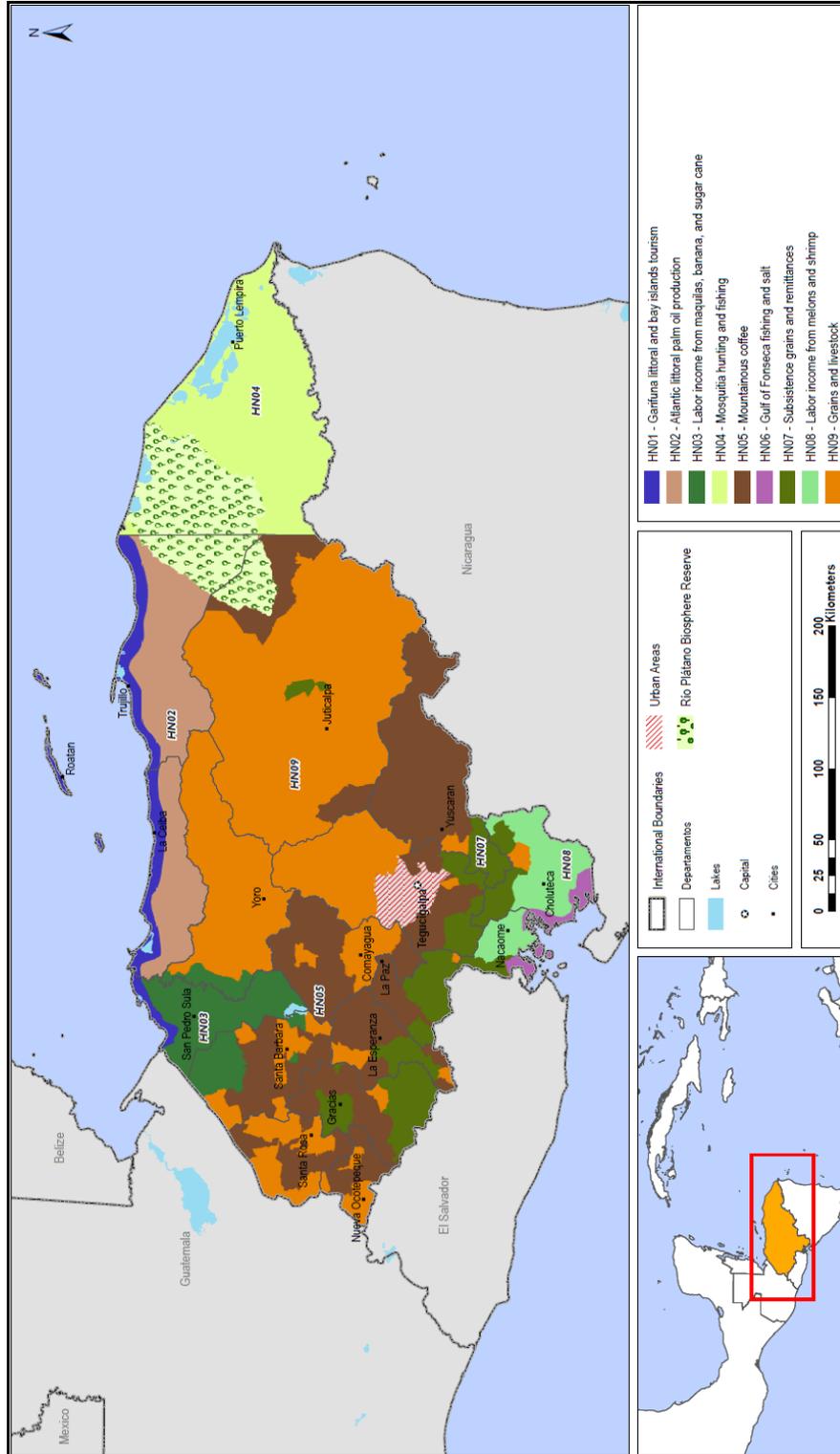


**MAP OF LIVELIHOOD ZONES IN HONDURAS**



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**ACRONYMS AND ABBREVIATIONS**

FAO	Food and Agriculture Organization of the United Nations
FEWS NET	Famine Early Warning Systems Network
G	Gathering
HEA	Household Economy Approach
INFOAGRO	Agricultural Technical Information
MINADERP	Ministry of Agriculture and Rural Development
masl	Meters above sea level.
MP	Market purchase
OP	Own production (crops, livestock)
UN	United Nations
USAID	United States Agency for International Development
UTSAN	Technical Unit for Food Security and Nutrition
WFP	World Food Programme

## INTRODUCTION

The Livelihood Zone Descriptions, sometimes called livelihood zoning “Plus”, product is based on the Household Economy Approach (<http://www.feg-consulting.com/resource/practitioners-guide-to-hea/practitioners-guide-to-hea/>). It includes a traditional livelihood zoning component (<http://www.feg-consulting.com/resource/practitioners-guide-to-hea/2%20Livelihood%20Zoning.pdf>), which describes typical characteristics of the zone, seasonal calendars and access to food by the poor, and some characteristics of socioeconomic status are explored through the juxtaposition of the relatively poorer and relatively better-off households. It does not exclude the existence of other wealth groups in the zones, such as middle and very poor groups, though for the purpose of this study, we only describe two groups from each zone. The Livelihood Zones and Descriptions product also provides a certain minimum amount of information about all livelihoods, such as food sources and income sources for each group in each zone. A brief description of general characteristics is also included in the product, along with seasonal and food access calendars for each zone. Finally, the zones most vulnerable to food insecurity are identified.

It should be noted that HEA defines a livelihood zone as a geographic area in which households meet their basic livelihoods needs, especially food and cash income, in relatively similar ways. This also means that socio-economic groups have relatively similar assets, and similar consumption patterns. These similarities apply to both good and bad years in that, coping strategies in response to shocks within the same livelihood zone are also relatively similar<sup>1</sup>.

The HEA does not use international or national socioeconomic measures to classify the population. First, because geography tends to define the options for households’ access to food and income, and, secondly, because of the ability to exploit these options and survive a crisis is largely determined by wealth; i.e., that what people have is determined by their productive assets (access to land, capital, livestock), along with their level of education and access to political and social networks, which determines the ways in which they will be able to obtain food and money or how they will address a sudden or long-term change. Wealth groups have been identified for each livelihood zone based on the aforementioned considerations. Therefore, poor households with little land can work for better-off households in order to obtain money to buy food, and these better-off households can use benefits derived from agriculture as capital to participate in trade.

It is worth highlighting that wealth can also affect household exposure to a hazard, particularly in conflict situations in which those with greater wealth may become targets of attack. In the event of a crisis, poor and better-off households will be affected differently and, therefore, it is justified to study them separately, since the differences between households will be critical in an analysis of food security and vulnerability to different hazards.

It should be noted that with the HEA approach, “poor” households are poor in relation to other families in their livelihood zone; however, they can find themselves in a better position than poor households of a different livelihood zone. The HEA approach has been set in this way because it aims to facilitate the understanding of differences in the community’s pattern of life, for these differences determine how people will be affected after shocks or changes in income and food access.

