Adapting to An Urban World

Urban Case Study:
Port au Prince

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Adapting to an Urban World
Port au Prince Case Study

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1. Introduction

The Port au Prince case study is part of the *Adapting to an Urban World* project. The *Adapting* project was developed to address an identified gap in urban assessment tools. The aim of the project is to develop food security and vulnerability assessment guidance and tools specifically designed for use in urban contexts. In order to achieve this objective, the project will examine a number of different urban contexts with food insecure populations.

The first case study/pilot assessment was conducted in Harare, Zimbabwe in November 2014; it included qualitative primary data collection and field-testing of newly developed tools. The second case study focused on Syrian refugees in Amman and Beirut, focusing on methodological and operational issues identified by humanitarian actors. The third was a statistically representative survey led by WFP in three cities (Antananarivo, Tulear, and Tamatave) of Madasgascar. The fourth was a pilot assessment, testing methods and tools, in Mogadishu, Somalia. The Port au Prince pilot assessment is therefore the fifth case study to contribute to the project learning.

The population in Haiti is rapidly urbanizing - in 1990, 29% of the population lived in urban areas. In 2014, that figure had risen to 57%, and it is projected to reach 76% by 2050. This is one of the highest rates of change in the world.[1]

The catastrophic earthquake in 2010 killed an estimated 220,000 people; these enormous losses were largely due to poor housing construction, compounded by high population density. Since the earthquake, Haiti has received almost $6 billion in official aid.[2] The large majority of this money has been funnelled to the thousands of NGOs which are operational in Haiti.

Significant assistance and recovery programming is ongoing within Haiti, with much work focused in Port au Prince. To better understand assistance needs and seasonal fluctuations, the Coordination Nationale de la Securité Alimentaire and the World Food Programme will design an urban food security monitoring system (*observatoire urbain*) in Port au Prince. However, with limited up-to-date geographic and census data, and many people still displaced (IOM currently estimates almost 65,000 people still displaced in Haiti[3]), assessments and monitoring are particularly challenging. The *Adapting to an Urban World* project seeks to improve understanding of urban food security and economic vulnerability. For these reasons, the project selected Port au Prince for a pilot food security assessment; the results are intended to support selection of indicators for the *observatoire urbain*, contribute lessons learned to the operational aspects of urban assessments in Haiti, and will contribute to improving urban assessment methodology globally.

The specific objectives of the Port au Prince case study are as follows:

- Improve understanding of the factors defining vulnerability (at geographic and household level) within Port au Prince
- Test new methods of sampling in a context with limited census date
- Analyze standard food security indicators (food consumption, income, expenditure, coping, etc) to see if they accurately depict the condition of households in Port au Prince

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[1] United Nations. World Urbanization Prospects: The 2014 Revision. New York, 2014.
[2] Ramachandran, Vijaya, and Julie Walz. "Haiti: Where has all the money gone."*CGD Policy Paper* 4 (2012).
[3] http://haiti.iom.int/camps

- Analyze urban livelihoods
- Identify food security indicators that could potentially contribute to an urban monitoring system in Haiti
- Contribute to overall Adapting to an Urban World project learning
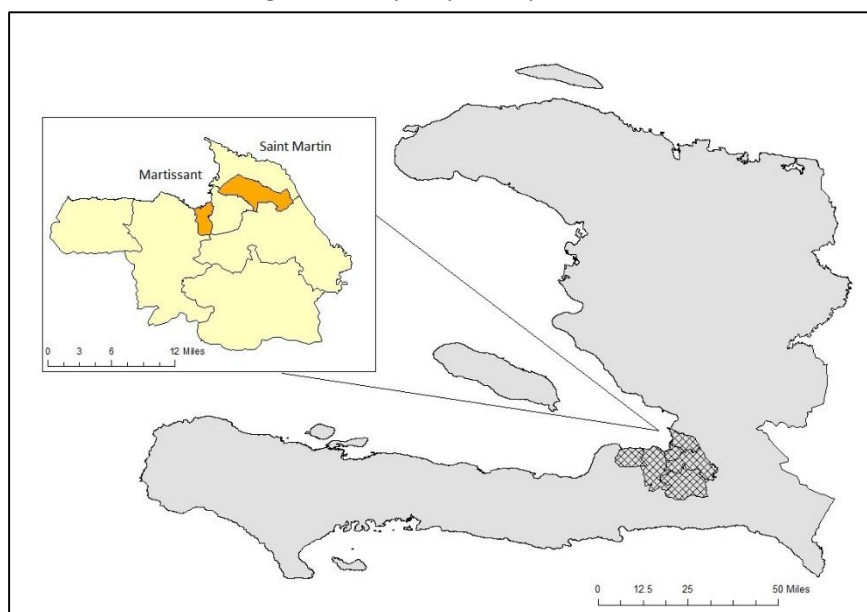
2. Methodology

2.1 Survey Methodology

The Port au Prince assessment included three key methodology steps: a secondary data review, qualitative data collection (focus groups and market interviews), and a household survey. All primary data collection took place in December 2015.

The secondary data review aimed to identify urban food security assessments and studies conducted within Port au Prince within the past five years. The objective was to identify context specific issues linked to food insecurity and economic vulnerability, such as specific expenditure patterns or unique coping strategies, with a focus on assessment methodologies. Understanding existing methodologies and indicators was used to inform the design of the Adapting to an Urban World Port au Prince case study.

The preliminary qualitative data was used to better understand the context, adapt the survey tools, and inform the analysis methodology. This step included 12 focus group discussions of 6-10 participants each, and interviews with 17 street food vendors. Focus group discussions asked about food consumption, livelihoods, assets and coping strategies; this information was used to edit the street food vendor and household questionnaires, ensuring the questions and response options were appropriate and context specific. The street food vendors were interviewed about their business and the composition of the dishes they sell, to better inform the analysis of outside the home foods.

Figure 1: Map of primary data collection locations

The final step of primary data collection was the household survey. Discussions with partners and local stakeholders were held to understand the most vulnerable areas of the city, and define the target areas of the assessment. These discussions focused on specific criteria including housing characteristics, basic infrastructure, and access to public services such as hygiene and sanitation. Due to logistical issues, partner presence and security conditions also informed the selection of neighbourhoods.

Resulting from these discussions, two areas of Port au Prince were selected for primary data collection: Delmas (*section communale* Saint Martin) and Port au Prince (*section communale* Martissant).

Table 1: Locations of primary data collection

Arrondissement	Commune	Section Communale	Quartier
Port au Prince	Delmas	Saint Martin	Place La Paix
			Borozi
			Tamarin Club
	Port au Prince	Martissant	Grande Ravine
			Fort Mercredi

Within these *Sections Communales*, 44 enumeration sections (areas defined by the Haitian Institute of Statistics for survey purposes) were randomly selected. A complete household list was not available, so although team supervisors attempted to make the household selection as random as possible, it was not truly random sampling. The final survey included a sample of 410 households, descriptive of a stratified random selection. The household survey included modules focused on demography, housing, assets, food consumption, livelihoods, expenditure, shocks and coping strategies.

2.2 Management Structure

The assessment was be co-led by the Coordination Nationale de la Sécurité Alimentaire (CNSA) and WFP VAM. It was an inclusive process, leveraging the experience and knowledge of all partners; all steering committee members were encouraged to actively participate, both at global and country office level.

CNSA: The CNSA contributed one staff member (paid by the project budget) to coordinate the assessment in Port au Prince. This person was be responsible for overall coordination at local level – managing the timeline, coordinating partners, ensuring milestones were met, and also contributed to some secondary data review and collecting lessons learned. The CNSA more broadly will ensure the project contributes to the design of the *observatoire urbain*, the urban food security monitoring system to be established in 2016.

WFP/VAM: The VAM unit co-leads the Adapting to an Urban World project, focusing on technical guidance and learning. VAM staff from headquarters will be responsible for ensuring lessons learned from previous case studies are incorporated into this assessment. HQ VAM staff will also be responsible for the qualitative components of the assessment, the final design of the tools, and will lead the data analysis and report writing.

Global Food Security Cluster: The gFSC co-leads the Adapting to an Urban World project, and will be responsible for engaging the steering committee, managing funding, and general oversight.

Adapting to an Urban World Steering Committee: The Steering Committee members are primarily responsible for encouraging engagement of their organisations based in Port au Prince. They will also be responsible for reviewing and providing timely feedback on the assessment terms of reference, and other assessment documents which are circulated.

