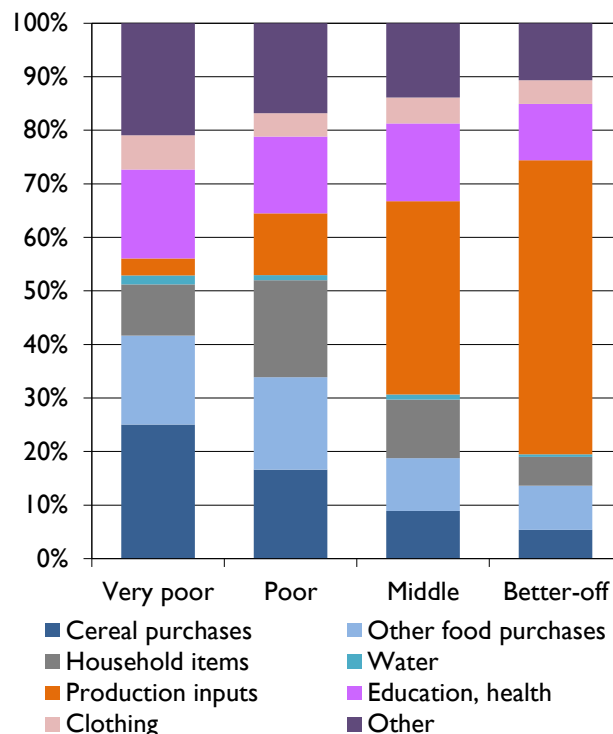
Source: FEWS NET

Expenditures

With very poor and poor households heavily market-dependent, food purchases absorb a significant portion of their annual income (more than 40 percent, or HTG 38,000, among very poor households and approximately 35 percent, or HTG 60,000, among poor households) (Figure 27). The share of food purchases for middle and better-off households is much smaller. Crop production inputs make up a larger portion of the expenditures of these two groups. Monoculture production on irrigated land requires significant investment. Better-off households therefore invest approximately 45 percent of their total "Inputs" expenditures in employing labor, 37 percent in leasing irrigated land, and 15 percent in purchasing fertilizer. The breakdown of agricultural expenditures is the same among middle and poor households, except that poor households spend a larger proportion on land leases. Very poor households' expenditures are limited to purchases of seeds and a small quantity of fertilizer.

Outside of food purchases, education and health expenses comprise the largest portion of very poor households' annual budgets. The "Other" category includes expenditures on transportation and nonessential goods. Poor households spend a larger proportion on the "Household items" category, as they purchase firewood and charcoal.

Figure 27 Breakdown of expenditures in livelihood zone HT05 (Western Banana Plains of Arcahaie)



Source: FEWS NET

Calendar of major sources of food and income for poor households

Figure 28 Main components of the food access calendar for poor households in livelihood zone HT05 (Western Banana Plains of Arcahaie)

	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Staple foods												
Rice												
Bananas												
Maize												
Income												
Crop sales												
Petty trade and labor												
Animal sales												
Expenditures												
Food												
Education												
Health care (peaks)												
Legend												
	Production			Market purchase			In-kind payments			Gathering		

Source: FEWS NET

Main hazards, coping strategies, and key parameters

The main hazards cited by rural communities in the zone mostly affect the agriculture sector: diseases affecting banana plantations, hurricanes, and lower banana sale prices linked to competition with bananas from the Dominican Republic.

Very poor and poor households use the following coping strategies:

- Changing eating habits (for example, by replacing rice with wheat flour).
- Increasing the consumption of wild plant foods (breadfruit)

Middle and better-off households use the following coping strategies:

- Increased livestock sales
- Increasing consumption of their own crops (bananas)
- Increasing the consumption of wild plant foods (breadfruit)

Table II Key parameters in livelihood zone HT05 (Western Banana Plains of Arcahaie)

Item	Key Parameter - Quantity	Key Parameter - Price
Crop production	• Production of bananas • Production of legumes • Production of melons and papayas • Production of cassava	• Price of bananas • Price of legumes • Price of melons and papayas • Price of cassava
Other	• Supply of wild plant foods • Supply of farm labor	• Price of wild plant foods • Price of farm labor • Income from petty trade

Source: FEWS NET

WEST GARDENING AND BEANS (LIVELIHOOD ZONE HT06)

Zone description

The West Gardening and Beans livelihood zone (HT06) is a relatively small zone located in the mountainous region of the OuestWest Department. The zone stretches from the edges of the urban outskirts of Port-au-Prince (municipality of Kenscoff) toward the southeast to the border with the Dominican Republic (municipality of Fonds-Verrettes). This zone has only seven municipal sections: Bongars, Sourcailles, Nouvelle Tourraine, Belle-Fontaine, Aux-Cadets, Grand-Fond, and Fonds-Verrettes.

The zone has a very humid climate, with two rainy seasons from March to May and August to October. Its vegetation is made up of forest area, brush, and prairies. Its sandy clay soil has high agricultural potential. In fact, the zone is considered a region with excess agricultural capacity. Agriculture is the foundation of the local economy; the main cash crops are market garden and other food crops, including potatoes, leeks, onions (all grown year-round), and beans. Market garden crops require the use of more expensive seeds and more intensive maintenance throughout the agricultural cycle but are more profitable than other food crops. In mountainous areas, soil preparation and maintenance is done using manual tools. Weeding market garden crops remains an arduous and delicate activity requiring extensive labor performed by workers from poorer households. In addition, poorer households (approximately one-third of the zone's population) tend to own much less land, limiting their agricultural productivity and making them more dependent on income from agricultural labor in order to access food on markets.

Small-scale livestock-rearing is another activity practiced in this zone. Most households own goats, while only middle and better-off households raise cattle. Horses and donkeys are present in this zone, although they too are often owned by middle and better-off households.

Market access

The West Gardening and Beans livelihood zone is located near the urban area of Port-au-Prince, but the western part of the zone (municipality of Kenscoff) is more mountainous and most roads are rocky, making access to markets more difficult. The eastern half of the zone has a better road network and a direct link to the Dominican Republic.

Vegetables produced in different locations in the zone are transported to large commercial centers in the metropolitan area before being redistributed to provincial markets and retail markets within the urban area of Port-au-Prince. The main markets for selling market garden crops from Kenscoff are the Croix de Bossales market (in Port-au-Prince) and the Pétionville market. Crops from Forêt des Pins are transported to the Croix-des-Bouquets and Croix de Bossales markets. These markets are also important for supplying the staple foods consumed in this zone (particularly rice). Livestock is mostly sold on the La Forêt market.

With no means of packaging perishable vegetables, producers must sell their produce as quickly as possible, off the field or on the market, and therefore have no real power to negotiate their prices.

Seasonal calendar

The zone's agricultural calendar has two seasons: spring and fall (Figure 29). Good rainfall distribution throughout the year and cooler temperatures than in neighboring zones make it possible to obtain two harvests of market garden crops, which are the most widely consumed crops in the zone. Maize is grown from April through August.

Most market garden crops are grown alongside other crops; common combinations include, for example, cabbage, leeks, and carrots or cabbage, lettuce, and tomatoes. It is also possible to combine market garden crops with other food crops, such as leeks, peppers, and beans or maize and beans. Seedlings are prepared in family nurseries found on farms.

Animal sales are more frequent during year-end celebrations, patron saint festivals,¹² and *the Rara festival*.¹³ Most wild plant foods are gathered from August to October and January to February. Avocado is the main wild fruit gathered in this zone, both in La Forêt and Kenscoff. Citrus fruit is rare, given the zone's altitude. Other wild fruits are gathered but in much smaller

¹² Religious festivals of Catholic origin honoring patron saints or protectors.

¹³ The *Rara*, meaning "eulogy/funeral oration" and/or "honoring of the ancestors," is a week-long street music festival held in conjunction with Easter festivities.

Most interviews conducted in the zone indicate that the reference year (July 2013 to June 2014) was slightly below-average in terms of food security. While crop production was good from July through December, low rainfall totals from April through June resulted in a smaller second season harvest. The reference year followed an above-average year (2012/2013), characterized by a good quantity and distribution of rainfall and good crop production levels. That year revitalized households' finances, which had become weakened and indebted during the two previous years (2010 and 2011). During the two difficult years following the earthquake, food consumption expenditures rose due to the presence of displaced persons, the deterioration of roads, and disrupted market access (Figure 29).