Finally, this Livelihoods Zones and Descriptions document, which includes the map and descriptions of the livelihood zones, is part of the knowledge base for FEWS NET’s food security monitoring activities. These tools provide points of reference and indicate whether the conditions reported at a given time justify a more in-depth study.

The results presented in this report describe the context of the livelihoods of zones identified, as well as hazards and response strategies among poor households, which allows anticipating how households may be affected by various shocks. In addition, they provide a geographic context for interpreting existing monitoring data on production, prices, and other indicators in order to identify potential problems; also, rapid assessment teams may be able to use the zoning as a basis for sampling in their studies.

The methodology for elaborating the livelihood zone maps and descriptions in this document consisted of the following steps:

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<sup>1</sup> For more information about the principles and analysis of Household Economy Approach, see pages on livelihoods at <http://www.fews.net> or download “Application of the Livelihood Zone Maps and Profiles for Food Security Analysis and Early Warning.”

1. FEWS NET researched available secondary information regarding geography, climatology, demographics, agriculture, livestock, markets, etc.
2. A small group of key informants with broad knowledge of livelihoods nationally and the FEWS NET team gathered in Tegucigalpa for one day to review secondary information and to generate an initial, draft proposal of an update to the Honduras livelihood zone map.
3. Following this, a larger group of key informants representing different parts of the country and with more specific knowledge of local livelihoods from their area gathered for a workshop October 15-18 of 2013 in Tegucigalpa. The key informants worked in small groups and in plenary to discuss and improve upon the draft livelihood zone map and to document key characteristics of the livelihood zones, including rough sketches of wealth group characteristics and hazards and coping strategies.
4. FEWS NET circulated a first draft of this Livelihood Zones and Descriptions product to participants for comment in early December. This, final Livelihood Zones and Descriptions product represents the participants' consensus regarding livelihoods in Honduras.

It should be noted that when defining livelihood zones, key informants were inclined to divide the country according to the most salient economic activities (regardless of the number of households engaged in the activity) or productivity levels of a specific crop rather than the livelihood characteristics of the general population. Despite this, the final zoning product provides an excellent description of the most important livelihood strategies for poor households, as well as a basic understanding of the relationships between different wealth groups that drive the household economy for most people within the zone.

In border areas of livelihood zones, some communities may share livelihoods with neighboring zones. Validation of livelihood zone boundaries will be left to future field work. In addition, workshop participants identified additional specific information regarding the relative importance of different types and sources of food and income for 3-4 wealth groups. This quantitative information may serve to deepen understanding of livelihoods in Honduras through a Livelihood Profile product once verified in the field in the future.

## LIVELIHOODS IN HONDURAS

Honduras is a small country of approximately 113,000 km<sup>2</sup> located in Central America. To the North and East, it shares borders with the Atlantic Ocean, to the southeast with Nicaragua; to the South with the Gulf of Fonseca and El Salvador, and with Guatemala to the West.

The country is administratively divided into 18 departments and its population has a population of about eight million,<sup>2</sup> distributed equally between urban and rural areas. It is a multiethnic country comprising of mestizos, indigenous people (Lenca, Miskito, Tolupanes, Chorti, Pech, and Tawahkas), Garifuna, and Creole English speakers.

Honduras is a subtropical country with a warm and humid climate on the coast with an average temperature of 31°C and a more temperate climate in the mountainous area. Honduras is topographically diverse with mountain ranges, plateaus, and deep valleys with extensive, fertile plains, which explains its wide biodiversity<sup>3</sup>. There are two main seasons: a rainy season, lasting from June to October and a dry season, from November to May. There are 10 major watersheds, two of which drain into the Pacific and eight that drain into the Atlantic. Several of the rivers are navigable.

Approximately 28 percent of the land is used for agriculture, employing about 39 percent of the population. Most of the agricultural land is devoted to the production of low-value crops such as bananas, plantain, rice, maize, and beans. In the mountains, where small-scale farmers produce basic grains, slopes are often steep and difficult to cultivate<sup>4</sup>.

The main agricultural export commodities are coffee, bananas, shrimp, lobster, sugar, basic grains, fruits, and frozen meat, contributing 24 percent of the GDP. Industrial exports include textiles and apparel, cement, wood products, cigarettes, and processed food<sup>5</sup>.

Honduras is the second-poorest country in Central America. It is classified as a low-/medium-income country with persistent problems of poverty and inequality. Income per capita in 2010 was approximately USD 1,880. It is ranked 121<sup>st</sup> among the 187 countries identified by the 2011 Human Development Index of the United Nations Development Programme.

Extreme poverty is primarily rural in nature. Sixty percent of the total population falls below the national poverty line, and 36 percent falls below the extreme poverty line. In rural areas, these figures reach 63 percent and 50 percent, respectively. The largest concentration of rural poverty and extreme poverty is attributed to the Basic grains for subsistence and remittances zone. The high prevalence of poverty coincides with a low level of employment opportunities, which is one of the major causes of high labor-emigration levels.<sup>6</sup> It is important to note that one of the main drivers of rural poverty is the highly unequal distribution of wealth, particularly land, but also financial, human, and social capital.

The country's major markets are located in Tegucigalpa, San Pedro Sula, La Ceiba, and Comayagua, where the basic necessities are marketed at all levels from retail to wholesale. This includes basic grains such as maize, beans, and rice.

The most frequent natural hazards are droughts, which are particularly frequent in the Southern "dry corridor", and hurricanes and floods along the Caribbean coast. Variations in food prices are also a hazard in the country, as most of the poor population depends on the market as their primary food source.

Some of the main characteristics of the livelihoods identified are:

- Maize and red beans are considered the staple food for the Honduran population, except in zones along the Caribbean coast, where the basic staples are rice and red beans. Throughout the country, the rural population is dedicated to the cultivation of basic grains both for their own consumption and sale.

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<sup>2</sup> <http://www.ine.gob.hn/>, 2010

<sup>3</sup> [http://www.fao.org/nr/water/aquastat/countries\\_regions/hnd/indexesp.stm](http://www.fao.org/nr/water/aquastat/countries_regions/hnd/indexesp.stm)

<sup>4</sup> <http://faostat.fao.org/site/377/DesktopDefault.aspx?PageID=377#ancor>

<sup>5</sup> <http://faostat.fao.org/desktopdefault.aspx?pageid=342&lang=es&country=95>

<sup>6</sup> [http://www.ifad.org/operations/projects/regions/pl/factsheet/honduras\\_s.pdf](http://www.ifad.org/operations/projects/regions/pl/factsheet/honduras_s.pdf)