UN Agency and NGO partners in Port au Prince: Partner organisations are expected to participate in and contribute to the assessment, including technical, financial, human and, logistical contributions. The active participation from all organisations was be critical for the success of the assessment.

3. Limitations

In considering the results of this case study, it is important to note that only 410 households were included. This is not a statistically representative survey; the exercise was used for research purposes, thus conclusions cannot be applied more broadly than the sample itself.

Limited information was available in order to stratify Port au Prince in a systematic way. The areas were selected based on discussions with key stakeholders and other partners on poverty, access to services, livelihood options, and proximity to markets. In addition to this, security issues and partner presence influenced the area selection process. The process was consultative and inclusive, but could be considered subjective.

The data collection was delayed, so some households were interviewed around Christmas time. This timing may influence food consumption patterns, with higher than normal results. Through discussions with enumerators, it is understood that this Christmas period may increase some quantities eaten, but not necessarily quality, and the limited impact should not compromise the validity of the final results.

Finally, the study contributes to an evolving knowledge base about best practices in conducting urban food security and vulnerability assessments. This individual case study, however, does not result in final decisions or guidance about these best practices. Rather, specific lessons will feed into a broader process, eventually resulting in guidance.

4. Secondary Data Review

The case study Terms of Reference included a desk review of urban food security assessments, studies and programmes conducted in Port au Prince within the past five years. Through online searches and soliciting documents/data from partners, a few documents on urban programming best practice/lessons were found, [4] [5] but the search resulted in a very limited number of Port au Prince needs assessments and relevant data.

Despite the limited number of documents, the secondary data review still resulted in some useful findings and lessons from previous experience. The document most frequently referenced is the FEWS NET CNSA Port au Prince Urban baseline, which was conducted in 2009.[6] Although it is not within the 5 year timeframe, and Port au Prince has changed considerably since the 2010 earthquake, some key methodological lessons were incorporated.

These lessons included the rejection of livelihood zoning within the city, because 'the differences between the *bidonvilles* were not marked or distinctive enough to warrant dividing the city.' Another

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[4] Save the Children. "Urban Learning Initiative: Institutional Mapping and Lessons Learnt from Urban Protection, Education and Livelihoods programming." (2015).

[5] British Red Cross, Groupe Urgence Réhabilitation Développement. "Urban Livelihoods Recovery: Lessons from Port-au-Prince, Haiti." (2014).

[6] Dixon, Sam, and Julius Holt. "Port-au-Prince Urban Baseline. An Assessment of Food and Livelihood Security in Port-au-Prince." (2009).

lesson learned was the use of population density as a factor in sampling; this was the primary factor used for sampling in the 2009 baseline. In the current case study, this was considered in the initial stages when comparing areas of the city. Martissant, one of the two sections communales included in the current case study, has the second highest population density in the city.[7] In addition to this consideration, discussions with partners allowed for more nuanced and detailed comparison of areas. As such, factors such as access to basic services and livelihood options were also considered, and given high priority in the selection of areas.

One other relevant document was found, which does not focus on food security or economic vulnerability, but still provided some relevant methodological information. A GIS-based assessment of urban environmental quality was conducted by Habitat International in 2013.[8] This assessment asserts that urban environmental quality is a key dimension of Quality of Life, focusing on the physical and material domain. Included in this assessment were physical factors (such as greenness and traffic-induced air and noise pollution), built environment factors (such as exposure to public markets, cemeteries and distance to slums), and natural hazard factors (such as risk of flooding and landslides).

With specifically defined variables and classifications, the assessment developed a composite urban environmental quality index and assigned values to all areas in the commune of Port au Prince. As noted, this approach does not directly inform food security analysis, however important lessons could be noted in terms of area based vulnerability and urban sampling processes. For example, in urban areas, access to services and quality of infrastructure are community/neighbourhood factors which can directly impact household level vulnerability. Thus the initial selection of areas could be informed by a similar methodology. Using existing GIS data, standardized thresholds, and creating a composite index, is a promising idea to inform area based sampling for urban food security and vulnerability assessments.

Given time and capacity constraints, this was not a feasible option for the current case study. However, this document is included in the secondary review as it provides important lessons which may be incorporated into future work as part of the *Adapting* project.

5. Primary Data Collection

As explained above, the primary data collection included both qualitative work (focus group discussions and interviews with street vendors) and quantitative work (household survey). Section 5 presents the results of this component of the case study.

5.1 Demography

Income sources in urban areas are diverse, and rely heavily on engagement with markets. The ability of a household to engage with these markets is largely determined by demographic factors – the number of working age adults, the education, health, and skills of those adults, and the dependency ratio within the household. Given the diversity of livelihood options in an urban context, each requiring different skills and strengths, and compensating in varied amounts, the ways in which a household can engage in markets can largely influence economic vulnerability. Therefore these demographic factors can be even more important within the urban context.

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[7] Institut Haitien de Statistique de d'Informatique (IHSI). Population Totale, de 18 et plus: Ménages et Densités Estimés en 2015. Mars 2015.

[8] Joseph, Myrtho, Fahui Wang, and Lei Wang. "GIS-based assessment of urban environmental quality in Port-au-Prince, Haiti." *Habitat International* 41 (2014): 33-40.

Table 2: Household size

HH size	Frequency	Percent
1-4 people	180	43.9
5-6 people	132	32.2
7+ people	98	23.9

The household size within the sample ranged from 1 to 16 people, with a mean of 5.27. The mean dependency ratio (total number of children and elderly people divided by total number of working age people) was 106%, which is to say the average household had an almost equal ratio of working members to dependents – though with slightly more working members.

Table 3: Dependency Ratio

| Dependency ratio	Percentage of households
Dependency ratio < 100 *(more adults than dependents)*	46.8
Dependency ratio = 100 *(equal)*	20.7
Dependency ratio >100 *(more dependents than adults)*	32.4

Of the 410 households included in the sample, 228 (55.6%) were headed by men, versus 182 (44.4%) headed by females. When disaggregating the dependency ratio data by gender of household head, the average dependency ratio for male headed households is 101% and for female is 113% – clearly demonstrating that female headed households have a higher burden of care for dependents and elderly household members.

When looking at this split across expenditure quintiles, it becomes clear that wealthier households, as defined by consumption expenditure, have lower dependency ratios. Although households with a dependency ratio below 100% are 46.8% of the total, they represent 56% of the wealthiest quintile. Similarly, households with high dependency ratios represent a larger proportion of the poorest quintiles.

Figure 2: Dependency ratio by expenditure quintiles
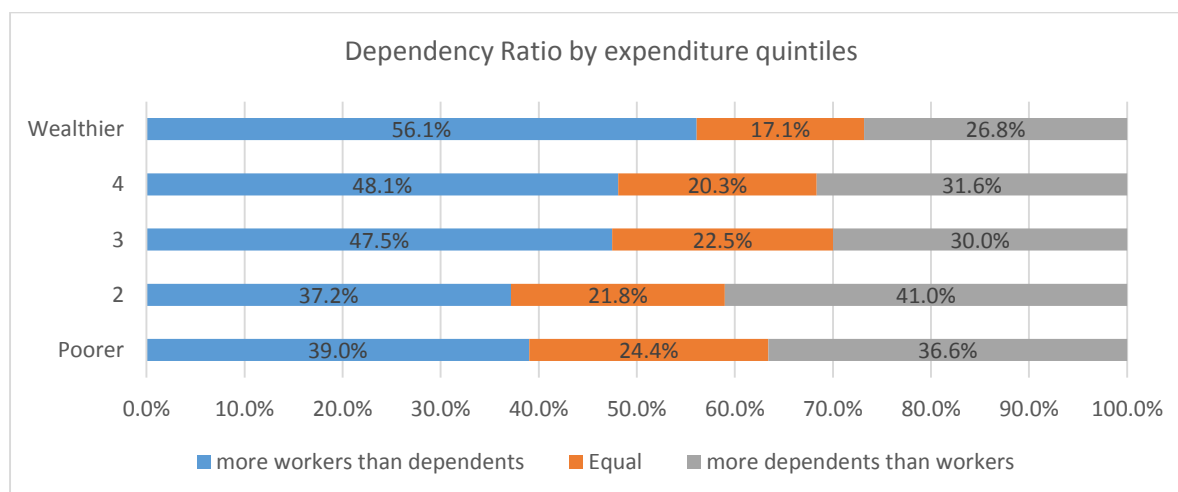
However, the age categories used for data collection were 0-4 years, 5-17 years, 18-59 years and 60+ years. It is quite possible that some older teenagers work and contribute to the household, and those in their 60s may also have some income sources. As a result, the realistic dependency ratio may be even lower than the analysis indicates. These age categories were defined with other considerations in mind (e.g. nutrition, education) – but this is further evidence of the need for a detailed household roster, including ages and activities, rather than groups.