[illegible]

Drivers of wealth	Very poor	Poor	Middle	Better off
Percentage of households (%)	35-40	25-30	20-15	5-10
Household size (#)	7-8	7-8	5-6	5-6
<i>Rainfed land (ca)</i>				
Owned	0.12-0.25	0.25-0.5	1-1.5	1.5-2.5
Leased	0	0.25-0.5	0.5-0.75	0.75-1
<i>Livestock holdings (#)</i>				
Goats	0-1	1-2	3-5	5-10
Cattle	0	0	2-4	4-8
Pigs	0	1-2	2-3	4-6
Horses or donkeys	0	0	1-2	1-2

Better-off households own more animals and entrust some of them (particularly goats) to poorer households for tending. Only middle and better-off households own cattle. Milk is not commonly sold in the zone, but sale of calves is a significant source of income. Most households in the zone raise goats and pigs.

Sources of food

The fact that the zone is specialized in market garden crops limits the production of the main staple foods (maize and beans). Rice, the staple of the Haitian diet, is not produced in the zone and must be purchased. The degree of self-sufficiency is therefore low; crop production only covers between 5-10 percent of very poor and poor households' minimum energy needs and 15-20 percent of those of middle and better-off households (Figure 30).

The main food source is market purchases. Foods considered staples are cereals: rice, maize, and wheat and maize flour. Very poor and poor households purchase relatively larger quantities of staple foods than middle and better-off households to compensate for lower maize production. Middle and better-off households, on the other hand, purchase relatively larger quantities of "Other foods" (legumes, bananas, sugar, oil, meat, bread, and spaghetti). Thanks to their greater purchasing power, middle and better-off households are generally food secure. They also have their own source of milk for four to five months out of the year.

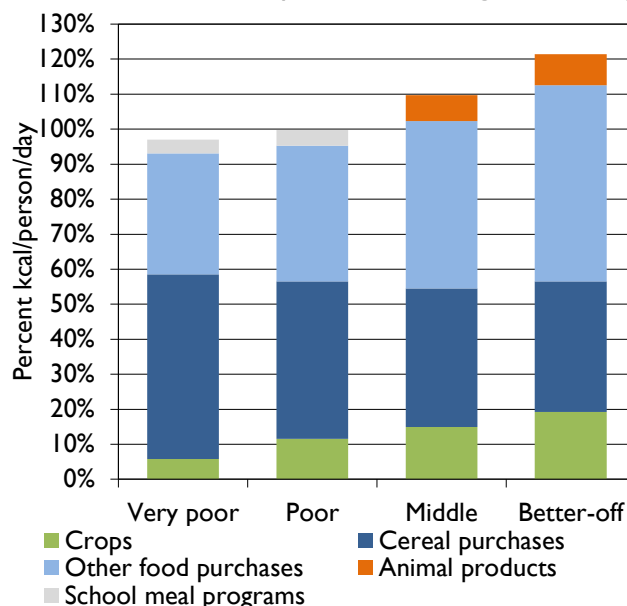
Sources of income

With access to more arable land, middle and better-off households specialize in market garden crop production. They earn almost all of their income from the sale of vegetables (Figure 31). They earn additional income from the sale of animals (cattle, goats, and pigs), commercial activities (for example, fertilizer sales), and small-scale services (for example, motorbike taxis). Potatoes, leeks, carrots, cabbages, and onions are the main crops sold by middle and better-off households. Maize and beans are also sold, but a larger portion of the harvest is reserved for household consumption. Finally, other sources of income for these two groups include salaried employment and trade in agricultural inputs.

Very poor and poor households have more diversified sources of income, as no one source provides them with enough income to cover their annual expenditures. Very poor households produce fewer market garden crops and only grow two or three crops at a time, such as cabbages, carrots, and beans. Both groups sell goats and pigs at certain times during the year when the need for cash is more acute. They also engage in petty trade at the local level.

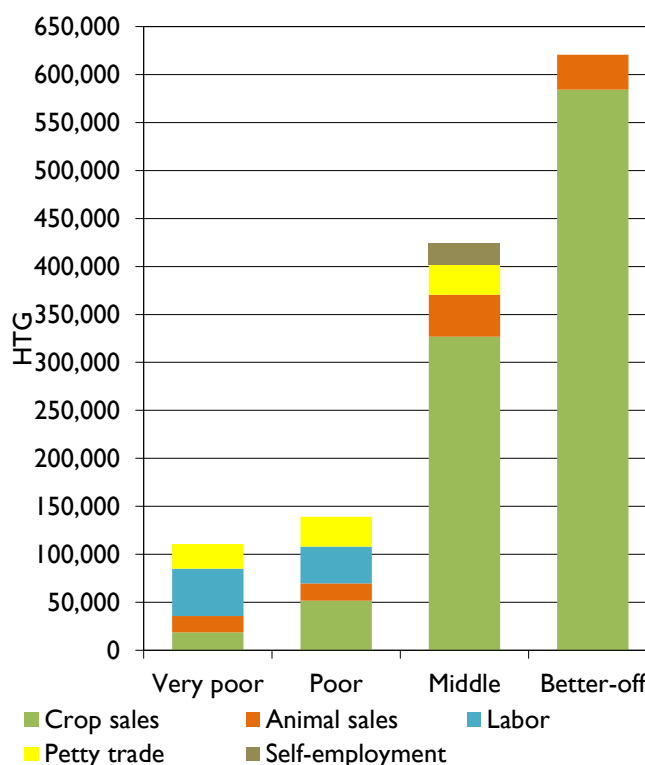
Access to land is once again the criteria that distinguishes wealth groups, even among poorer groups. While both very poor and poor households are engaged in identical income-generating activities, very poor households earn a larger proportion of their annual income from selling labor. Poor households dedicate more time to their own land, thereby earning more income.

Figure 30 Breakdown of sources of food in livelihood zone HT06 (West Gardening and Beans)



Source: FEWS NET

Figure 31 Breakdown of sources of income in livelihood zone HT06 (West Gardening and Beans)



Source: FEWS NET

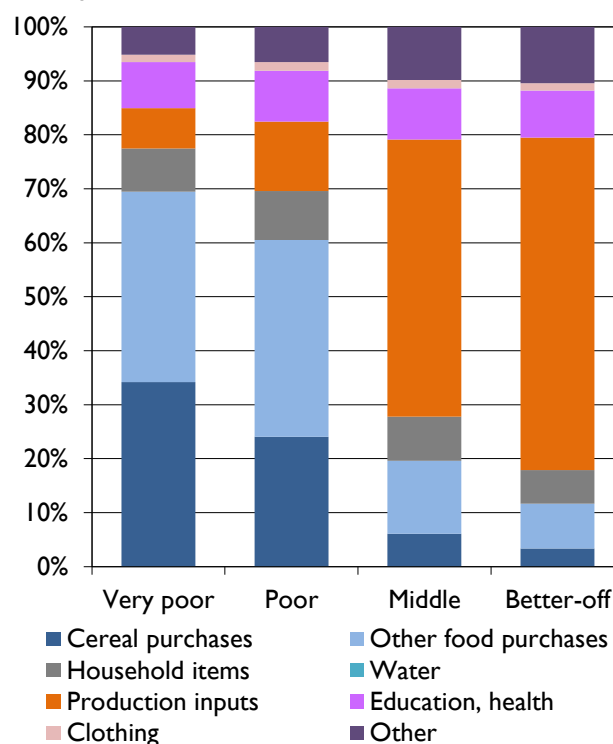
Expenditures

Market garden crop production requires significant investments in agricultural inputs. Farmers use three types of inputs: seeds, fertilizers, and crop protection products. They also pay wages to farm workers, who are hired at key times in the agricultural calendar by most households (except very poor households, which comprise the majority of those workers). Expenditures consume approximately 50 percent of the income earned from crop sales. This proportion is the same among all four wealth groups, which seems to indicate that it is difficult to benefit from economies of scale in family market gardening, even for better-off households.

All four wealth groups are highly market-dependent for staple food purchases (Figure 32). However, this expenditure item has more weight in the annual budgets of very poor and poor households. For very poor households, food expenditures exceed income earned from farm labor and crop sales combined. This is also the case among poor households.

Finally, due to significant differences in annual income, major differences are seen in spending on education, health, household items, and clothing. The figure above only represents the relative weight of each expenditure item, but annual expenditures among middle and better-off households are actually four to six times higher than those of very poor and poor households.