- Though maize and red beans are produced nationwide, they earn their places in the titles of zone 7, Subsistence Grains and Remittances, and zone 9, Grains and Livestock because:
  - Very few other options for food and income sources exist for zone 7. Subsistence production predominates.
  - Zone 9 is a surplus-producing zone for both maize and beans. Even after selling a portion of their harvest, poor producers in this zone rely on own production for food for about six months of the year, almost twice as long as those in other zones.
- Because access to land is limited, the sale of agricultural labor is the main source of income for the poor throughout the country. The poor are able to produce about three months of basic grains for consumption on average across the zones; the poor also sell a portion of their own production.
- Export crops, such as African palm oil, coffee, sugarcane, melons, and vegetables, generate significant employment opportunities in the different urban regions. This is where most of the poor population works as day laborers.
- In peri-urban zones, the main sources of employment are the textile *maquilas* (factories in free-trade zones), found mainly in zone 3.
- Access to land and the education level of the household head are the key determinants of wealth in most zones. These resources enable middle and wealthy households to have relatively more diverse and/or more stable livelihood strategies, including formal employment or formal trade. However, wealth characteristics stand out in the following zones:
  - In the Labor Income from Maquilas, Bananas, and Sugarcane zone (zone 3), the level of education of the household head is the primary determinant of wealth.
  - In zone 5, the Mountainous Coffee zone, the difference between wealth is characterized by access to agriculture mechanization and other technological advancements, including agricultural inputs.
- In zone 6, Gulf of Fonseca Fishing and Salt Zone, and zone 8, Labor Income from Melons and Shrimp, located in the southern region of the country, the poor share several common sources of income, i.e. the sale of labor in the production of melon, watermelon and shrimp. However, these livelihoods are zoned distinctly because fishing is the primary activity in zone 6, and because the source food almost entirely from the market. In zone 8, on the other hand, fishing is significantly less important, and the poor produce some basic grains.
- Indigenous and African minorities, constituting about 6.5 percent of the population of Honduras, are mainly concentrated in zones 1 and 4 and often work in subsistence agriculture or as day laborers. Many of them do not own any land. A small proportion has some access to communal land to grow their crops.

In Honduras, the risk of food security is highest in the zones where there is a higher risk of crop loss due to frequent natural hazards (i.e. drought or flood), and where the diversity of income-generating opportunities is least.

The zone that is considered to be most at risk of food insecurity is zone 7, Subsistence Grains and Remittances. This zone is located in the Central American dry corridor, where drought is frequent. The production of basic grains is for subsistence purposes, with high dependence on red beans and maize. The high concentration of poverty and frequency of hazards limits economic diversification. As a result, the poor migrate seasonally to other zones, particularly zone 8 to the South and zones 3 and 5 to the North to sell their labor.

Zone 6, Gulf of Fonseca Fishing and Salt Zone and zone 8 Labor Income from Melons and Shrimp, are also prone to food insecurity for the reasons noted above. The problems are exacerbated because of a high population density that constrains opportunities to expand income generation in the event of a shock. Erosion of natural resources is also cause for concern.

**RECENT EVENTS AFFECTING FOOD SECURITY IN HONDURAS**

The following table summarizes recent events affecting the food security, dating back about a decade.

<b>Period</b>	<b>Event</b>
1998	In October 1998, flooding from Hurricane Mitch caused extreme damage nationwide. Entire cities were destroyed. Up to 80 percent of crops were lost, and it is estimated that 20 years of investment in infrastructure was lost. Losses amounted to five billion 1998 dollars.
2001	The precipitous drop in international prices for coffee caused significant losses in foreign currency earnings as Honduran coffee production accounted for 8.2% of GDP. The shock affected the trade balance, deepening external financing needs.
2005	Hurricane Stan caused flooding with significant crop and household asset losses in the North and West.
2007	Flooding near the Atlantic coast due to Hurricane Felix caused crop losses.
2008	Flooding due to Tropical Depression 16 caused crop loss in the North and West.
2010	The international economic crisis resulted in the closure of several textile <i>maquilas</i> and reduced remittances. Increased deportations further reduced remittances. These events increased constraints on food access and coping capacity. Major flooding from tropical storms Agatha and Matthew caused significant crop losses in the northern and central zones of the country.
2012	Coffee rust reduced coffee production and, as a result, coffee harvest labor demand. In addition, international coffee prices fell significantly, reducing producer profit margins to near the cost of production.

**GARIFUNA LITTORAL AND BAY ISLANDS TOURISM (ZONE 1)**

<b>Main productive assets</b>	
Poor households	Better-off households
<0.2 ha private land <5 chickens Wood canoe Fishing nets, line, hooks Bicycle Hand tools	>5 ha private land Motorboat Vehicle
<b>Household size</b>	
Poor households	Better-off households
5-7 members	3-4 members
<b>Main foods consumed and sources</b>	
Poor households	Better-off households
Rice (MP)	Rice (MP)
Cassava (OP)	Cassava (OP)
Plantain (OP)	Plantain (OP)
Fish (G)	Fish (G) Meat and dairy (MP)
<b>Main income sources</b>	
Poor households	Better-off households
Petty trade in fish, cassava, coconut Handicrafts Artisan fishing	Trade Formal labor
<b>Main markets</b>	
San Pedro Sula, La Ceiba	
<b>Main hazards, timing, and frequency</b>	
High surf	July to November
Hurricanes	October to November
<b>Response strategies of poor households</b>	
Migration within and outside the country	

The Garifuna Littoral and Bay Islands Tourism Zone is a lowland coastal area located along the Caribbean Sea in the departments of Cortes, Atlantida, Colón, and Gracias a Dios. It also includes the three bay islands and a network of islets and cays located to the North.

The vegetation in the zone consists of coconut palms, mangroves, and Cohune palm. In the Bay Islands there are also pine and hardwoods, sea grass, and coral reefs. The zone is relatively wealthy due to its seafood and fish industry.

The coastal soils are sandy, limiting the variety of plants. The average annual rainfall in Atlantida and Gracias a Dios Departments ranges from 2,600 to 3,200 mm per year. In the departments of Cortes, the Bay Islands, and Colon the average rainfall is between 2,100 to 2,500 mm per year. There are two distinct seasons: the rainy season from June to January and summer, which begins in February and ends in May. The minimum average temperature is 22 to 26° C, and the maximum is 30 to 36° C. The population density is 150 inhabitants per km<sup>2</sup>.

Livelihoods revolve around local fishing, formal and informal trade, and the sale of labor related to tourism and trade activities. Within the zone, the Garifuna fall mainly among the poor and middle-income households, whereas households of the Bay Islands tend to be better off.

The Garifuna communities practice communal agriculture for staple foods, primarily cassava. Family allocation is according to their needs and sowing capacity. Middle income and wealthy households throughout the zone may own small, private plots as well.

The poorest population is engaged in artisan fishing, using canoes and fishing nets (seine) that are left in the sea for certain periods of time and then removed to take out the fish, which is traded locally throughout the year.

Some of the middle wealth group are employed in the tourism industry and have access to formal sector employment. They are also engaged in small-scale trade, such as handicraft sales and general stores. The better-off group is constituted by traders, owners of shops, supermarkets, and restaurants. They also work in the tourism industry, primarily in hotel management. Commercial fishing takes place from March to August and is an economic activity for the better-off group. They also provide employment to poor households during this time.