Table 4: Education of Household Head

Without formal education	29.5
No education	*16.6*
Literate	*10.2*
Don't know	*2.7*
With formal education	**70.5**
Primary	*34.9*
Secondary	*27.3*
Professional training	*3.9*
University or more	*4.4*

When considering the education level of the household head, the majority reported primary level education (35%), or secondary level (27%). A tiny proportion of households (4.4%) had completed university or higher.

When considered against the sex of the household head, it is clear that more female headed households have no formal education (38%) in comparison with their male counterparts (23%).

Finally, the survey also asked about education of children within the household. 85% of the sample reported that all school age children were attending school. The other 15% provided reasons for why children were not attending school. Of that 15%, the following reasons were reported: children do not want to attend (3.7%);

Figure 3: Education by gender of household head

uniforms/materials are too expensive (7.1%) school fees are too expensive (11.7%). Thus a key takeaway is that 10% of the sample are not sending their children to school due to economic reasons.

Lessons learned: Given the importance of these key demographic factors, future urban assessments should collect a household roster, including individual level data on which household members are economically active, and any disabilities or physical limitations.

5.2 Housing and Assets

In the initial focus groups, participants were asked how to differentiate between wealthier and poorer households. A common theme in the groups was that housing characteristics and asset ownership can serve this purpose within and across neighbourhoods.

In examining housing characteristics, there was little variation in the sample between types of roof; over 99% of houses had a sheet metal or concrete roof. Similarly, over 90% of households had an improved floor (including mostly cement, but also wood and tile). However, this characteristic clearly serves to distinguish between households; though the proportion of households with unimproved floor is small (only 10%), their food security outcomes are clearly worse than others – with only 36% of households with an unimproved floor having acceptable food security, versus 75% of those with an improved floor. Despite this pattern, it is not suggested here that assets or housing characteristics can serve as proxies for food security status of households – but they may be useful proxies for wealth, which is often related to food security. It should be noted that the use of assets and housing for ranking household wealth is common in wealth indexes, for example in the Demographic and Health Surveys.
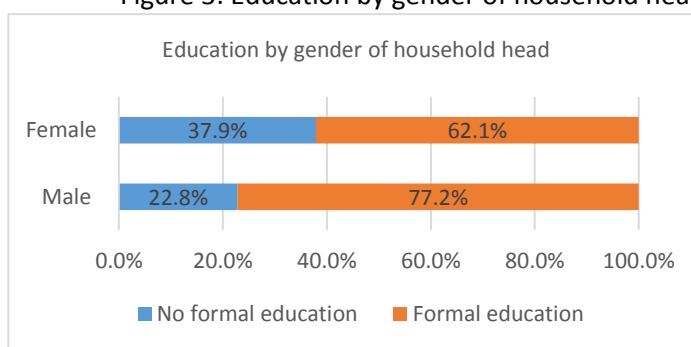
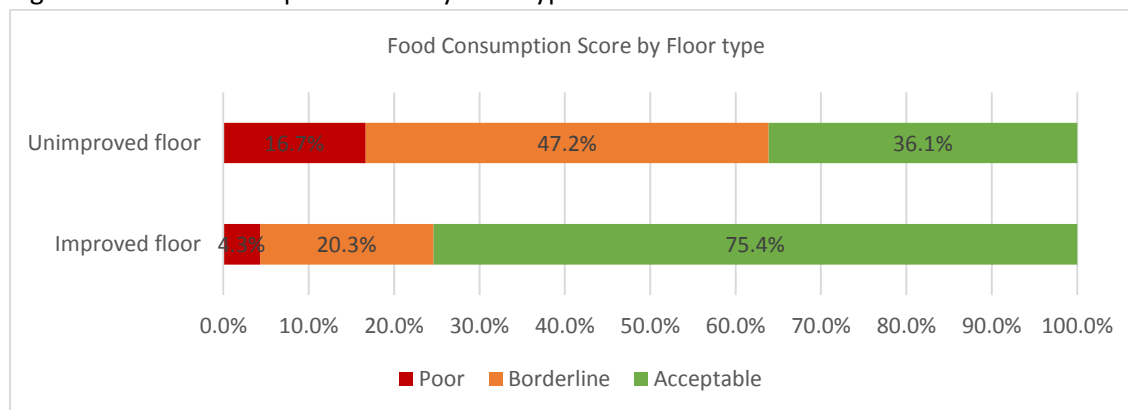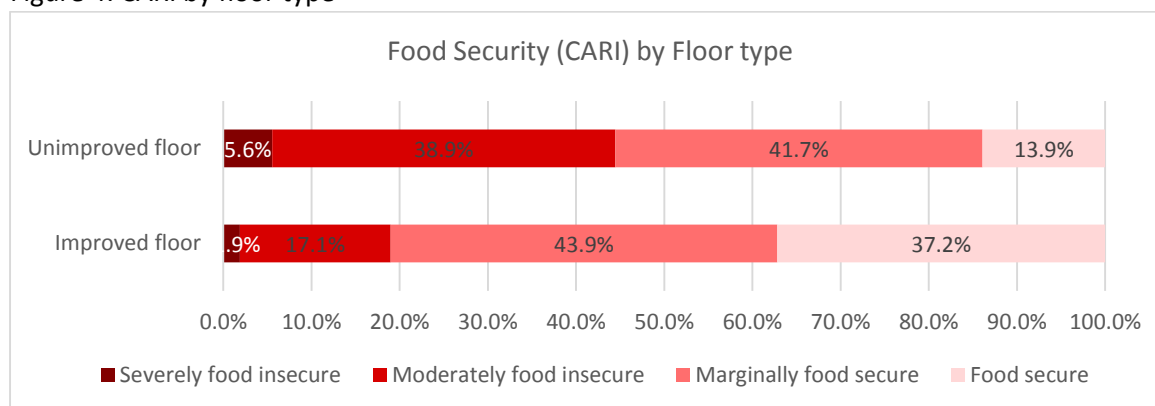Figure 3: Food Consumption Score by floor type

Figure 4: CARI by floor type

Primary source of energy can also be a helpful way to distinguish between wealthier and poorer households. Supporting this, the Haiti 2012 Demographic and Health

Table 5: Sources of energy by zone

Zone	Electricité	Bougie	Lampe à gas	Autre
Saint Martin	58.1%	24.0%	16.8%	1.1%
Grande Ravine	50.6%	26.2%	20.8%	2.4%
Fort Mercredi	41.3%	31.7%	23.8%	3.2%

Survey (DHS) urban wealth index included 'has electricity' with one of the highest component scores of all variables included.[9] Over half of households reported electricity as their main source of energy, followed by over a quarter who primarily use candles. However, it should be noted that this may simply be due to the location of the house, and availability of services in that area. There were clear differences in the survey between different zones, with almost 60% of households in Saint Martin using electricity as their primary source of energy, versus only 40% in Fort Mercredi.

In examining the type of sanitation facilities households use, there are similar trends across the zones of the city. The vast majority of households use

Table 6: Sanitation facilities by zone

Zone	Flush toilet	Private latrine	Shared latrine	In nature	Other
Saint Martin	8.4%	53.1%	32.4%	3.9%	2.2%
Grande Ravine	4.8%	53.0%	35.1%	5.4%	1.8%
Fort Mercredi	4.8%	65.1%	23.8%	1.6%	4.8%

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[9] Cayemittes, Michel, Michelle Fatuma Busangu, Jean de Dieu Bizimana, Bernard Barrère, Blaise Sévère, Viviane Cayemittes et Emmanuel Charles. 2013. *Enquête Mortalité, Morbidité et Utilisation des Services, Haïti, 2012.* Calverton, Maryland, USA : MSPP, IHE et ICF International.

private latrines (54.9%), followed by shared latrines (32.2%). The presence of a flush toilet at home can serve as a proxy for household wealth; this is also included as a DHS wealth index variable with an even higher component score than electricity.