Figure 32 Breakdown of expenditures in livelihood zone HT06 (West Gardening and Beans)

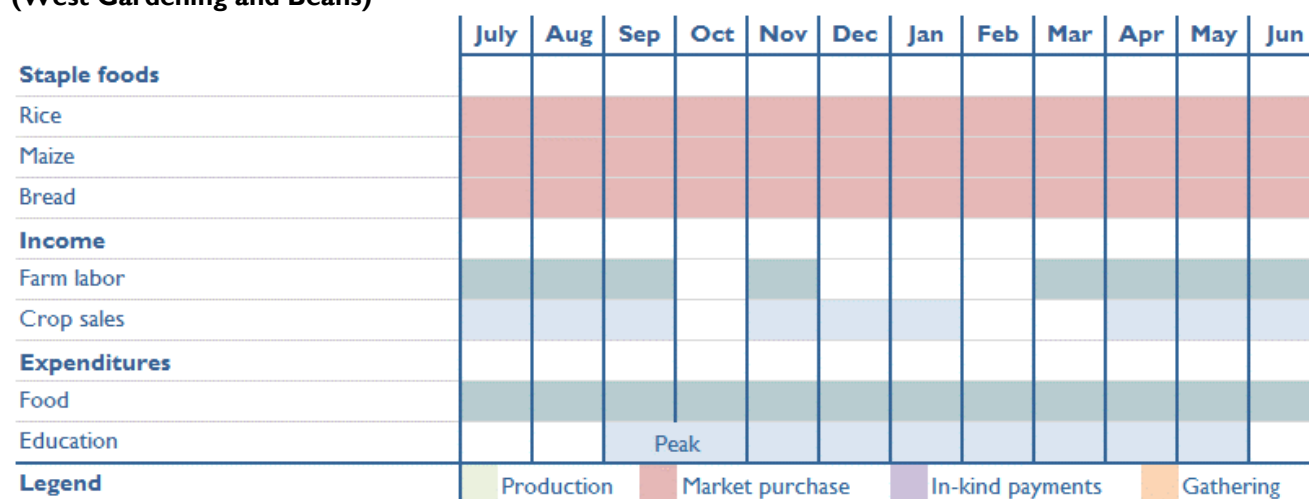


Source: FEWS NET

Calendar of major sources of food and income for poor households

As households in this zone depend almost entirely on markets for their food, income gaps are periods when food is most difficult to access. In this case, those periods are the months of February and October (Figure 33).

Figure 33 Main components of the food access calendar for poor households in livelihood zone HT06 (West Gardening and Beans)



Source: FEWS NET

Main hazards, coping strategies, and key parameters

The main hazards cited by rural communities in this zone are:

- Drought or a late start to rainy seasons; given the lack of rainwater storage and irrigation systems, crop production in the zone depends entirely on rainfall
- Hurricanes, particularly during the months of August and September
- Attacks on crops, and more specifically, caterpillar infestations, which affect maize and beans, and attacks on maize crops by pests, especially "*marocas*," which are tuber pests
- Disturbances to agricultural input supply channels
- Increased fertilizer prices, one of the factors with the greatest impact on expanding market garden production in the zone
- An excessive increase in staple food prices

Very poor and poor households use the following coping strategies, in descending order of priority:

- Increasing sales of labor locally or outside the zone (migration to Port-au-Prince, Croix-de-Bouquets, and the Dominican Republic)
- Increasing household debt
- Animal sales
- Firewood sales (resulting in increased deforestation, especially in La Forêt)

Table 13 Key parameters in livelihood zone HT06 (West Gardening and Beans)

Item	Key Parameter - Quantity	Key Parameter - Price
Crop production	• Production of rice, beans, and maize • Production of sweet potatoes • Production of bananas • Production of market garden crops	• Price of rice, beans, and maize • Price of sweet potatoes • Price of bananas • Price of market garden crops
Animal production	• Supply of cow's milk • Supply of cattle and small ruminants	• Price of cow's milk • Price of cattle and small ruminants
Other	• Supply of labor • Demand for credit	• Price of labor • Interest rates

Source: FEWS NET

SOUTH BEANS, BANANAS, AND PETTY TRADE (LIVELIHOOD ZONE HT07)

Zone description

The South Beans, Bananas, and Petty Trade livelihood zone (HT07) is the largest of Haiti's eight livelihood zones. This zone stretches from the southern to the western part of the country, covering several regions, including Les Cayes, Croix-des-Bouquets, Petit-Goâve, Grand-Goâve, and a part of Jérémie and Belle-Anse. Fieldwork focused on the municipal sections of Chambellan, Beaumont, Maniche, Petit-Goâve, and Pont Boudet. The populations surveyed are all rural and only speak Creole. They live off subsistence agriculture in a mountainous and plains terrain.

With clay-silt soil, a climate with average temperatures ranging from 25 to 30° C, and annual rainfall of 900 mm, the zone is moderately fertile. Aside from a few rare cash crop farms (coffee, peppers, and, to a certain extent, bananas), farming in the zone is traditional and based on subsistence crops grown without inputs. The main crops in the zone are maize, sorghum, peas, pigeonpeas, yams, bitter cassava, and sweet potatoes.

Access to land seems to be one of the most limiting factors to production, even though sharecropping, also called the "two halves" system, is practiced throughout the zone by households who do not own land. Agriculture, livestock-rearing, and petty trade are critical to the finances of households in the zone. However, poor households engage much more in sporadic activities (mainly charcoal sales, labor, and self-employment) to increase their income.

Market access

This livelihood zone covers a large part of the country and therefore includes several markets, although they are hard to access given the condition of rural roads. The trade network is characterized by departmental and local supply centers. Transactions are essentially the purchase and sale of local products, namely cereals, livestock, wild food products, imported foods, and other consumer goods. Products are sold on local markets such as Chambellan, Maniche, Beaumont, Fonds-Verrettes, and Titanyen, which are supplied by large commercial centers, such as Jérémie, Les Cayes, Petit-Goâve, Forêt des Pins, Croix-des-Bouquets, and Port-au-Prince.

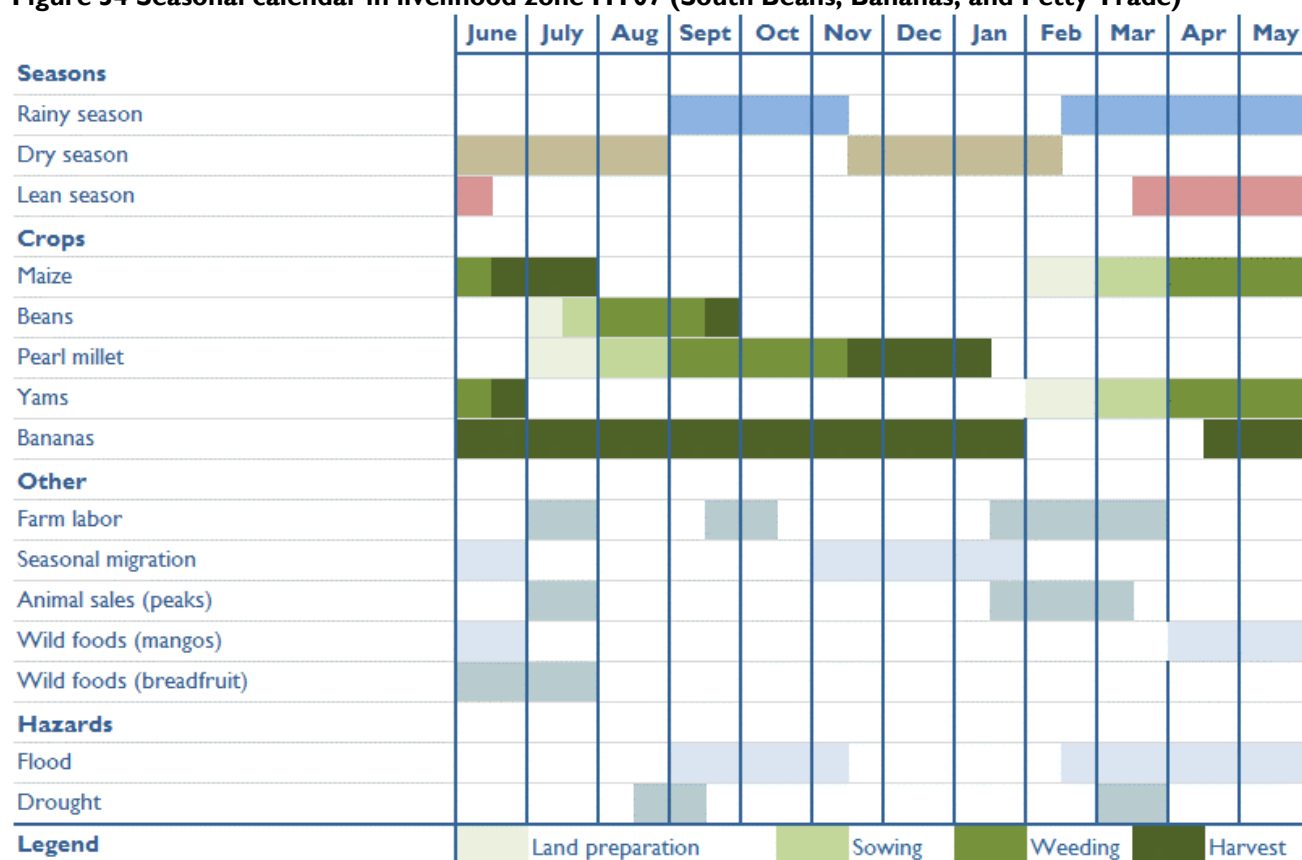
Products are easier to sell and purchase the closer households are to markets. The poor condition of roads has a significant impact on households' access to markets, especially during the rainy season, when they must sometimes cross entire rivers. It is not rare to see low-income households transport their products by foot, carried on their heads, or on donkeys. Women are heavily engaged in market transactions in this zone.