The main hazards to this zone's livelihoods are hurricanes that cause high surf and flooding, resulting in reduced fishing opportunities, crop losses, and declines in tourism. Civil insecurity problems are also a hazard to the zone, presently causing a decline in tourism which is the economic engine of the zone.

*Zone 1: Seasonal calendar*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Seasons</b>												
Rainy season												
Dry season												
Lean season												
<b>Crops</b>												
Cassava												
Plantain												
<b>Other</b>												
Fishing												
Tourism	peak			peak								peak
Peak staple food prices												
<b>Hazards</b>												
Flooding												
High surf												
<b>Legend</b>												

*Zone 1: Food access calendar for poor households*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Staple Foods</b>												
Rice												
Fish												
Cassava												
Plantain												
<b>Income</b>												
Tourism												
Artisanal fishing												
Informal trade												
Industrial fishing												
<b>Expenditures</b>												
Staple food												
Education												
Clothing												
<b>Legend</b>												

**ATLANTIC LITTORAL PALM OIL PRODUCTION (ZONE 2)**

<b>Main productive assets</b>	
Poor households	Better-off households
<1 ha land	>3.0 ha land
<5 chickens	>10 chickens
Bicycle	≥10 cattle
Hand tools	Irrigation system
<b>Household size</b>	
Poor households	Better-off households
5-6 members	3-4 members
<b>Main foods consumed and sources</b>	
Poor households	Better-off households
Maize (OP, MP)	Maize (OP, MP)
Beans (OP, MP)	Beans (OP, MP)
Rice (MP)	Rice (MP)
Eggs (MP)	Eggs (MP)
	Meat/dairy (MP)
<b>Main income sources</b>	
Poor households	Better-off households
Unskilled labor	Trade in agricultural commodities
	Livestock sales
	Formal labor
<b>Main source markets</b>	
San Pedro Sula, La Ceiba	
<b>Main hazards, timing, and frequency</b>	
Flooding	January, September to November
<b>Response strategies of poor households</b>	
Harvest palm kernels early	

As its name suggests, the Atlantic Littoral Palm Oil Production Zone is a zone with large tracts of land devoted to the cultivation of African palm trees, approximately 150,000 hectares.

The topography of the zone is flat, mostly between 50-200 masl. It has natural tributaries, such as Ulua, Aguan, Guaimon, Perla, and Lean. Its vegetation is characterized by grazing lands for livestock and by the cultivation of oil-producing plants, such as the oil palm tree and Cohune palm. Other natural resources are fruit trees, ornamental plants, minerals, and water resources. Soils are fertile, suitable for the production of various crops, and of sandy clay loam, with a high percentage of organic matter. Average annual rainfall, which falls primarily between May and January, is between 2,000 to 3,600 mm. The temperature is 25-35°C throughout the year. The average population density is 150 inhabitants per km<sup>2</sup>.

The zone offers competitive advantages for exports as it is close to the main ports and national and international airports, as well as for its agro-climatology particularly suited to African palm cultivation. Land ownership is inequitable, with small producers having areas averaging 0.5 to 2.0 ha per producer and large landowners holding huge tracts of land for oil palm tree cultivation. It is important to highlight that the palm oil production system for the large producers or better-off households is characterized by intensive production, carried out by local and family labor and is technically advanced; these producers are also members of cooperatives. Palm oil production by middle-income households, who may also belong to producer cooperatives, is characterized by low-technology systems with little investment in inputs.

Employment in the oil palm industry for planting, weeding, harvesting, and palm-oil processing is the predominant source of income for poor households. However, poor households also work as day laborers in sugarcane cultivation and in the production of subsistence basic grains. The better-off in the zone are dedicated to palm production at a larger scale or animal husbandry (both milk and meat). Most households produce basic grains for household consumption.

It is important to note that the economy of Sonaguera Municipality is relatively more diverse than in other parts of the zone, as it includes fruit production (citrus and bananas) and livestock (milk and meat), as well as sugarcane and fruit trees to a smaller extent.

Locals express concern that the expansion of African palm tree cultivation has resulted in a decrease in the indigenous flora and fauna and an over-reliance in the economy on international palm oil prices.

*Zone 2: Seasonal calendar*

Seasons	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainy season	Blue				Blue							
Dry season		Gold	Gold	Gold								
Lean season						Red	Red					
<b>Crops</b>												
Maize				Light Green	Light Green	Light Green	Light Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green
African palm tree	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green
Sugarcane	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Light Green	Light Green	Light Green	Light Green	Light Green	Light Green
Livestock sales	Light Blue	Light Blue						Light Blue				
<b>Hazards</b>												
Flooding	Light Blue								Light Blue	Light Blue	Light Blue	Light Blue
<b>Legend</b>		Land preparation			Sowing		Weeding		Harvest			

*Zone 2: Food access calendar for poor households*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Staple Foods</b>												
Maize	Green	Green	Red	Red	Red	Red	Red	Red	Green	Green	Green	Green
Beans	Green	Green	Red	Red	Red	Red	Red	Red	Green	Green	Green	Green
Rice	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Eggs	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
<b>Income</b>												
Agricultural labor (palm, staple foods)	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Sugarcane day labor	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Remittances	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
<b>Expenditures</b>												
Staple food	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Health	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Education	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Clothing	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
<b>Legend</b>	Own production	Market purchase	In-kind	Gathering								

**LABOR INCOME FROM MAQUILAS, BANANA, AND SUGARCANE (ZONE 3)**

<b>Main productive assets</b>	
Poor households	Better-off households
Bicycle and some motorcycle	Own house, vehicle
<b>Household size</b>	
Poor households	Better-off households
4-6 members	3-5 members
<b>Main foods consumed and sources</b>	
Poor households	Better-off households
Tortilla (MP)	Tortilla (MP)
Beans (MP)	Beans (MP)
Rice (MP)	Rice (MP)
Banana (G)	Dairy products (MP) Meat (MP)
<b>Main income sources</b>	
Poor households	Better-off households
Unskilled labor (agricultural, <i>maquilas</i> )	Trade Wage labor (formal) Livestock sales
<b>Main markets</b>	
San Pedro Sula, El Progreso	
<b>Main hazards, timing, and frequency</b>	
Flooding	September to November
<b>Response strategies of poor households</b>	
Migration within the zone in search of jobs	

This zone is located in northwestern Honduras. Its topography consists of fertile valleys dedicated to large-scale banana and sugarcane plantations. The highland areas have rangelands, coffee, and basic grains production. The climate is warm and the annual temperature ranges from 23°C to 28°C. The summer, or dry season, begins in February and ends in mid-May; the rainy season lasts from June to December. Average annual precipitation is 1,200 mm, and most of this rain is registered between September and November. The second largest city in the country, San Pedro Sula, is located in this zone.

The main economic driver of the zone is not subsistence agriculture, but industry, including agro-industry and large textile *maquilas* (factories). Livelihoods in this zone depend mainly on the sale of labor in bananas or sugarcane production or the textile industry.