In addition to asking about housing characteristics, the survey asked about the status of the household in regard to the house itself. Over half of households actually own their house, of which 20% do not have formal paperwork. Another 40% are renting their homes, and 3.7% reported having free housing. However, cross tabulations of key food security indicators with this data did not demonstrate any significant differences, suggesting that this (ownership of house) may not be a useful proxy.

Table 7: Crowding Index

Expenditure Quintile	Crowding Index
Poorer	4.08
2	3.40
3	3.76
4	3.84
Wealthier	2.79

Another key question asked about housing is the number of rooms inhabited, not including kitchen and bathroom. This question, in combination with the demography module, allows for calculation of a crowding index – number of people sleeping per room. When compared with the expenditure quintiles, the crowding index seems to present a useful proxy for wealth, with poorer households clearly having more occupants per room.

The household survey asked respondents about a long list of assets owned. These assets were discussed with the focus groups, and a long list was developed to ensure nothing critical was missed. Given the comprehensive nature of the list, many of the assets were not helpful to distinguish between households, with almost no one possessing them. However, there were still a number of assets included in the module that were useful. From this exercise, it is clear that data collection can focus on a few specific assets which can help distinguish between households – iron, radio, fridge, computer, television and telephone. Table 8.1 shows asset possession by expenditure quintile.

Table 8.1: Asset ownership by expenditure quintile

Expenditure Quintile	Marmites	Panneau solaire	Brouettes	Groupes électrogènes	Machine à coudre	Moto/ mobylette	Fer à repasse
Poorest	100.0%	0.0%	3.7%	1.2%	0.0%	2.4%	35.4%
2	100.0%	1.2%	1.2%	1.2%	6.1%	1.2%	57.3%
3	100.0%	1.2%	3.7%	0.0%	4.9%	8.5%	70.7%
4	100.0%	0.0%	9.8%	0.0%	4.9%	2.4%	75.6%
Wealthiest	100.0%	3.7%	6.1%	1.2%	9.8%	2.4%	87.8%

Table 8.1: Asset ownership by expenditure quintile (con't)

Expenditure Quintile	Radio	Réfrigérateur/ congélateur	Ordinateur	Voiture	Téléviseur	Véhicule particulière	Téléphone
Poorest	43.9%	6.1%	1.2%	1.2%	34.1%	1.2%	79.3%
2	52.4%	15.9%	7.3%	3.7%	52.4%	3.7%	84.1%
3	56.1%	14.6%	3.7%	1.2%	70.7%	1.2%	81.7%
4	57.3%	14.6%	8.5%	1.2%	67.1%	1.2%	92.7%
Wealthiest	67.1%	32.9%	18.3%	7.3%	87.8%	2.4%	93.9%

Data was also collected on a variety of small livestock, however there was very limited livestock possession with the exception of chickens. Chickens are still not particularly useful for distinguishing

between wealthier and poorer households, because ownership of chickens does not correlate well with other measures of wealth; very poor households do not have chickens, but neither do wealthier households.

Lessons learned:

- Collect housing characteristic data in order to differentiate between households.
- Location of households and availability of/access to services in that area must be considered. Access to services should not necessarily lead to conclusions around wealth status, as this may be area based within cities.
- Ask about the number of rooms per households in order to calculate a crowding index, which can be a useful and simple wealth proxy.
- Collect asset ownership data on a limited set of assets already established as helpful to distinguish between wealthier and poorer households.
- Do not collect livestock data as this does not serve this purpose.

5.3 Food Consumption and Food Access

5.3.1 Meal Frequency and Food Groups

All households were asked about the number of meals consumed per day by adults and by children. Only 14.4% of adults reported consuming three meals per day, with the rest eating only one or two meals per day. Similarly, only 13.2% of households reported that children consumed three meals per day. Worryingly, 34% of households reported children only having 1 meal per day, and 53% reported 2 meals per day for children.

When asked about the specific food groups consumed, it is clear that cereal, oil, pulses and sugar are most frequently consumed.[10] This corresponds to the high consumption of rice and beans in Port au Prince. There is noticeably low consumption of fruit and vegetables, at an average of 1.23 days and 1.46 days per week respectively.

Figure 5: Food groups consumed
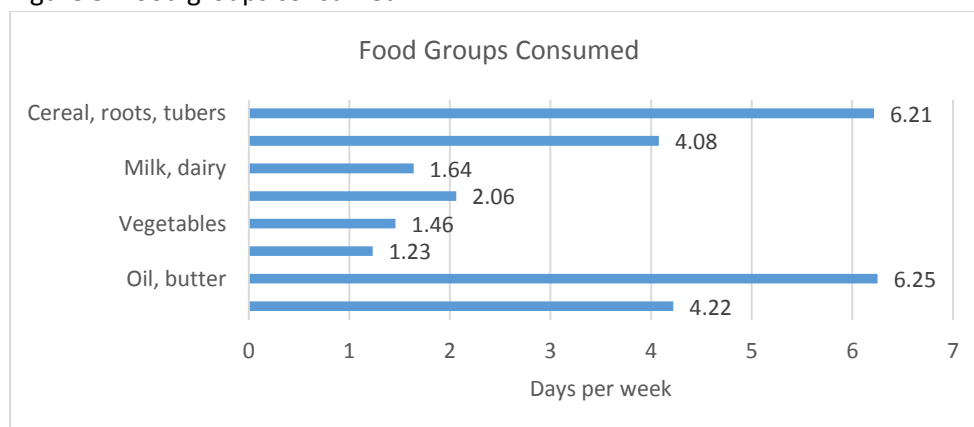
The Household Dietary Diversity Score is often used a proxy measure of food access; it is a simple sum of the number of different food groups consumed over a defined reference period. The standard HDDS asks about 12 food groups over a 24 hour recall period. This analysis of dietary

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[10] Following the most recent WFP/VAM guidance, the food consumption module asked specifically about "foods prepared and/or consumed at home." This is different from previous urban surveys in Haiti, which asked about foods consumed by most household members; this difference may impact results.

diversity relies on the Food Consumption Score module, which uses a 7 day recall, and includes 10 food groups: cereals, pulses, meat, fish, dairy, eggs, vegetable, fruit, oil and sugar (note that the FCS module also includes some additional food groups which are outside the scope of the recommended HDDS analysis).

Table 9: Dietary Diversity

Expenditure Quintile	Mean Dietary Diversity
Poorer	5.34
2	5.93
3	6.63
4	6.74
Wealthier	7.52

On the one to ten scale constructed using the FCS data, the average for all households in the sample was 6.43. There is a clear pattern linked to expenditure, with dietary diversity increasing in wealthier households.

5.3.2 Food Sources

All households were asked about the primary source of these foods. In urban areas, households rely almost entirely on markets for their food supply. This was strongly supported by the data, with every food group reportedly sourced over 95% from markets. For future monitoring, it may be more helpful to gather more details on the type of market, and to distinguish between cash and credit as an indicator of vulnerability, rather than asking all sources.

Lesson Learned: Given extremely high reliance on markets, the typical food source module must be modified to gather details on the types of markets households rely on. Future assessments should also focus on the proportion of cash versus credit purchase, which may provide insight into economic vulnerability.
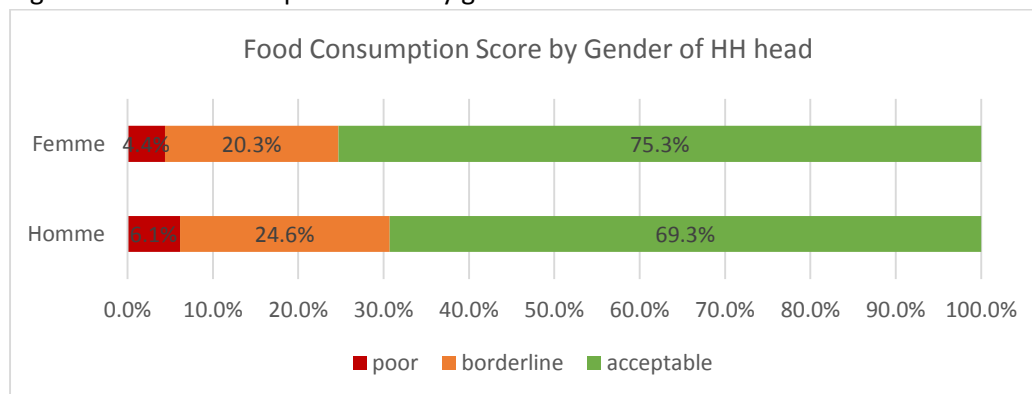
5.3.3 Food Consumption Score

The Food Consumption Score is a key indicator used by WFP and others to measure household food access. It is a nutrient weighted food frequency measure, in which households report the number of days per week they ate specific food groups. The FCS includes only foods prepared or consumed at home; clearly this has big limitations in urban areas. However, based on this at home food consumption, 72% of households in the survey had acceptable food consumption. This data is clearly linked to household wealth, as measured by expenditure. Over 90% of wealthier households had acceptable food consumption, versus only 41% of the poorest households.