Seasonal calendar

A large portion of the year is taken up by farming activities, even though some months are busier than others. The period of intense farming activities (from March to August) coincides with the lean season. During that time, households (especially very poor households) must meet the high demand for farm labor. They are therefore vulnerable to decreased labor prices in the event of an oversupply of labor. This period of intense farming activities coincides with a higher incidence of mosquito-borne diseases such as malaria, dengue fever, and chikungunya, which risk increasing expenditures or reducing the availability of labor in households.

Most harvests start in the month of June. Poor households begin to sell and consume the main crops almost immediately after they are harvested, resulting in lower prices for these crops on the market. However, livestock prices on the markets at this time of year are relatively high, given the availability of these harvested crops; households do not need to sell livestock for money to purchase food. Social events take place year-round in the zone, but households spend the most on end-of-the-year religious festivities and at the start of the school year.

Relatively few activities take place in this zone from November through January; during this time some household members start their seasonal migration or engage in various independent activities, including masonry, carpentry, charcoal production and sales, and petty trade (Figure 34).

Figure 34 Seasonal calendar in livelihood zone HT07 (South Beans, Bananas, and Petty Trade)

Source: FEWS NET

Drivers of wealth

The main factor distinguishing wealth groups as identified by the community in this livelihood zone is the area of land farmed (Table 14). Farming the land requires capable labor within each household. Unfortunately, very poor and poor households have less available labor (compared to middle and better-off households) because they do not have enough income to hire day laborers and are the first to offer their own labor in exchange for cash or in-kind payments (food). Better-off households also farm their own land, while poorer groups have to lease land and, more often, resort to sharecropping.

Livestock-rearing is another differentiating factor among wealth groups. Poor houses often tend goats for other households.

Animals are a source of income for those who own them, especially middle and better-off households. Better-off households also own two horses on average (middle households own one on average), used to transport crops to supply centers.

Table 14 Drivers of wealth in livelihood zone HT07 (South Beans, Bananas, and Petty Trade)

Drivers of wealth	Very poor	Poor	Middle	Better-off
Percentage of households (%)	40-45	25-30	15-20	10-15
Household size (#)	5-8	5-7	5-7	4-6
<i>Rainfed land (ca)</i>				
Owned	0	0-0.25	1-1.5	2-5
Leased	0	0.12-0.25	0.5-0.75	0
Sharecropped	0.15-0.3	0.25-0.5	0	0
<i>Livestock holdings (#)</i>				
Goats	1-4	2-5	5-8	5-10
Cattle	0	1-3	2-4	4-10
Pigs	0-2	1-2	1-4	2-4
Horses or donkeys	0	0	1-2	1-2

Source: FEWS NET

Figure 35 Breakdown of sources of food in livelihood zone HT07 (South Beans, Bananas, and Petty Trade)

Sources of food

The reference year in this zone was relatively average in terms of crop production. However, poor households had a difficult time meeting their minimal energy needs, and very poor households were unable to meet their minimal energy needs (Figure 35).

Very poor and poor households cover an average of 20 percent of their energy needs with their own crops, compared to 28 percent for middle households and 40 percent for better-off households. This weak contribution of agricultural activities to meeting households' food needs (especially among poor groups) could be the result of the zone's traditional form of agriculture, which is known for its weak production capacity. That capacity is itself the result of certain constraints, including negligible use of production inputs, the existence of parasites and crop pests, and climate hazards. Crop production is by far the main source of food for households in the survey area. The main crops that contribute to households' food energy intake are maize, peas, bananas, pearl millet (sorghum), and tubers.

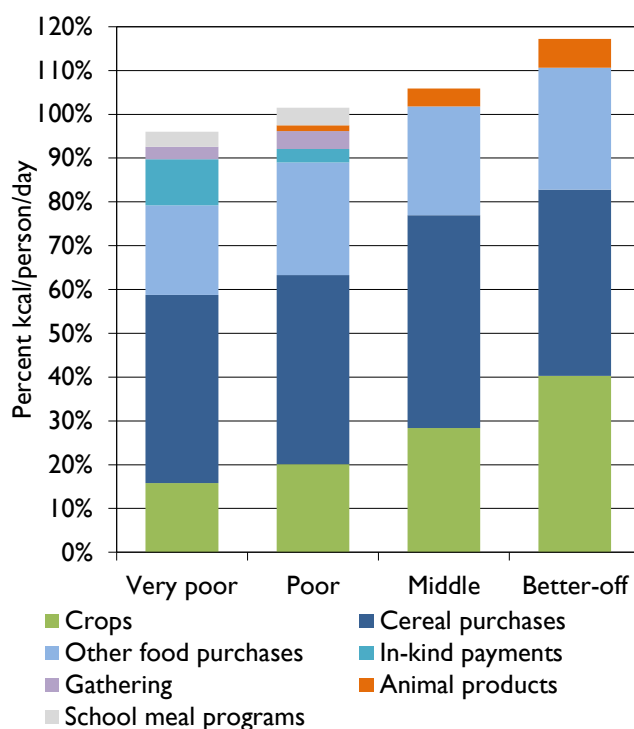
Given the zone's low crop production levels, all wealth groups resort to market purchases. They purchase mostly imported foods, such as rice, pasta, sugar, and oil, and locally produced foods such as peas and maize. For very poor and poor households, these purchases make up 60-70 percent of their food energy intake, approximately 40 percent of which comes from non-staple, imported foods. For better-off households, they make up over 70 percent, over 50 percent of which comes from imported foods. Given variations in food prices on the markets, this high level of market dependence constitutes a risk to food security in the zone.

Animal products contribute very little to the energy intake of households in the zone, with better-off households consuming more dairy products produced by their own animals.

School meal programs available to children contribute 3-4 percent of total food needs for all wealth groups. Food served through school meal programs is provided by the WFP through the National School Meal Program (PNCS), as in most other zones. Food received by very poor and poor households as in-kind payment for farm labor makes a significant contribution to meeting these households' minimal energy needs: it covers 10 percent of these needs among very poor households and 3 percent among poor households. Wild food products, especially breadfruit and avocados, contribute 3-4 percent of total food needs for very poor and poor households.

Sources of income

The main source of income in the zone is trade. Income from petty trade makes up 37 percent of the total income of poor households and 32 percent of that of middle households. Crop production is the second largest source of income for middle and better-off households, making up 25-30 percent of their income compared to 5-15 percent of that of very poor and poor households (Figure 36).



Source: FEWS NET

Figure 36 Breakdown of sources of income in livelihood zone HT07 (South Beans, Bananas, and Petty Trade)

The typical annual income of better-off households in this zone (approximately HTG 200,000) is three times higher than that of very poor households (approximately HTG 65,000) and twice as high of that of poor households. Better-off households, which can mobilize capital through petty trade and sales of their own crops and livestock, have many more options than poor households.