Educational levels and the number of economically active people is a socio-economic characteristic between wealth groups. The poorest wealth groups do not have access to land; they live mainly in urban and peri-urban areas. They are the labor force for the agribusiness sector, as well as the textile industry. Middle-income households also depend on the sale of labor, but may have more skilled jobs due to higher educational levels (completed high school, technical education). Better-off households may own tracts of land outside of the agro-industrial complex for ranching or for rental or, occasionally, to grow maize and red beans.

The zone is strongly dedicated to agribusiness, and it does not produce enough staple food for the population. As a result, food purchase is virtually the only source of food for all groups. The road network is in good condition, facilitating trade with the other zones. The most important market in the zone is located in San Pedro Sula, considered the main wholesale center in this region and the second nationwide.

Though the absolute demand for unskilled labor in the zone is relatively high compared with other zones, new people arrive in search of employment opportunities every day. This, or shrinkage in labor demand, may result in unemployment. In addition, as the population density increases, so does the demand for basic services.

The main hazards are floods, affecting agribusiness and, thus, labor demand, causing the population to migrate within or out of the zone, in search of job opportunities. Though violent crime against individuals is not necessarily a broader food security concern, the increasing extortion may have a broader impact on food security as businesses, even factories, occasionally close for days or even permanently as a result.

*Zone 3: Seasonal calendar*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Seasons</b>												
Rainy season	Blue					Blue						
Dry season		Brown	Brown	Brown	Brown							
Lean season							Red					
<b>Crops</b>												
Maize	Dark Green			Light Green	Light Green	Light Green	Light Green	Dark Green	Light Green	Light Green		Dark Green
Beans	Dark Green			Light Green	Light Green	Light Green	Light Green	Dark Green	Light Green	Light Green		Dark Green
Banana	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green
Sugarcane					Light Green							
<b>Hazards</b>												
Peak staple food prices						Light Blue	Light Blue	Light Blue				
Flooding	Light Blue								Light Blue	Light Blue	Light Blue	
<b>Legend</b>		Land preparation			Sowing		Weeding		Harvest			

*Zone 3: Food access calendar for poor households*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Seasons</b>												
Rainy season	Blue					Blue						
Dry season		Brown	Brown	Brown	Brown							
Lean season							Red					
<b>Crops</b>												
Maize	Dark Green			Light Green	Light Green	Light Green	Light Green	Dark Green	Light Green	Light Green		Dark Green
Beans	Dark Green			Light Green	Light Green	Light Green	Light Green	Dark Green	Light Green	Light Green		Dark Green
Banana	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green
Sugarcane					Light Green							
<b>Hazards</b>												
Peak staple food prices						Light Blue	Light Blue	Light Blue				
Flooding	Light Blue								Light Blue	Light Blue	Light Blue	
<b>Legend</b>		Land preparation			Sowing		Weeding		Harvest			

**MOSQUITIA HUNTING AND FISHING (ZONE 4)**

<b>Main productive assets</b>	
Poor households	Better-off households
< 1 ha communal land <5 ducks, chickens, pigs Hand tools (machete, file, hoe, spiked stick, pickaxe, knapsack sprayer, rope) Rifle or harpoon Canoe	Private land, home (≥ 5 ha) Pigs Cattle (up to 10) or Sawmill or Scuba equipment and motor boat
<b>Household size</b>	
Poor households	Better-off households
5-8 members	3-4 members
<b>Main foods consumed and sources</b>	
Poor households	Better-off households
Rice (MP, OP) Cassava (OP) Plantain (OP) Fish (G)	Rice (MP, OP) Cassava (OP) Plantain (OP) Fish (G) Meat, dairy (OP, MP)
<b>Main income sources</b>	
Poor households	Better-off households
Labor (diving, other) Artisanal fishing Hunting	Trade and services Skilled labor Larger-scale fishing Timber sales
<b>Main markets</b>	
San Pedro Sula, La Ceiba, Puerto Lempira	
<b>Main hazards, timing, and frequency</b>	
Flooding	January and August to October
Irregular <i>canícula</i>	July to August
High fuel prices	Year-round
<b>Response strategies of poor households</b>	
Migration within and outside the country	

This zone is adjacent to the Rio Platano Biosphere Reserve, in the northeast region of the country. It is located on the Atlantic coastline, which borders Nicaragua, and is part of the tropical rainforest of the Mosquitia. The level of rainfall is high, about 3,000 mm per year, with temperatures ranging from 22°C to 30°C. Vegetation and wildlife is abundant.

Transportation within the zone is primarily via waterways. Communication between communities is through rain-fed rivers (i.e., El Patuca, El Coco, and Segovia), and by sea. There are daily boats traveling from La Ceiba and Trujillo; air access is also available. It is a zone with low population density, where Miskito indigenous communities predominate.

Poor households are the majority of the population of this zone. They produce crops for household consumption (rice, beans, cassava, and eddo), and artisanal fishing and hunting. They also sell their labor in the timber industry or are employed in industrial fishing or as divers according to the season.

Middle households are engaged in basic grains production and cattle production. They also sell their labor in the timber industry or are employed in the service sector as teachers, policemen, or informal traders. In the case of better-off households, some are engaged in river transportation, others in mechanized fishing and marketing. They also have productive assets, such as diving equipment and motor boats or cows; others may have sawmills. They will hire labor from the poor and middle-income groups. They may also have a few livestock (pigs, cattle).

Most people use municipal markets, but the main source markets are Puerto Lempira, La Ceiba, and San Pedro Sula. Though the poor may rely on own production for yucca and plantain, they also depend on markets nearly year-round either for rice or beans, particularly between May and June.

Flooding is the primary food security hazard as it results in crop losses and restricts fishing. Dry spells, which are most common during the July/August *canícula*, may also reduce harvest yields. High fuel prices are also a concern for the zone as it increases the cost of transportation and, by extension, the cost of basic goods. In response to shocks, poor households are likely to increase labor migration to the coast or abroad to increase access to income for food purchase.

**Zone 4: Seasonal calendar**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
<b>Seasons</b>													
Rainy season	[Blue shading]												
Dry season	[Brown shading]												
Lean season						[Red shading]							
<b>Crops</b>													
Rice						[Light Green shading]							
Beans	[Dark Green shading]			[Light Green shading]				[Dark Green shading]		[Light Green shading]			
Cassava	[Light Green shading]							[Dark Green shading]					
<b>Other</b>													
Artisinal fishing	[Light Blue shading]												
Hunting	[Light Blue shading]								[Light Blue shading]				
Diving or industrial fishing	[Light Blue shading]												
Timber extraction	[Light Blue shading]				[Light Blue shading]								
Livestock sales	[Light Blue shading]												
<b>Hazards</b>													
Flooding	[Light Blue shading]												
Drought or irregular <i>canícula</i>						[Light Blue shading]							
Peak prevalence of malaria and dengue	[Light Blue shading]												
<b>Legend</b>	[Light Green] Land preparation				[Light Green] Sowing		[Dark Green] Weeding		[Dark Green] Harvest				