Figure 6: Food Consumption Score by Expenditure Quintile
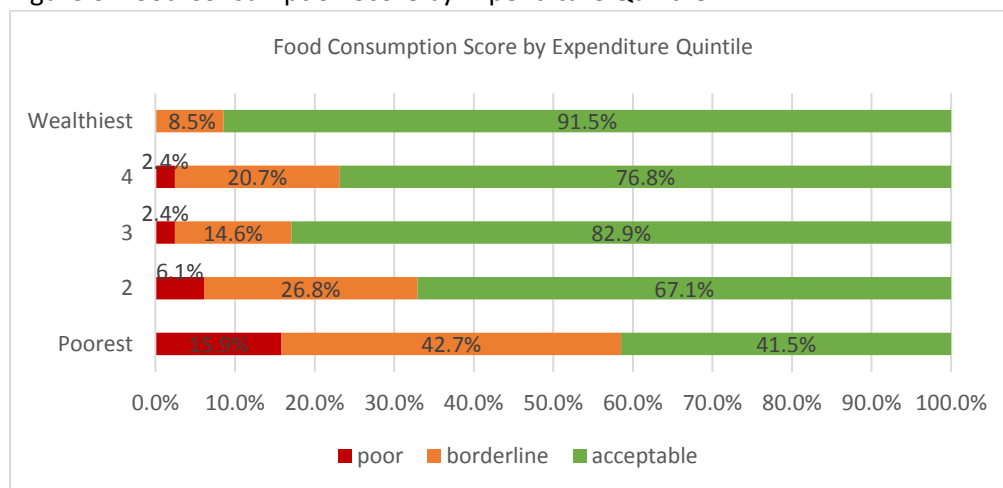
When examined by gender of household head, it appears there is little difference between male and female headed households. In fact, female headed households appear slightly better off than their male counterparts, with 75% acceptable food consumption in comparison to 69% among male headed households.

Figure 7: Food Consumption Score by gender of household head

5.3.4 Food Consumption Score Nutrition Quality Analysis (FCS-N)

The Food Consumption Score Nutrition Quality Analysis (FCS-N) is derived from the FCS and focuses on three main nutrients: protein, vitamin A and hem iron.[11] By grouping food items rich in these nutrients, food consumption frequency can be interpreted into consumption frequency of these three key nutrients. As the FCS is a module collected at household level, the FCS-N gives frequency of consumption of nutrients for the household. The categorization of the nutrient consumption frequency is divided into three groups and they are 0 days (never), 1-6 days (sometimes) and 7 days (everyday).

Vitamin A is important due to its direct link with functioning of eyesight, immune system, growth and the reproductive system. Protein plays a vital role in the growth process; individuals require sufficient protein intake to prevent undernutrition. Iron has high deficiency rates across the globe, with higher rates in developing countries. A lack of iron in the diet can lead to iron deficiency which can result in anaemia. This condition can have a number of complications on an individual's health and well-being, as it has an important role in a number of enzymes involved in the oxidative metabolism and other cell functions.
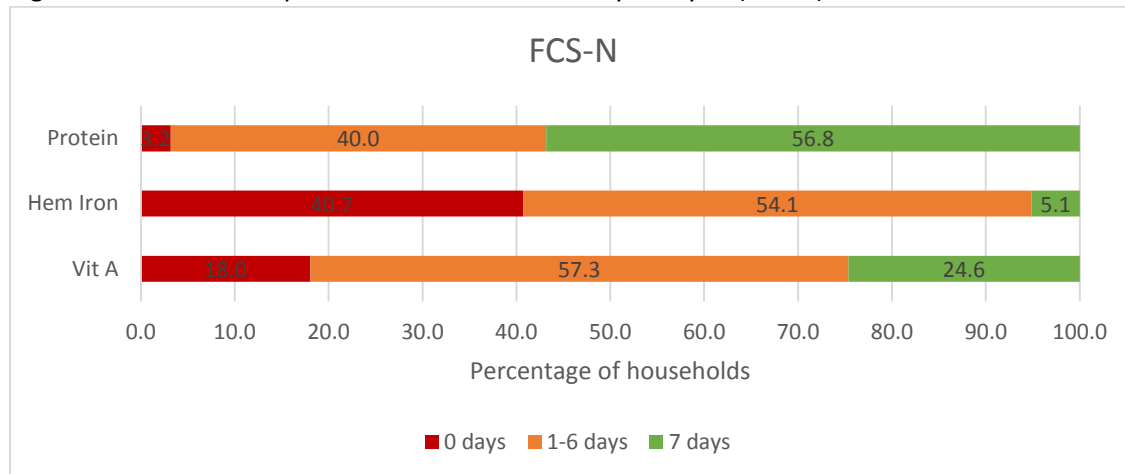
The FCS-N results for Port au Prince show very low consumption of hem iron, with 40% of households reporting 0 days of consumption. These concerning results indicate a risk of iron deficiency anemia. According to 2008 data, two-thirds of children under-five, three-fourths of children under-two and 60% of pregnant women suffered from anaemia in Haiti.[12]

For vitamin A, almost a fifth of households report 0 days consumption, though one quarter consume vitamin A rich foods daily. The most promising result is protein, with over 55% of households consuming protein rich foods daily. This may be a result of the very high consumption of beans, which are a protein rich food.

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[11] To find out more about the FCS-N tool please refer to the technical guidance: http://www.wfp.org/content/food-consumption-score-nutritional-quality-analysis-fcs-n-technical-guidance-note.

[12] WHO. 2008. Worldwide Prevalence of Anemia 1993–2005: WHO Global Database on Anemia.

Figure 8: Food Consumption Score Nutrition Quality Analysis (FCS-N)

FCS-N

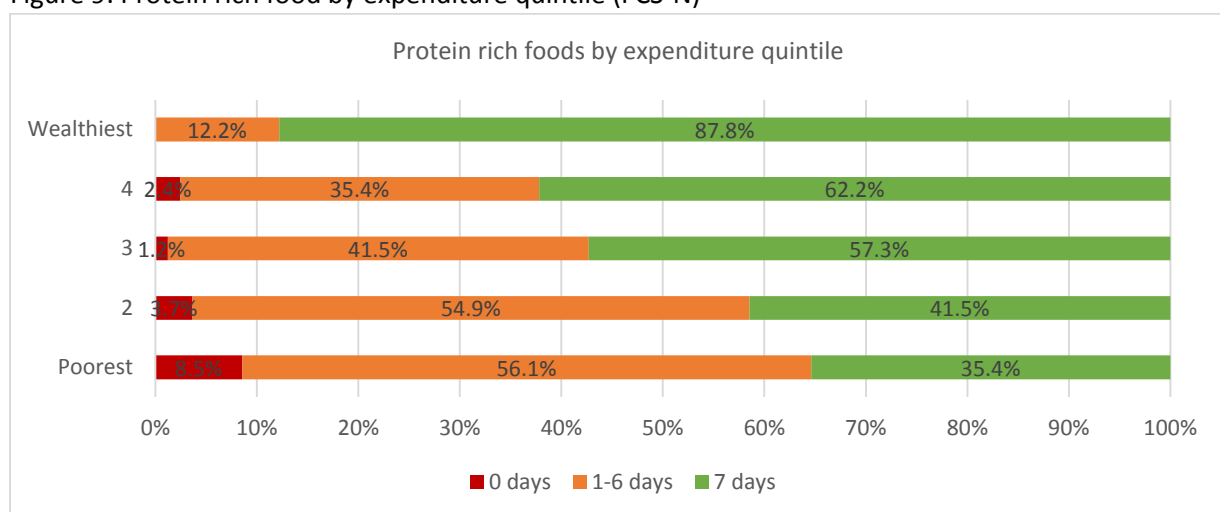|	0 days	1-6 days	7 days
Protein	3.2	40.0	56.8
Hem Iron	40.7	54.1	5.1
Vit A	18.0	57.3	24.6

Percentage of households

When examining the data by expenditure quintile, again it appears that the frequency of these nutrient rich foods is linked to wealth. Table 10 displays the data for all three nutrients by expenditure quintile. Figure 9 highlights protein: while the aggregate figures show over half the sample with 7 day protein consumption, this drops to only 35% in the poorest wealth quintile.