Better-off households can generally hire farm laborers to farm their land, providing a source of paid labor to very poor and poor households. Demand for farm labor is mainly for land preparation, sowing, and weeding activities. Income from farm labor makes up 52 percent of the total annual income of very poor households and 21 percent of that of poor households.

Selling charcoal or firewood is a widespread activity, especially among very poor and poor households but also among middle households. It makes up 15-20 percent of the total income of very poor and poor households. Selling sand is another self-employment activity created by the demand linked to construction.

Expenditures

Expenditures vary from one wealth group to another depending on their level of food self-sufficiency and ability to generate income (Figure 37). Food expenditures are highest among poor households, making up 70 percent of the total income among very poor households (compared to 60 percent among poor households), 30-45 percent of which goes to staple foods (compared to 30 percent for poor households). These purchased staple foods are mainly rice, maize, and peas. Rice is the most widely purchased cereal, reflecting its importance to this community's diet. After these foods, other food purchases represent another significant portion of households' annual income. These expenditures shares are especially high for very poor and poor households (an estimated 25-30 percent of income).

Education and health expenditures are also significant, accounting for approximately 10 percent of annual income for very poor and poor households and approximately 20 percent for middle and better-off households. Depending on students' capabilities, parents usually send their children to school, at least until secondary school. Among better-off groups, children can easily reach university. The interest in education is linked to the presence of Christian missions, which have long raised awareness about the importance of education among the local population. Health expenditures are mainly made to access modern health care centers. In some places, villagers also use traditional medicine, even though that is not typical among the local population.

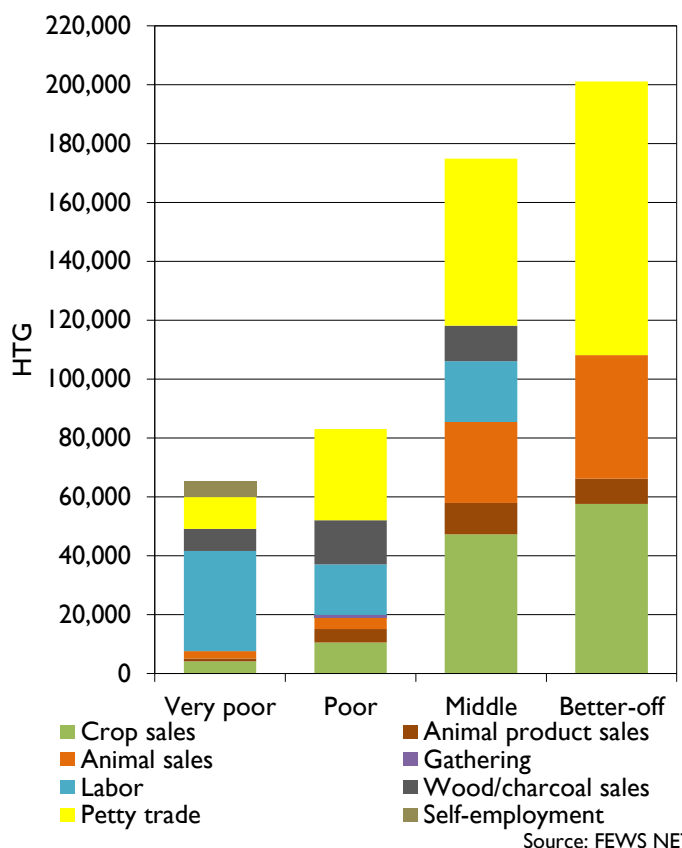
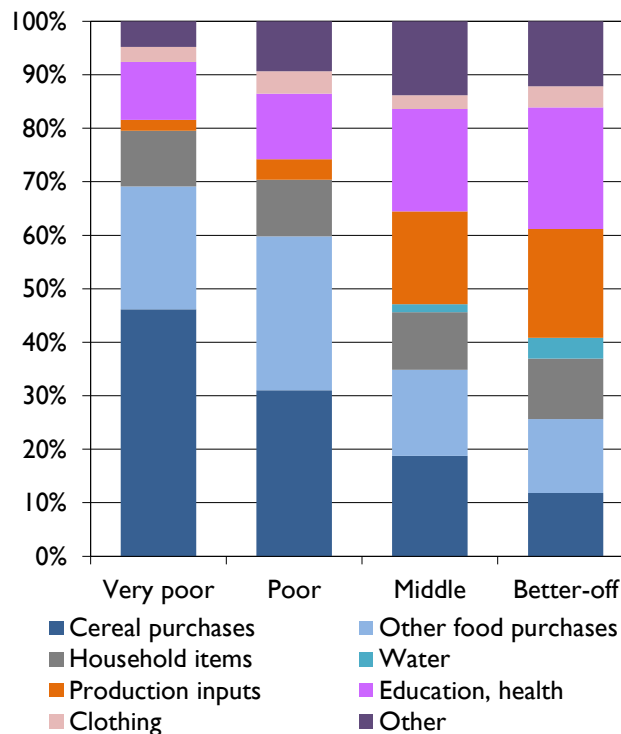


Figure 37 Breakdown of expenditures in livelihood zone HT07 (South Beans, Bananas, and Petty Trade)

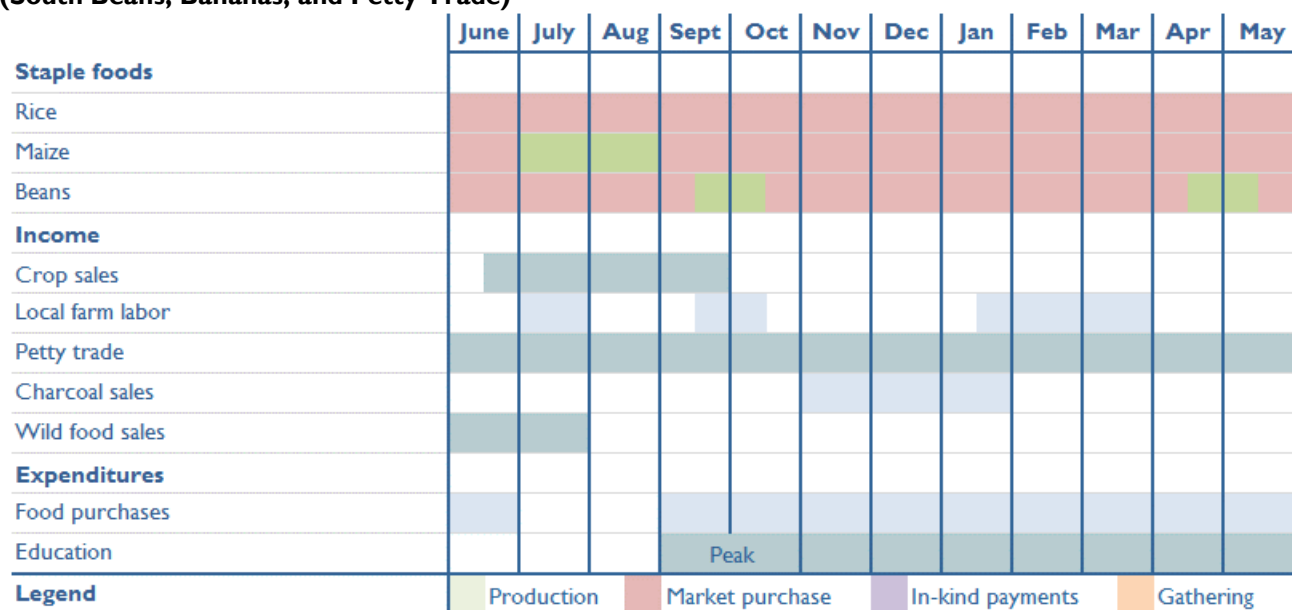


Expenditures on production inputs, particularly the purchase of seeds but also the payment of farm laborers' wages, are higher among better-off households. In fact, they make up 15-20 percent of total expenditures among middle and better-off households. Better-off households spend a significant amount on paying farm workers.

Transportation and communication are the largest components of the "Other" category, in addition to gifts, celebrations, loans, and savings.