**Zone 4: Food access calendar for poor households**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
<b>Staple foods</b>													
Fish	[Orange shading]												
Cassava	[Light Green shading]												
Beans	[Light Green shading]			[Red shading]		[Red shading]		[Light Green shading]		[Red shading]		[Red shading]	
Rice	[Red shading]			[Red shading]		[Red shading]		[Red shading]		[Light Green shading]		[Red shading]	
<b>Income</b>													
Labor in timber extraction	[Light Blue shading]												
Labor in industrial fishing	[Light Blue shading]												
<b>Expenditures</b>													
Staple food	[Light Blue shading]												
Education	[Light Blue shading]												
Clothing												[Light Blue shading]	
<b>Legend</b>	[Light Green] Own production			[Red] Market purchase			[Purple] In-kind		[Orange] Gathering				

**MOUNTAINOUS COFFEE (ZONE 5)**

<b>Main Productive Assets</b>	
Poor households	Better-off households
<0.5 ha land 5-10 chickens 1 pig Hand tools (hoe, pickaxe, shovel, machete)	≥20 ha land, including 10 ha ≤ of coffee ≥5 cattle, 3-10 pigs Automobile Chainsaws Coffee huller or pulper
<b>Size of Household</b>	
Poor households	Better-off households
6-7 members	3-5 members
<b>Main Food and Sources</b>	
Poor households	Better-off households
Maize (OP, MP) Beans (OP, MP) Eggs (MP)	Maize (OP, MP) Beans (OP, MP) Eggs (MP) Meat, dairy (MP)
<b>Main Sources of Income</b>	
Poor households	Better-off households
Sale of labor	Sale of coffee
Sale of basic grains	Medium-scale livestock production
Informal trade	Trade
<b>Main markets</b>	
Municipal markets	
<b>Main Hazards, Period and Frequency</b>	
Coffee diseases/pests	May to March
Low coffee prices	November to February
<b>Response strategies of poor households</b>	
Migration to other zones where they can get better wages	

The Mountainous Coffee zone extends along the center of the country from the West eastward. Coffee-producing lands are located in catchment areas and river basins at altitudes between 400 to 1,500 masl. Native vegetation is predominantly deciduous forests, though some areas have conifer forests for timber. Waterways abound.

The average rainfall is 1,800 mm per year, with temperatures ranging between 15°C to 22°C. There are two seasons, the dry season beginning in March and ending in May. The rainy season is longer, starting in June and ending in February. There is also an additional dry spell in July and August. The population density is 75 inhabitants per km<sup>2</sup>.

Although vegetable production is important in Comayagua and some municipalities of La Paz, livelihoods for all wealth groups in the zone are related to coffee production. The main coffee-producing areas are in the departments of El Paraiso, Santa Barbara, Olancho (only the municipality of Campamento), Copan, Comayagua, La Paz, Lempira, Intibuca, Francisco Morazan and Ocotepeque. The main coffee markets include: Danli, El Paraíso, Comayagua, San Pedro Sula, Santa Barbara, Lempira and Copan. There are approximately 100,000 producers, and the main determinants of wealth include the size of the area under coffee and access to capital for improved technology in coffee production and processing. Small producers own less than 5 ha of coffee plantation and tend to sell their coffee through intermediaries either as cherries for processing or as dry, green beans; medium and large producers may sell dry, green coffee beans through cooperatives or, in some cases, directly with exporters.

As poor households do not have a coffee plantation to speak of, they earn their living primarily from selling their labor to coffee farms (particularly between October and February); they also produce small quantities of basic grains. Small producers of coffee with less than five ha under coffee are generally middle-income households. They lack access to cash and credit for mechanization and maintenance. In addition, the technical management of their plantations tends to be sub-optimal with low-density coffee planting and excessive shade. As a result, their production levels are relatively low. Furthermore, these households tend to be least diversified, depending mainly on coffee sales and coffee labor for income. Therefore, they are particularly vulnerable to low producer prices and production shocks due to coffee rust or other natural disasters. Better-off households have medium and high levels of technology and cultivate coffee plant varieties with higher yield potential.

The main hazards in the zone are erratic rainfall that may negatively affect the development of both coffee and basic grains. Highs or lows in coffee producer prices (which are related to international prices) are another hazard that may be positive or negative but that may have a knock-on effect across the zone. The recent coffee rust disease has caused losses in cultivated areas, reducing the amount of coffee sale income and the number of day laborers hired.

*Zone 5: Seasonal calendar*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
<b>Seasons</b>													
Rainy season	[Blue bar]												
Dry season	[Tan bar]												
Lean season	[Red bar]												
<b>Crops</b>													
Coffee	[Dark green bar]												
Primera maize (main season)	[Light green bar]												
Postrera maize	[Light green bar]												
Irrigated vegetable gardens	[Dark green bar]												
<b>Hazards</b>													
Low labor supply for coffee picking	[Light blue bar]												
Coffee diseases, pests	[Light blue bar]												
Low producer prices for coffee	[Light blue bar]												
<b>Legend</b>	Land preparation				Sowing		Weeding		Harvest				

*Zone 5: Food access calendar for poor households*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Staple Foods</b>												
Maize	[Green bar]											
Beans	[Red bar]											
Coffee	[Light green bar]											
<b>Income</b>												
Day labor - coffee maintenance	[Light blue bar]											
Day labor - coffee picking	[Light blue bar]											
<b>Expenditures</b>												
Staple food	[Light blue bar]											
Agricultural inputs	[Light blue bar]											
Education	[Light blue bar]											
Clothing	[Light blue bar]											
<b>Legend</b>	Own production			Market purchase			In-kind		Gathering			

**GULF OF FONSECA FISHING AND SALT (ZONE 6)**

<b>Main productive assets</b>	
Poor households	Better-off households
<0.2 ha land 5 to 10 chickens Canoe Cast/trawl nets, lines	>3.5 ha land 25-30 cattle 2 horses 1-4 motor boats Coolers
<b>Household size</b>	
Poor households	Better-off households
5-7 members	3-6 members
<b>Main foods consumed and sources</b>	
Poor households	Better-off households
Maize (MP) Beans (MP) Fish (MP)	Maize (OP, MP) Beans (OP, MP) Eggs (MP) Fish (G) Meat, dairy (MP)
<b>Main sources of income</b>	
Poor households	Better-off households
Seafood sales Fishing labor sales	Trade, particularly fish and seafood
Firewood sales	Livestock sales
<b>Main food source markets</b>	
Monjaras, Choluteca, San Lorenzo, and Nacaome	
<b>Main hazards, timing, and frequency</b>	
High Surf	March or April
Flooding	September to October (more common with El Niño)
Red Tide	April and May
<b>Response strategies of poor households</b>	
Collection of other products, such as mollusks	
Sale of firewood	

The Gulf of Fonseca Fishing and Salt zone is the area of low, coastal plains (<400 masl) and volcanic islands located along the southern coast of the Pacific Ocean. There is a wide variety of fauna species such as birds, reptiles, crustaceans, and bivalves. This zone is the delta for five major rivers, including: the Guascoran, the Nacome, the Choluteca, the Sampile, and the Negro.