Table 10: FCS-N by expenditure quintile

Expenditure Quintile	Vitamin A			Hem Iron			Protein		
	0 days	1-6 days	7 days	0 days	1-6 days	7 days	0 days	1-6 days	7 days
Poorest	36.6%	54.9%	8.5%	56.1%	43.9%	0.0%	8.5%	56.1%	35.4%
2	19.5%	68.3%	12.2%	52.4%	43.9%	3.7%	3.7%	54.9%	41.5%
3	19.5%	54.9%	25.6%	32.9%	62.2%	4.9%	1.2%	41.5%	57.3%
4	8.5%	58.5%	32.9%	37.8%	56.1%	6.1%	2.4%	35.4%	62.2%
Wealthiest	6.1%	50.0%	43.9%	24.4%	64.6%	11.0%	0.0%	12.2%	87.8%

Figure 9: Protein rich food by expenditure quintile (FCS-N)

Protein rich foods by expenditure quintile

|	0 days	1-6 days	7 days
Wealthiest		12.2%	87.8%
4	2.4%	35.4%	62.2%
3	1.2%	41.5%	57.3%
2	3.7%	54.9%	41.5%
Poorest	8.5%	56.1%	35.4%

Lesson Learned: It is important to collect data allowing disaggregation into these nutrient rich food groups, particularly hem iron. With over half of poorer households consuming 0 days of hem iron rich foods, there is risk of iron deficiency anaemia – and data demonstrates that anaemia is an existing problem across the country. Hem iron rich foods are more expensive, so if household budgets are affected by loss of wages or increase in prices, it is likely that these worrying figures will worsen. Thus monitoring of this data is important as an indicator of risk of iron deficiency.

5.3.5 Household Food Insecurity Access Scale

Measures of food security can be broadly grouped into diet measures, and experiential measures. The food consumption score is a diet measure, focused on what households have eaten. This shows almost three quarters of households with acceptable food consumption. The survey also included the Household Food Insecurity Access Scale module, a measure of the experience of hunger. The results of the HFIAS paint a very different picture.

The HFIAS results demonstrate that only 5.4% of households are food secure. The most severe categorisation is 'severely food insecure access' – which included 81.6% of respondents. In order to get this classification, a household must indicate that at some point over the past four weeks, they either: frequently had smaller or fewer meals than they would like, or ever (at least once) had no food in the house, went to sleep at night hungry, or spent a whole day and night without food. A majority of households reported yes to these questions, resulting in the high categorisation of severely food insecure access. Figure 10 shows the number of households reporting yes (rather than the frequency) to each specific question.

Figure 10: Household Food Insecurity Access Scale: Yes responses
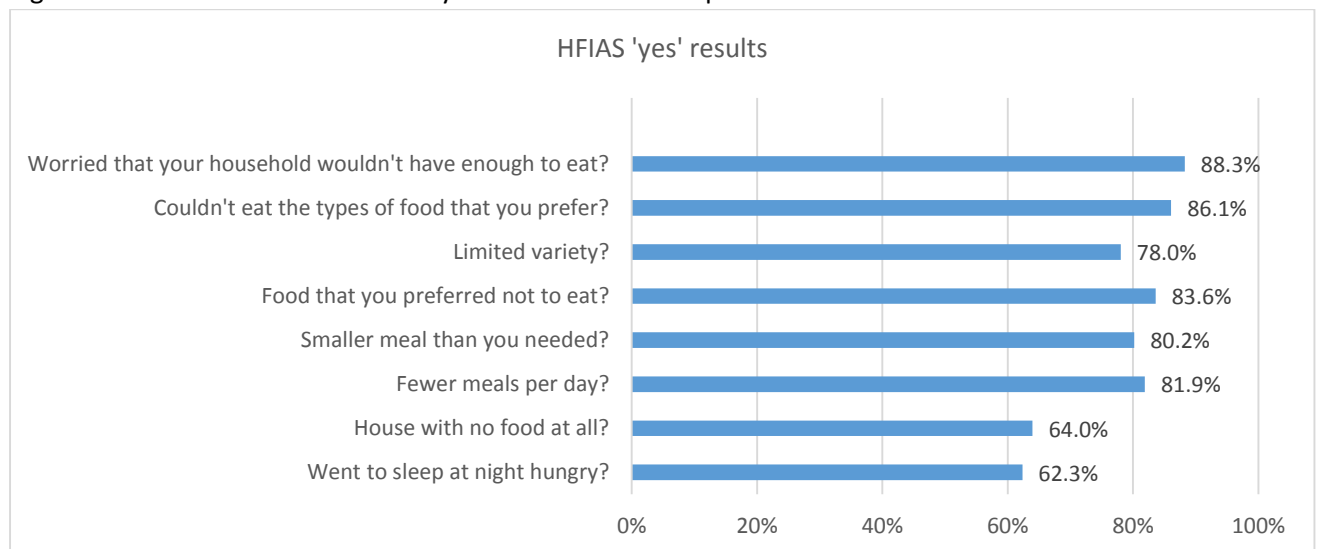
There are no large differences when examining these results by gender of household head, or other key demographic data. However, there is a clear difference in responses by expenditure quintiles. The wealthier a household is, the less likely it is to respond 'yes' to the HFIAS questions. The difference between poor and wealthy households grows with the severity of the questions. For example, 93% of households in the poorest expenditure quintile responded that they had worried that the household did not have enough to eat, versus 80.5% of households in the wealthiest expenditure quintile – a 12% difference. However, that difference grows to 44% when considering

the strategy 'passing an entire day without eating' – 75% of the poorest households responded yes, versus only 31% of the wealthiest households.

Lesson Learned: Given the difference in results provided by diet measures and experiential measures, it is recommended to include both types of indicators within future monitoring and assessments; this will allow further comparison and tracking of changes.

5.3.6 Street Foods

In order to complement the inside the home food consumption data, a street food module was included in the survey – the types and frequency of foods eaten outside the home. In this module, 43% of households reported that no one in their household ate any street food in the preceding seven days. This also means that 57% of households did consume some street food during the week, including 10% who reported eating street food every day. The average 57% (consumed street food at least once during the week) includes 55% of male headed households, and 59% of female headed households.

Of the 57% who eat outside the home sometimes, all were asked why - what is their one most important reason for eating street food. Almost half of these explain it is because people in the household work outside the home. A further 30% explain that it is because they do not have sufficient money to buy and prepare food at home. Thus these two responses alone account for three quarters of households.

Figure 11: Reasons for eating street food
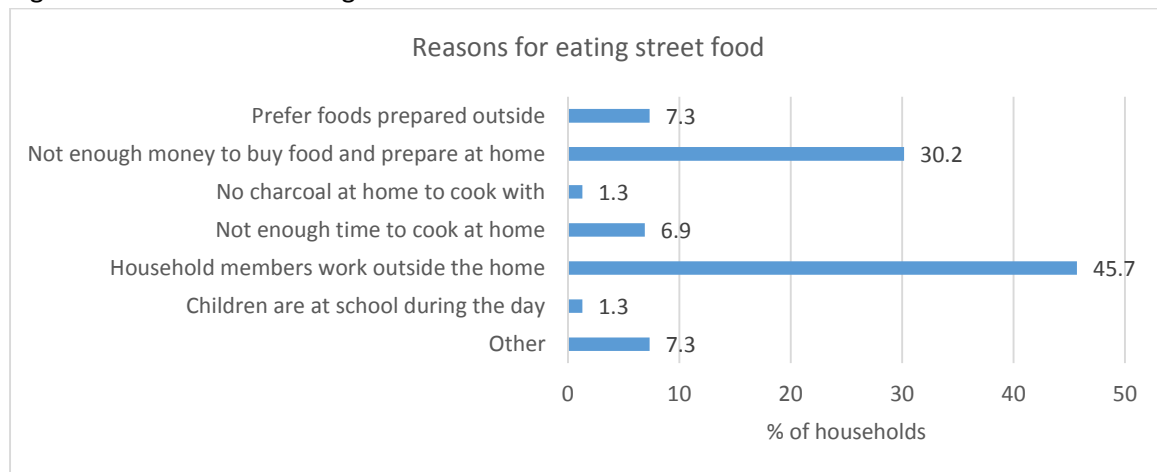
The street food data collection exercise started with a preliminary exercise of interviewing vendors to understand the most commonly prepared/sold dishes. Based on this, the street food module asked about 17 frequently reported dishes, and how often the individual respondent ate these foods in the past week. As many individuals do not know exactly which foods other members of their household ate outside the home, the measure is at individual level – in contrast to the household level food consumption score. Table 12 lists all the dishes include in the module, along with a description of the ingredients.