Calendar of major sources of food and income for poor households

Figure 38 Main components of the food access calendar for poor households in livelihood zone HT07 (South Beans, Bananas, and Petty Trade)



Source: FEWS NET

Main hazards, coping strategies, and key parameters

The main hazards faced by households in this zone can be summarized as follows:

For crops:

- Flooding, resulting in soil leaching
- Drought due to a late start to the rainy season, or insufficient rainfall during planting
- Birds and locusts
- Scarcity and poor quality of seeds

For livestock-rearing:

- Livestock diseases
- Poultry diseases
- Lack of veterinary equipment/medicines

For market purchases:

- Higher prices, especially of imported foods
- Low market supplies (poor road conditions)

Very poor and poor households use the following coping strategies:

- Increased production and sale of charcoal
- Supply of additional labor
- Migration, domestically or internationally (to the Dominican Republic)
- Mortgage and/or sales of land

Middle and better-off households use the following coping strategies:

- Increased livestock sales

- Consumption of food stocks
- Loans, with interest rates from 5-10 percent
- Reduction of nonessential spending
- Migration, domestically or internationally (to the Dominican Republic, Brazil, etc.)

Table 15 Key parameters in livelihood zone HT07 (South Beans, Bananas, and Petty Trade)

Item	Key Parameter - Quantity	Key Parameter - Price
Crop production	• Production of maize • Production of sorghum • Production of peas • Production of pigeonpeas • Production of cassava • Production of sweet potatoes • Production of yams • Production of bananas	• Price of maize • Price of sorghum • Price of peas • Price of pigeonpeas • Price of cassava • Price of sweet potatoes • Price of yams • Price of bananas
Animal production	• Supply of cattle • Supply of goats	• Price of cattle • Price of goats
Other	• Supply of farm labor • Supply of construction labor	• Price of farm labor • Price of construction labor • Income from petty trade

Source: FEWS NET

SOUTHWESTERN COAST MAIZE, MANIOC, AND BUSH PRODUCTS (LIVELIHOOD ZONE HT08)

Zone description

The Southwestern Coast Maize, Manioc, and Bush Products livelihood zone (HT08) covers the westernmost part of the country's southern coast, stretching from Jérémie to Saint-Jean-du-Sud. The zone covers two departments: Grand-Anse (districts of Anse d'Hainault, Corail, and Jérémie) and Sud (districts of Cayes, Chardonnières, Côteaux, and Port-Salut). Some municipal sections in the zone border the sea, and households in these areas engage in fishing.

The zone is characterized by plains, foothills, and semi-humid plateaus, with average annual rainfall ranging from 1,200 to 2,000 mm. The soil varies from alluvial to sandy, sandy-silty, and clay, depending on the area. The local vegetation is composed of xerophytic plants (which can live in dry areas like La Bayahonde), mangroves, forest trees, fruit trees, and brush. The main production system is rainfed agriculture, but the zone is only moderately productive and characterized by net food production deficits. The main crops are grasses (especially maize and small plots of rainfed rice), legumes (peas, beans, and peanuts), roots and tubers (yams, sweet potatoes, and cassava), plantains, and fruits (fig bananas, coconuts, mangoes, pomegranates, citrus fruit, and breadfruit).

The zone's economy is highly diversified, with typical activities that include agriculture, livestock-rearing, the gathering of wild food products, fishing, labor, trade, and charcoal production. All of these sources generate a relatively similar proportion of income among households.

Market access

On the whole, the zone is relatively isolated and has an undeveloped road infrastructure, particularly in Grande-Anse. It can be accessed by a dirt road that extends from Jérémie to Irois in Grand-Anse before turning into a nearly inaccessible path from Les Irois to Tiburon. The segment linking Tiburon to Saint-Jean-du-Sud (in the Sud Department) is better maintained and includes a large paved section connecting it to the town of Cayes, the zone's largest market. A main road (with over 60 km of paved sections) links Jérémie to Cayes. However, markets located inside the zone have little connection to the markets in the region's largest cities and those in Port-au-Prince, due to the poor condition of the roads and long distances to travel, hindering the export of local products. This also affects food supplies in the zone. In fact, prices of imported foods such as rice, oil, and pasta – staple foods in the zone – are the highest in the country. Sea transport is less significant than ground traffic, especially since the construction of the road between Les Cayes and Jérémie. In addition, as of August 2014, the largest boat that was able to make the journey had been out of service for more than a year.

The main markets in the zone are in Kanem (in Abricots), particularly for the sale of roots and tubers, Les Irois (specialized in cereal sales), and Lopineau (in Les Roseaux), particularly for bean sales. The main markets for staple food supplies are those in Les Irois, Abricots, Bonbon, Dame-Marie, Les Anglais, and Jérémie, in Grand-Anse. However, in certain places small shops also sell staple foods purchased in Jérémie or Port-au-Prince.

Seasonal calendar

Rainfed agriculture is predominant and spans two rainy seasons; the first runs from April to June, while the second runs from September to November. Traditional fishing is possible year-round when northeasterly winds are not blowing. Fishery products include fish, queen conchs, and lobsters. Breadfruit is picked almost year-round, with two peak periods. Coconuts, an important source of income for better-off households, can also be gathered several times during the year (Figure 39).

Figure 39 Seasonal calendar in livelihood zone HT08 (Southwestern Coast Maize, Manioc, and Bush Products)

	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Seasons												
Rainy season												
Dry season												
Lean season												
Crops												
Maize												
Pigeon peas												
Bananas												
Cassava												
Wild foods												
Breadfruit												
Coconuts												
Fishing												
Hazards												
Hurricanes												
Drought												
Legend												

Source: FEWS NET

Drivers of wealth

Poverty is high in this zone: 70-85 percent of households are considered very poor and poor. This poverty is mainly linked to limited access to land and the capital needed to purchase livestock and fishing equipment (Table 16). Most households farm less than half a carreau (0.65 hectares) of land. Very poor households do not own land, and the land they farm is sharecropped. Poor households also resort to sharecropping to farm larger parcels of land. By comparison, middle and better-off households own larger quantities of land, but on the whole, the quantity of land farmed is less than in the country's more agricultural zones.

Livestock holdings are a secondary but relatively important criterion. Most households own at least one cow. Better-off households own an average of five cows that they raise themselves but can have up to eight tended by very poor and poor households. Better-off households consider livestock-rearing a form of savings. Poor households own few goats, despite the significant in-kind payments they receive in exchange for tending animals (they keep one kid out of every two born).

Only households with more capital (middle and better-off households) have fishing nets. However, most households engage in fishing. Other than nets, they use traps

Table 16 Drivers of wealth in livelihood zone HT08 (Southwestern Coast Maize, Manioc, and Bush Products)

Drivers of wealth	Very poor	Poor	Middle	Better-off
Percentage of households (%)	55-65	15-25	10-20	5-15
Household size (#)	6-8	6-7	5-7	5-7
<i>Rainfed land (ca)</i>				
Owned	0	0.25	0.5-1	2-2.5
Leased	0	0-0.25	0.25-0.5	0.5-1
Sharecropped	0.12-0.38	0.25-0.5	0	0
<i>Livestock holdings (#)</i>				
Goats	1-3	3-5	5-8	5-8
Cattle	1-2*	1-2	2-4	3-6
Pigs	1-2	1-2	2-3	2-6
Horses or donkeys	0	0	1-2	1-2
<i>Other productive assets</i>				
Nets	0	0	0-1	1-2

Source: FEWS NET

(woven baskets), seines (a type of net dragged on the shore), and fish-aggregating devices made of moorings, on which the top part of the line and the floats are colonized by seaweed. That seaweed creates new ocean ecosystems around which households can regularly fish species fit for human consumption.

Sources of food

The staples of the national diet (rice and maize) are only produced in small quantities in this zone. Together, they comprise only 3-10 percent of household crop production. However, breadfruit (*Artocarpus incisa*) is an important food in this zone, especially among very poor households, for whom it is a staple food for at least six months out of the year. This reflects the heightened importance of wild food gathering as a source of food for all wealth groups, even during years considered average in terms of food security (Figure 40).

Crops produced in this zone include cassava, sweet potatoes, yams, bananas, and beans. Because they farm larger areas of land, better-off households cover more of their minimum energy needs with their own crops.

Fishing only covers a small percentage of total energy needs, as fresh fish is low in calories, and most fish is sold. Milk and meat from their own animals are a more important source of food for all four wealth groups.