The average annual precipitation ranges from 1,800 to 2,200 mm. There are two climatic seasons in this zone: the dry season, from November to April, and the rainy season from May to October, with a decrease in rainfall between July and August, known as the *canícula*. The annual average maximum temperature is 33°C; generally April is the month with the highest temperatures recorded and October with the lowest. The population density is 38 inhabitants per km<sup>2</sup>, with higher population density in urban areas of Cedeno, Guapinol, Punta Raton, Costa de Los Amates, San Lorenzo, Los Prados and Amapala.

Fishing and shellfish harvesting (croaker, various bass, red snapper, sea slug, moray, grouper, shellfish, crabs, and shrimp) are the main economic drivers of the zone. The zone also produces sea salt, which generates income and employment, mainly during the summer.

Poor households are primarily involved in artisan fishing of bivalves, crustaceans and fish. They rent boats from the better-off, splitting the profits from the sale of the fish caught in equal parts. In June-July and October-November, when labor demand is greatest, they sell their labor to shrimp fisheries. They also sell their labor in the melon industry in zone (November to May). Some poor households also produce salt during the dry season from December to April. Some households also work in local tourism in April or March, during Holy Week (Easter) and in December. There is, therefore, a different job for every season, making the lean season the time

when income is lowest and retail food prices tend to be highest (July-September).

Middle-income households are also engaged in fishing, and they may own a motor boat to facilitate the activity. Some sell their skills as motorcyclists or machine operators to the better-off. The better-off in the zone depend on the fish trade and/or the rental of their boats; some depend on cattle (milk and meat sales).

Almost all fish and seafood are sold to an intermediary, who transfers the products to national markets, such as Choluteca, San Lorenzo, Tegucigalpa, San Pedro, Siguatepeque and La Ceiba. Some Salvadoran and Mexican intermediaries supply themselves at the various collection centers. The remainder is left to supply local trade and tourism. Food for basic consumption is purchased in local general stores. Basic grains and other products are purchased through wholesalers at the municipal markets of Monjaras, Choluteca, San Lorenzo, and Nacaome.

High seas (waves over 6 feet) limit fishing activities and income earning potential. Floods, usually due to hurricanes, risk damage to shrimp fisheries and may lower labor demand or its duration for the shrimp harvests. Finally, red tides can reduce demand for shellfish in particular due to the risk of illness.



**SUBSISTENCE GRAINS AND REMITTANCES (ZONE 7)**

<b>Main productive assets</b>	
Poor households	Better-off households
<0.2 ha rented land	> 1 ha of owned land
Hand tools (hoe, pickaxe, shovel, machete)	Hand tools Spray pump
<b>Household size</b>	
Poor households	Better-off households
2 - 12 members	3 - 5 members
<b>Main foods consumed and sources</b>	
Poor households	Better-off households
Maize (OP, MP)	Maize (OP, MP)
Beans (OP, MP)	Eggs (MP)
	Meat, dairy (MP)
<b>Main income sources</b>	
Poor households	Better-off households
Agricultural day labor	Trade
<b>Main source markets for food</b>	
Marcala	
<b>Main hazards, timing, and frequency</b>	
Drought	May to October (1/5 years)
Irregular <i>canícula</i>	July to August
<b>Response strategies of poor households</b>	
Migration to other zones in search of work	

The Subsistence Basic Grains and Remittances Livelihoods Zone is concentrated mainly in southwestern Honduras and is part of the dry corridor that runs from Northern Nicaragua to Guatemala.

The soils are shallow, porous, and poor in quality. Average rainfall is between 800 to 1,200 mm per year, primarily between May and October (drier *canícula* in July/August) with more than six dry months between November and April. The temperature ranges from 18°C to 30°C. Vegetation includes shrubs with deciduous, grassy savanna and pockets of diverse deciduous forests with compound leaves (micro foliate). The population density in the zone is 70 inhabitants per km<sup>2</sup>.

Livelihoods are linked to the subsistence production of maize, beans, and sorghum, as well as small-scale small livestock production. Most households cultivate rain-fed crops using manual labor; only the middle and better-off households use inputs. Additional income is derived from migration and remittances. Access to remittances, particularly from North America, as opposed to other countries in Central America, differentiates wealth groups in the zone, as middle and better-off households are the ones who mainly benefit from this type of income.

Poor households complement the three months of consumption from own production with food purchases using income earned almost exclusively from agricultural wage labor. Within the zone, they primarily support maize, red bean, and sorghum production, but they also migrate to other zones harvesting coffee and/or sugarcane. The middle-income households' income is based on the sale of their agricultural production and remittances from relatives. The better-off have relatively more diversified incomes; in addition to crop sales and receiving remittances from the U.S., they are more likely to have a formal business.

This zone is considered both one of poorest and one of the most vulnerable to food insecurity because, while the livelihoods rely heavily on agriculture and have few options to cope with shocks, the area is prone to frequent drought. Macro-economic change in the U.S. or changes in U.S. immigration policy may also have a significant impact on income in the zone directly and indirectly on local labor demand for poor households.

**Zone 7: Seasonal calendar**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Seasons</b>												
Rainy season												
Dry season												
Lean season												
<b>Crops</b>												
Native short-cycle maize (Choluteca, Lempira, and southern Intibuca)												
Native long-cycle maize (Opalaca, Yarula, and Santa Elena)												
Beans												
Sorghum												
<b>Other</b>												
Remittances												peak
<b>Hazards</b>												
Droughts, dry spells (peak is <i>canícula</i> )												
Winds												
<b>Legend</b>												

**Zone 7: Food access calendar for poor households**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Staple food</b>												
Maize												
Beans												
<b>Income</b>												
Local agricultural labor												
Agricultural labor migration												
<b>Expenditures</b>												
Staple food												
Education												
Health												
Clothing												
<b>Legend</b>												

**LABOR INCOME FROM MELONS AND SHRIMP (ZONE 8)**

<b>Main productive assets</b>	
Poor households	Better-off households
< 1.0 ha land 5 to 10 chickens Hand tools (hoe, pickaxe, shovel, machete) Wheelbarrow	> 3.5 ha land 2 horses > 15 heads of livestock
<b>Household size</b>	
Poor households	Better-off households
5-8 members	3-6 members
<b>Main foods consumed and sources</b>	
Poor households	Better-off households
Maize (MP) Beans (MP) Fish (MP)	Maize (OP, MP) Beans (OP, MP) Eggs (MP) Fish (G) Meat, dairy (OP, MP)
<b>Main income sources</b>	
Poor households	Better-off households
Unskilled labor sales	Crop sales
	Livestock, meat, dairy Trade
<b>Main markets</b>	
Choluteca, San Lorenzo, Nacaome, and Monjaras	
<b>Main hazards, timing, and frequency</b>	
Drought	May-October (1/5 years)
Irregularity in <i>canícula</i> (extension or delay)	July and August
Flooding	September to October, particularly during El Niño
<b>Response strategies of poor households</b>	
Migration to other zones in search of employment	
Sale of firewood	

This agriculture-dependent zone in southern Honduras borders both Nicaragua and El Salvador. It's separated from the Pacific Ocean by Zone 6. Topography and soil quality varies. There are flat lands and hills, and soil is of rock, sand, clay and volcanic origin. The average annual rainfall is in the range of 1,800 mm, which falls mainly between May and October. There is a decrease in cumulative rainfall (*canícula*) between July and August. Annual average maximum temperatures range from 34°C to 38°C and the average minimum temperature is 24°C. These conditions support grasslands, shrubs, and mixed deciduous and pine forests. Population density in this zone is 64 to 100 inhabitants per km<sup>2</sup>; however, in the city of Choluteca, population density ranges between 100 and 163 people per km<sup>2</sup>.