Table 12: Street food descriptions

#	Street food	Description
1	Aleken	This term can refer to a variety of cereal and bean based dishes, but the most common composition is rice and beans, perhaps with small quantities of meat.
2	Riz haricots viande	Rice and beans with meat
3	Mais haricots viande	Ground maize with beans and meat
4	Spaghetti	Pasta with meat sauce
5	Bouillon	Soup with potato, meat and vegetables
6	Pate chodye	Beef pastry
7	Bannann ak ze	Eggs and plantain
8	AK-100	Corn-based milky porridge
9	Kokiyol	Fried dough
10	Soup pen	Bread soup
11	Soup joumou	Pumpkin soup
12	Pen beurré (manba)	Bread with peanut butter
13	Pen ak ze	Bread with eggs
14	Fwi	Fruit
15	Canne à sucre	Sugar cane
16	Kasav ak manba	Cassava based cracker with peanut butter
17	Frittures (avec viande)	Meat in fried batter

The majority of households reported 0 days of consumption for all these street foods. Frequency data is presented below (Table 13) only for those dishes consumed by at least 15% of households.

Table 13: Street food consumption frequency

Street Food	0 days	1-3 days	4-6 days	7 days
Aleken	68.54%	22.44%	7.07%	1.95%
Riz haricots viande	70.98%	24.88%	3.17%	0.98%
Mais haricots viande	84.88%	14.88%	0.00%	0.24%
Spaghetti	84.39%	14.39%	0.73%	0.49%
Pate Chodye	71.46%	19.76%	5.37%	0.49%
Fritture (viande)	81.46%	14.63%	3.66%	0.24%

The purpose of the street food data collection is to understand if outside the home foods are filling gaps – i.e. are people eating different types of foods in the street? And to determine who is eating this food – are these people with poor at home food consumption, who are meeting gaps through street food? In order to analyse this, the street food dishes must be disaggregated into food groups.

The preliminary data collection asked street food vendors about the ingredients included in these dishes in any significant quantity. This step allows transformation of the street food consumption frequency data into food group frequency. Table 14 presents this data, allowing insight into which food groups are most commonly consumed through street foods.

Table 14: Street foods – food groups

Days	Cereal	Pulses	Dairy	Meat	Veg	Fruit	Oil	Sugar
0	46.83%	54.15%	89.02%	53.66%	80.24%	88.78%	47.07%	81.46%
1	2.93%	4.88%	4.88%	4.88%	8.54%	4.88%	2.93%	5.61%
2	5.37%	7.56%	4.39%	4.63%	4.63%	3.41%	5.61%	6.34%
3	3.17%	9.51%	0.98%	5.37%	3.66%	1.22%	4.15%	3.66%
4	4.88%	6.34%	0.00%	5.37%	0.98%	0.49%	5.12%	0.49%
5	3.66%	5.85%	0.24%	4.88%	1.22%	0.24%	4.15%	0.98%
6	4.63%	4.63%	0.00%	2.68%	0.00%	0.49%	4.63%	0.00%
7	28.54%	7.07%	0.49%	18.54%	0.73%	0.49%	26.34%	1.46%

To understand the implications of this data, it is importance to reference the inside the home food group frequencies. This FCS data (see figure 5) demonstrated that households are frequently eating cereal, oil, sugar and pulses, with very limited consumption of fruit, vegetables, dairy at meat. The most frequency consumed food groups outside the home are cereal and oil, but this is not necessarily meeting a gap – these items are already consumed at home every day by 60% and 76% of households respectively.

One potential gap filled is meat. At home, almost a quarter of households reported 0 days of meat consumption, with another 50% of households consuming meat 1-3 days per week. However 46% of households report eating street food meat at least once per week, including 18% who eat it every day.

It is important to highlight that inside the home, fruit and vegetables are very rarely consumed (50% and 38% 0 days consumption, respectively). The street food data paints the same picture, with over 80% of households reporting 0 days of fruit and vegetable consumption through street food. However, the availability and price of these food items, particularly fruits such as mango, avocado, and oranges, is very seasonal in Port au Prince. Therefore although it appears that fruit and vegetables are almost absent from diets in Port au Prince, this is likely a result of the survey taking place in December.

The next important question when examining street food is who is eating these foods? Are these households with limited in home consumption, who meet gaps through street food? Or are they wealthier households who supplement already acceptable diets with additional calories?

As a large proportion of households indicate they eat street food because it is cheaper (see figure 11), this suggests that it may be correlated with wealth. Transforming the frequency data (how many days did you or someone in your household eat street food?) into a binary yes/no variable allows comparison with expenditure quintiles. As noted above, 43% of households responded no, and 57% responded yes.

Given the reasons above, we would expect poorer households to purchase street food (as 30% of households said they do not have enough money to purchase and prepare food at home). However, the results demonstrate the contrary of this expectation; those households who ate street food are clearly better off than those who did not. This may simply be linked to work outside the home – those who have frequent work are more likely to purchase street food, while those who stay at home (and may therefore be poorer) eat at home.

Table 15: Street food consumption by expenditure quintile

Expenditure Quintile	No street food	Ate street food
Poorest	62.2%	37.8%
2	45.1%	54.9%
3	36.6%	63.4%
4	39.0%	61.0%
Wealthier	34.1%	65.9%

When disaggregating by specific food groups, and comparing with the FCS, the results are similar. Figures 12 and 13 show cereal and meat consumption by FCS; cereal and meat were chosen because cereal is commonly consumed by all households, while meat is a more luxury commodity that may help to differentiate between households. This data shows that households with poor at home food consumption also eat street less frequently; with almost 60% reporting 0 days consumption of cereal, and 73% reporting 0 days consumption of meat.