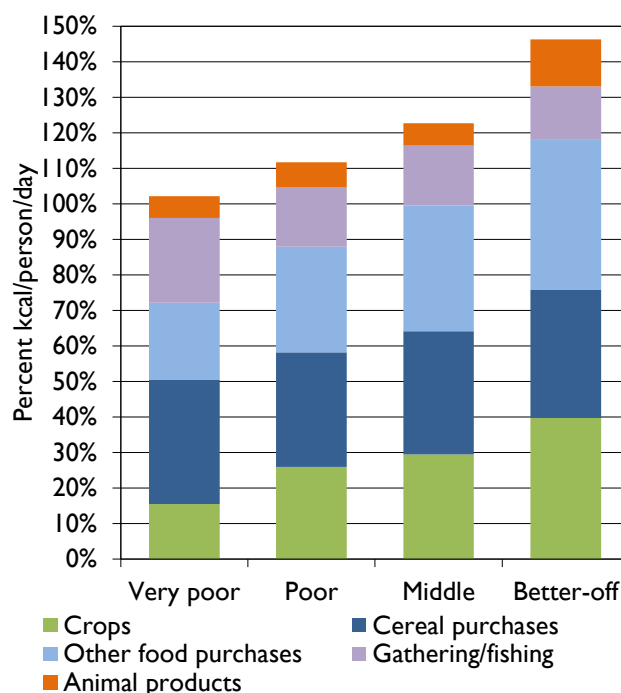
On the whole, during the reference year, households in the zone were able to ensure their food security thanks to the availability of natural resources and the inclusion of breadfruit as a key staple of the local diet. However, this zone often suffers from food shortages.

Sources of income

While significant differences exist in annual income, economic activities are fairly similar among the four wealth groups (Figure 41). All four groups' activities revolve around exploiting locally available natural resources. The only difference is in their capacity to exploit those resources. Very poor and poor households earn less income from crop sales but work on farms owned by better-off households during the soil preparation, sowing, and weeding periods. They also work as laborers in the fishing sector. With very low annual incomes, they have to sell firewood and charcoal or engage in petty trade, which is included in the "Self-employment" category. The distinction between very poor and poor households and the other wealth groups lies mainly in the level of capital they have to start a business and their capacity to sell fish and breadfruit.

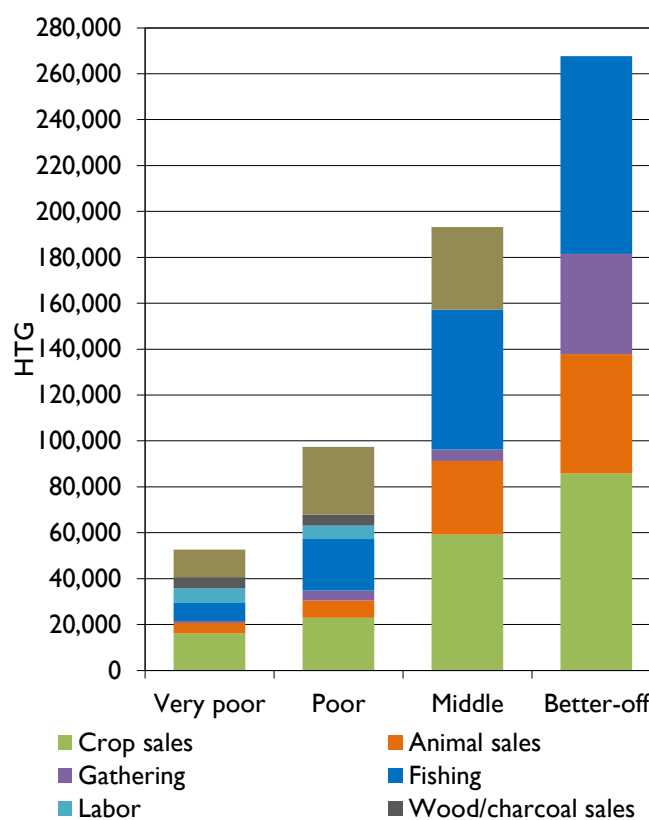
Better-off households earn enough income - from crop sales, livestock-rearing, and the sale of wild foods (fish and

Figure 40 Breakdown of sources of food in livelihood zone HT08 (Southwestern Coast Maize, Manioc, and Bush Products)



Source: FEWS NET

Figure 41 Breakdown of sources of income in livelihood zone HT08 (Southwestern Coast Maize, Manioc, and Bush Products)



Source: FEWS NET

fruit) - to maintain their lifestyle, unlike middle households, which also engage in commercial activities.

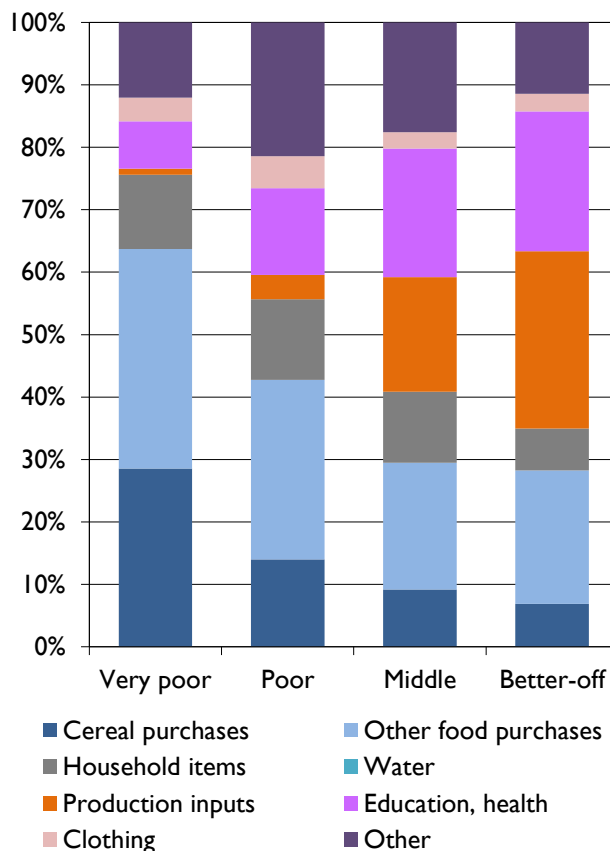
Expenditures

The level of self-sufficiency is particularly low in this livelihood zone, despite high consumption of wild food products. Very poor households spend nearly 65 percent of their annual budget on food purchases, while poor households (which earn almost double the annual income of very poor households) spend just over 40 percent of their income on food (Figure 42). Even middle and better-off households spend one-third of their budgets on this expenditure item. In fact, in absolute terms, food expenditures are nearly the same for all four wealth groups.

Outside of food, purchases of household items (tea/coffee, condiments, soap, lighting, and grain milling) and transportation costs (included in the "Other" category) consume a significant portion of very poor and poor households' budgets. Better-off households spend much more on production inputs, including farm workers' wages and land leases. Those items make up 18 percent and 28 percent, respectively, of these households' total expenditures. Better-off households also spend money to pay nonfarm workers, replace fishing equipment, and store livestock.

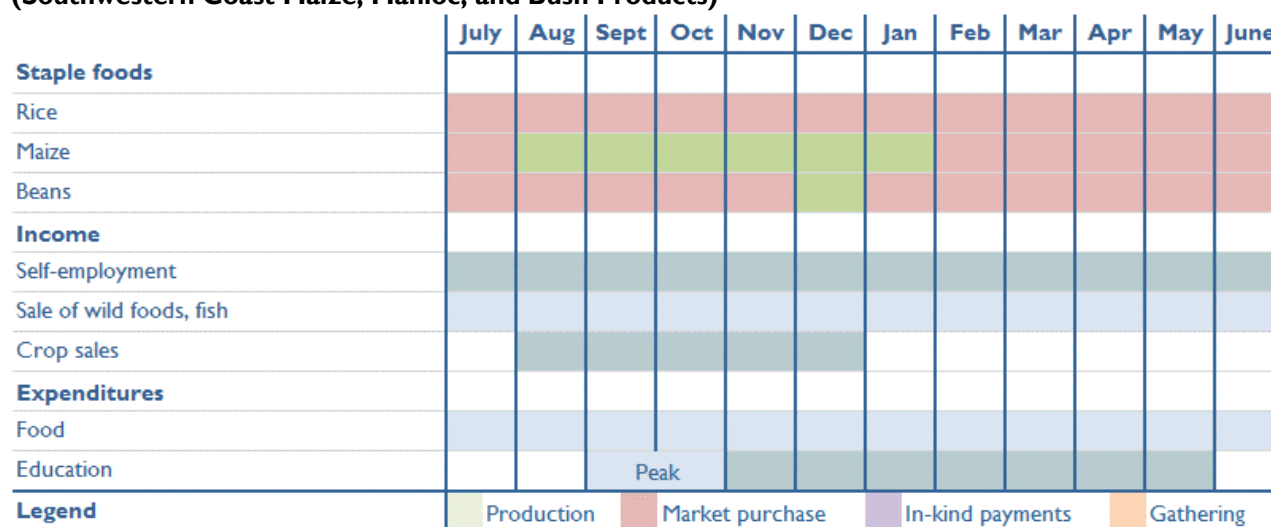
With the zone's high school enrollment rate, the "Social services" expenditure category is very high. Poor households generally sell their livestock just before the start of the school year to cover school expenses (school fees, uniforms, and supplies).