This zone is very similar to the Gulf of Fonseca Fishing and Salt zone (6) to the South in terms of its unusually high reliance on food purchase and, at least among the poor, on labor for income. However, agriculture, including a small amount of subsistence maize and bean production, replaces fishing as the primary livelihood activity in the zone.

Poor households produce very little; instead, they purchase food based on income earned from the sale of labor. During the dry season, melon and watermelon (for export) and sugarcane are the most important sources of labor demand, but during the wet season, shrimping takes precedence. A small part of the population in the northeast of the zone is engaged in the sale of labor for mining (gold) and for processing of cashew nuts. The average daily wage for labor is about 120-150 Lempiras.

Middle-income households depend on the production and sale of basic grains; they also sell their labor as machine operators, motorcycle drivers, etc. Better-off households depend on the sale of their agricultural production (melons, watermelons) or of livestock.

Food for basic consumption is supplied locally by the municipal markets of Monjaras, Choluteca, San Lorenzo and Nacaome. Large-scale trade is carried out through intermediaries in Tegucigalpa, San Pedro, Siguatepeque, and La Ceiba.

Droughts, irregularities in the *canícula* and floods (usually associated with hurricanes or El Niño) are the main hazards in the zone due to their significant impact on crops, shrimp farms, and agricultural labor demand. Poor households tend to cope by migrating to other zones in search of employment opportunities and/or by intensifying the collection and sale of firewood.

Zone 8: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Seasons</b>												
Rainy season												
Dry season												
Lean season												
<b>Crops</b>												
Primera maize												
Primera beans												
Postrera maize												
Postrera beans												
Sorghum												
Melon												
Watermelon												
<b>Other</b>												
Milk production												
<b>Hazards</b>												
Droughts, dry spells (peak is <i>canícula</i> )												
Flooding (particularly during El Niño)												
<b>Legend</b>												

Zone 8: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Staple foods</b>												
Maize												
Beans												
<b>Income</b>												
Labor in melon plantations												
Labor in sugar cane plantations												
Labor in shrimp farms												
<b>Expenditures</b>												
Staple food												
Health												
Education												
Clothing												
<b>Legend</b>												

**GRAINS AND LIVESTOCK (ZONE 9)**

<b>Main productive assets</b>	
Poor households	Better-off households
<3.5 ha land Hand tools (hoe, file, spiked stick, machete) Knapsack sprayer 5-10 poultry	≥14 ha land >10 heads of cattle Tractor, Irrigation, drainage Heavy machinery Automobile
<b>Household size</b>	
Poor households	Better-off households
5-6 members	4-5 members
<b>Main food consumed and sources</b>	
Poor households	Better-off households
Maize (OP, MP) Beans (OP, MP)	Maize (OP) Beans (OP) Dairy, meat (MP)
<b>Main income sources</b>	
Poor households	Better-off households
Agricultural day labor	Crop sales
Crop sales	Livestock sales Meat or dairy sales
	Trade
<b>Main markets</b>	
Tegucigalpa and San Pedro Sula (wholesale) Catacamas and Juticalpa (intermediate)	
<b>Main hazards, timing and frequency</b>	
Drought	May to October (1/5 years)
<i>Canícula</i> irregularity (extension or delay)	July/August
<b>Response strategies of poor households</b>	
Migration to Tegucigalpa, San Pedro Sula in search of work Reduce input purchases/application rates	

The Grains and Livestock Zone in the center-east is characterized by surplus production of maize and red beans and livestock husbandry with timber and mining (iron oxide) in parts of the center.

The zone consists of broad valleys in the central plains with smaller plains scattered throughout the zone, flanked by mountainous areas. The altitude is 400 to 2,000 masl. The soils are clay loam and silty, clay loam of sedimentary origin, with a pH of 7.0-8.0 and moderate fertility. The average rainfall ranges between 1,300 and 1,700 mm per year, between May and January, with peak rains between June and December. Average temperature is between 20 and 30°C. These conditions favor coniferous forests and grasslands in the valleys, with pockets of deciduous forest. The population density ranges from 50 to 85 inhabitants per km<sup>2</sup>. Valle and Yoro are the zones with the highest density.

Livelihoods within the zone emphasize the production and sale of rain-fed maize and red beans. Tomato, cucumber, onion, and chili are cultivated on a smaller scale. Along steep hillsides, producers use manual labor. Producers located in flatter areas use machinery for soil preparation and sow with oxen. In the valleys, mechanization prevails.

Extensive livestock production for meat is widespread, but dairy production predominates in the Guyape Valley with peak milking time between June and January. Intensive, mechanized livestock production for dairy is practiced on a small scale.

Poor households in this zone distinguish themselves as accessing up to six months of household food consumption from own production. This is about double the own-production consumed by poor households in other zones. Poor households within the zone also gain a relatively greater proportion of income from crop sales than poor households in other zones. Agricultural labor, however,

remains a major source of income among the poor. Middle-income households rely more heavily on the consumption and sale of own-produced maize and beans than do the poor. They also have a relatively more diversified livelihood through formal trade, and some households have members with salaries. The better-off are engaged in large-scale production and trade of basic grains, as well as livestock production.

The main wholesale markets are Tegucigalpa and San Pedro Sula. Intermediary markets include Catacamas, Juticalpa, Danli, El Paraiso, Yoro, Talanga, Nacaome, and Choluteca. The distance from rural villages to these markets ranges from 30 to 60 km. Low producer prices during the harvest may be a hazard for poor households, particularly when household storage is a constraint.

Zone 9: Seasonal calendar

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Seasons</b>												
Rainy season												
Dry season												
Lean season												
<b>Crops</b>												
Maize												
Beans												
<b>Other</b>												
Dairy production peak												
<b>Hazards</b>												
Droughts, dry spells (peak is <i>canicula</i> )												
<b>Legend</b>												

Zone 9: Food access calendar for poor households

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Staple food</b>												
Maize												
Beans												
<b>Income</b>												
Crop sales												
Labor migration for coffee harvest												
Labor migration for melon harvest												
Labor migration for sugarcane harvest												
<b>Expenditures</b>												
Staple food												
Health												
Education												
Clothing												
<b>Legend</b>												

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