Figure 42 Breakdown of expenditures in livelihood zone HT08 (Southwestern Coast Maize, Manioc, and Bush Products)



Source: FEWS NET

Calendar of major sources of food and income for poor households

Figure 43 Main components of the food access calendar for poor households in livelihood zone HT08 (Southwestern Coast Maize, Manioc, and Bush Products)

Source: FEWS NET

Main hazards, coping strategies, and key parameters

The main hazards to crops cited by people in this zone are hurricanes, drought, and small tidal waves, which can reach up to 75 cm high. The main hazards for livestock-rearing are animal diseases, particularly those affecting pigs.

Very poor and poor households use the following coping strategies:

- Increased charcoal production
- Sale of lumber
- Consumption of lower-quality or less-desired foods

Middle and better-off households use the following coping strategies:

- Sale of high-value crops (like beans and pigeonpeas)
- Increased livestock sales
- Consumption of less expensive (and sometimes less desired) foods

Table 17 Key parameters in livelihood zone HT08 (Southwestern Coast Maize, Manioc, and Bush Products)

Item	Key Parameter - Quantity	Key Parameter - Price
Crop production	• Production of maize • Production of rice • Production of legumes • Production of tubers • Production of bananas	• Price of maize • Price of rice • Price of legumes • Price of tubers • Price of bananas
Animal production	• Supply of cattle, goats, and pigs	• Price of cattle, goats, and pigs
Other	• Production or supply of wild plant foods • Fish catches • Supply of farm labor • Supply of charcoal and firewood	• Price of wild plant foods • Price of fish • Price of farm labor • Price of charcoal and firewood • Income from petty trade

Source: FEWS NET

ANNEX 1: VILLAGES VISITED BY LIVELIHOOD ZONE

Zone		Village	Municipal section	Zone		Village	Municipal section
HT01	1	Jean Macoute	1 st Plate-Forme	HT05	1	Bélanger (1 st section)	2 nd Boucassin
	2	Crève	3 rd Plaine-d'Oranges		2	Courjal	1 st Boucassin
	3	Citerne-Rémy	1 st Citerne-Rémy		3	Bétel	4 th Cazale
	4	Dos d'âne	2 nd Baie-de-Henne		4	Pierre Payen	2 nd Bois-Neuf
	5	Grand Carénage	2 nd Sources Chaudes		5	Saintard	3 rd Des Vases
	6	Atrel	1 st L'Arbre		6	Mayard	1 st Délugé
	7	Pointe des Mangles	2 nd Sources Chaudes		7	Haut Digue Proby	1 st Boucassin
	8	Terre Blanche	2 nd Bassin		8	Digue	1 st Boucassin
HT02	1	Karrefou Anne	8 th Margot	HT06	1	Lefèvre	Grand-Fond
	2	Challot Plaisance	3 rd Plaisance		2	Souffrance	Bongars
	3	Guy Dacier	Port-Margot		3	Madeleine	Bongars
	4	Tranquille Pilate	Pilate		4	Mont-Myrtil	Sourçailles
	5	Trois-Ravines	2 nd Milot		5	Gros Cheval	Forêt des Pins
	6	Centre Savanette	1 st Savanette		6	Oriani	Forêt des Pins
	7	Dekou	Ouanaminthe		7	Èspes	Colombier (municipality of Thiotte)
	8	Savane Église	Sainte-Suzane		8	Boukonchot	Forêt des Pins
HT03	1	Apollon	Cerca-Carvajal	HT07	1	Cadette	2 nd Boucan
	2	Mendoce	Cerca-Carvajal		2	Morne à Dedan	4 th Beaumont
	3	Lamielle	Cerca-la-Source		3	Melon	8 th Maniche
	4	Acajou Brûlé I	Cerca-la-Source		4	Olivier	2 nd Delatre
	5	Thomonde	Thomonde		5	Cavanak	1 st Bino
	6	Baptiste	Belladère		6	Novailles	2 nd Crochu
	7	Camathe	Saint-Michel		7	Fuji (or Fougère)	5 th Génipailler
	8	Yayou	Saint-Raphaël		8	Diacre	1 st Fond-Parisien
HT04	1	Bas-Coussin	Lambert	HT08	1	Anse-du-Clerc	1 st Anse-du-Clerc
	2	Martineau	La Chapelle		2	Les Gommiers	4 th Les Gommiers
	3	Séгур	Petite-Rivière		3	Bariadelle	1 st Bariadelle
	4	Pont Masson	Marchand		4	Grand Bassin	2 nd Bel-Air
	5	Deseaux	Deseaux		5	Nan Sable	1 st Blactote
	6	Anbalokou, Duclos, Bas La Cours	Desdunes		6	Nan Kass	1 st section Vérone
	7	Moreau des îles	Verrettes		7	Bousquette	1 st section Randel
	8	L'Estère	Petites-Desdunes		8	Mahut Hugues	1 st Tapion

ANNEX 2: LIST OF FIELD TEAM PARTICIPANTS

Name	Organization	Title
Acquissa, Jean Marie	CNSA/DDANA	Technical Secretary
Alix, Joseph	FEWS NET	National Technical Officer
Arquero, Cristina	GVC	Assistant Interviewer
Aubourg, Marcelin	MARNDR/CNSA	CNSA/MARNDR Liaison
Belony, Jean Louis	CNSA/DDA-C	CNSA/MARNDR Liaison
Burin, Fidell Joseph	MARNDR/DDAS	Monitoring & Evaluation Officer
Cange, Paulin	GVC	Interviewer-Agronomist
Cazeau, Harmel	CNSA	Observatories Official
Charité, Louis	CNSA	Technical Secretary
Coneff, Jenny	FEWS NET	Livelihoods Adviser
Dieugrand, Jn. Baptiste	MPP	Interviewer-Agronomist
Dilou, J Prosper	CNSA	Consultant-Interviewer
Dimanche, Jude	CNSA	Consultant-Interviewer
Faude, Joseph	Oxfam	Interviewer-Agronomist
Guerrier, Geraldine	CNSA	Consultant-Interviewer
Hoffine, Tim	FEWS NET	Food Security Analyst
Jackendy, Jean	Oxfam	Consultant-Interviewer
Konate, Sosthène	Oxfam	Technical Consultant
Laurin, Jean Mestguer	CNSA	Consultant-Interviewer
Lecumberri, Nora	Food Economy Group	Technical Consultant
Maxaint, Jean-Baptiste	Oxfam	Interviewer-Agronomist
Montlouis, Carlo	CNSA	Urban Observatory Official
Muler, Paul	MPP	Interviewer-Agronomist
Neggo, Jules	CNSA	Consultant-Interviewer
Noura, Garba	Food Economy Group	Technical Consultant
Peutidier, Kerly	CNSA/DDANA	CNSA/MARNDR Liaison
Prosper, Remi	CNSA	Technical Secretary
Schooser Kerven, Jean Louis	CNSA	Consultant-Interviewer
St. Jean, Jocelyn	CNSA	Consultant-Interviewer
St. Louis, Geoffrin	CNSA	Technical Secretary
Theard, Marcelin	CNSA/DDANA	CNSA/MARNDR Liaison
Toussaint, Ronald	CNSA	CNSA/MARNDR Liaison
Ulysse, Hilaire Jean	CNSA	Agronomist-Nutritionist
Valentin, Ricardo	CNSA	Consultant-Interviewer
Valery, Medy François	CNSA	Consultant-Interviewer
Yacouba, Maman Bachir	FEWS NET	Livelihoods Specialist