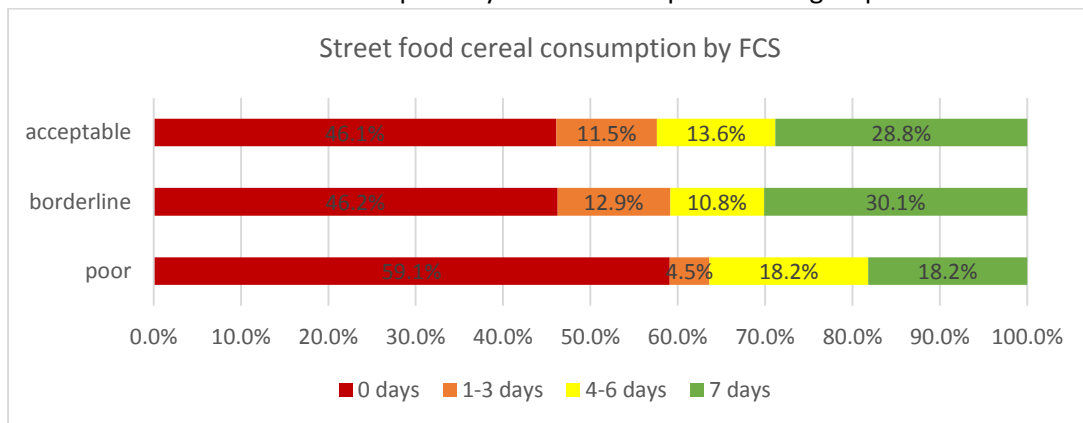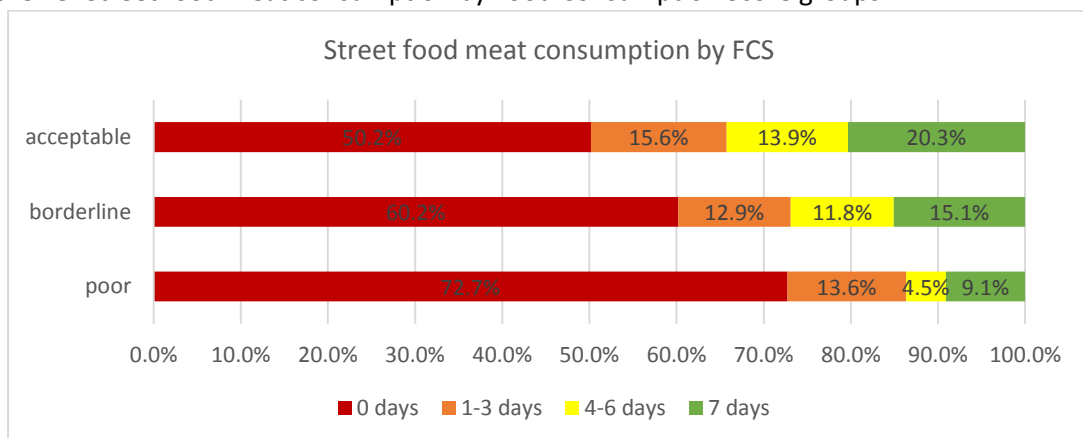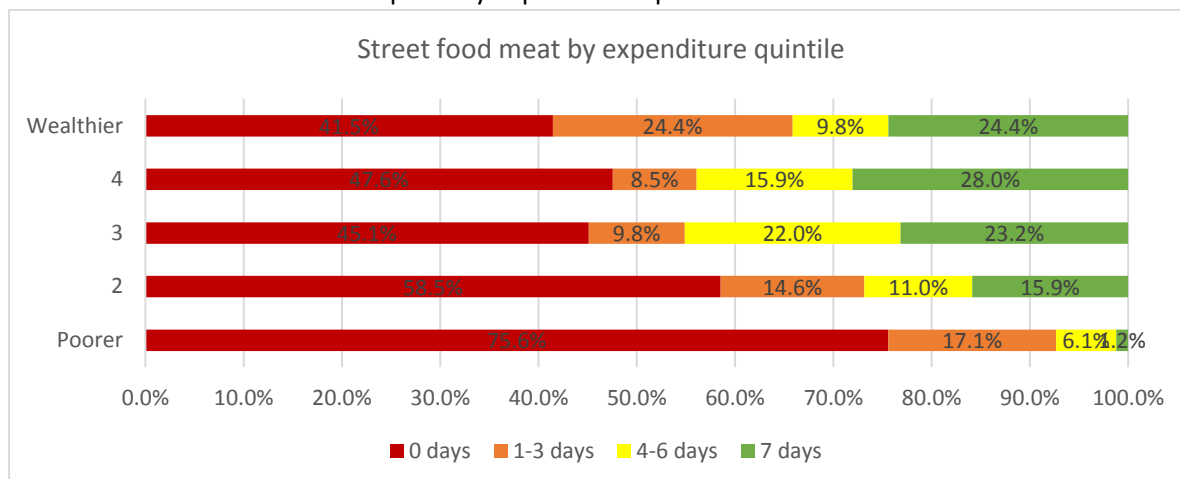Figure 12: Street food cereal consumption by Food Consumption Score groups

Figure 13: Street food meat consumption by Food Consumption Score groups

When examining the data by expenditure quintile, it tells the same story; wealthier households eat more street food than poorer households. This comes across clearly when examining street food meat consumption, with over three quarters of the poorest households reporting 0 days of street food meat, versus only 41% of wealthier households.

Figure 14: Street food meat consumption by expenditure quintile

Street food meat by expenditure quintile

Quintile	0 days	1-3 days	4-6 days	7 days
Wealthier	41.5%	24.4%	9.8%	24.4%
4	47.6%	8.5%	15.9%	28.0%
3	45.1%	9.8%	22.0%	23.2%
2	58.5%	14.6%	11.0%	15.9%
Poorer	75.6%	17.1%	6.1%	1.2%

These findings tell us that street foods are serving to supplement diets of wealthier households who already have relatively good diets at home. Even for these households, street foods are not filling key nutrient gaps – the patterns of food groups consumed are very similar, whether the food is consumed at home or in the street. Thus comparing the household level FCS and the street food consumption, it is evident that diets are lacking in fruit and vegetables, and have limited meat and dairy consumption. In sum, street foods are mostly providing additional calories to those with already acceptable diets, rather than filling caloric or nutrient gaps for poorer households.

Lesson Learned: In urban assessments, it is essential to collect and analyse street food data to understand the relative importance of street foods to different households. However, further research is required on the validity of in-home food consumption measures (e.g. the FCS or HDDS) in urban areas, and/or how to merge in home and outside home food consumption data. Future studies may consider more detailed street food analysis, allowing for calorie calculations.
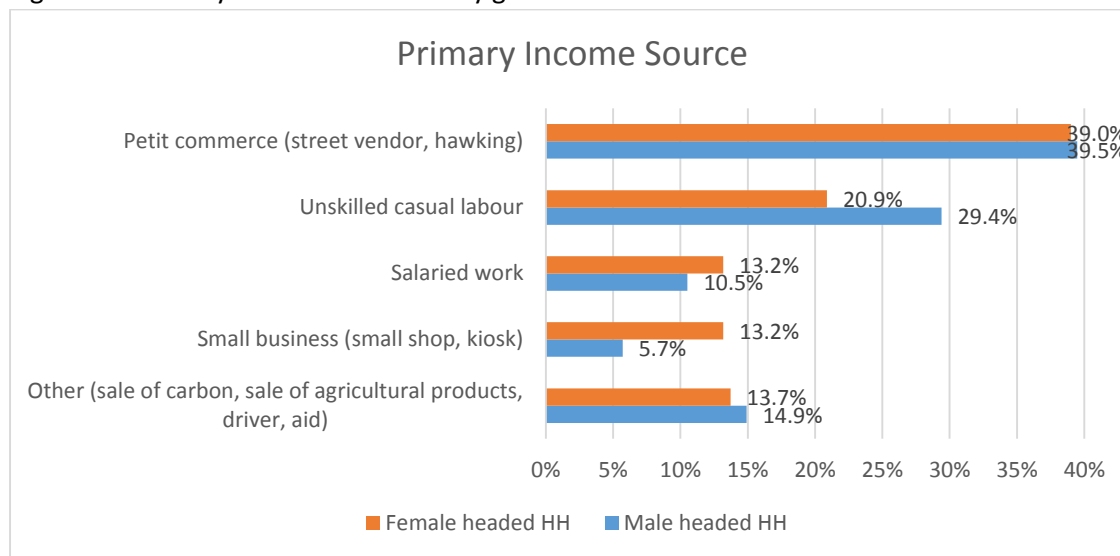
5.4 Livelihoods

In rural areas, analyses are often stratified by livelihood types – households with similar livelihoods can be grouped into categories. In urban areas, this kind of livelihood analysis is particularly challenging. Even those with the same primary income sources still have huge variation in the amount earned; due to this variation, the livelihood stratification is a difficult component of vulnerability analysis, requiring further research. It may instead be more practical and simple to focus on wealth grouping distinctions, following an HEA-style approach to differentiating between households.

When asked about the primary source of income, almost 40% of household listed small trade – including vendors who move (i.e. with no shop or set place) and hawking. Followed by this, a quarter of households listed unqualified daily work as their primary income source.

When analysing the data by gender of household head, a few key differences emerge: 30% of male headed households report daily unskilled labor as their primary income source, in comparison with 21% of female headed households. This difference is balanced by 13.2% of female headed households reporting small business as their primary income source, versus only 5.7% of male headed households. Within Port au Prince, 'petit commerce' is generally considered a female activity, while unskilled labor is typically considered more masculine. This finding underlines the

previous lesson learned of collecting a more detailed household roster in future surveys, including age, gender and economic activities of each household member.

Figure 15: Primary source of revenue by gender of household head

Primary Income Source

Income Source	Female headed HH	Male headed HH
Petit commerce (street vendor, hawking)	39.0%	39.5%
Unskilled casual labour	20.9%	29.4%
Salaried work	13.2%	10.5%
Small business (small shop, kiosk)	13.2%	5.7%
Other (sale of carbon, sale of agricultural products, driver, aid)	13.7%	14.9%

The high dependence on markets is also a key lesson here – most people list small business or unskilled labour as their primary livelihood, so good market analysis is also an essential component for livelihoods analyses in urban areas. This market analysis should include commodity prices, supply and demand, in addition to labour market analysis.

Table 16: Number of income sources by gender

Gender, household head	2nd income source	3rd income source
Male	64.0%	14.0%
Female	56.6%	12.6%

Given that many urban households have multiple income sources, all households were asked about other income sources – up to a maximum of six. 60% of households reported having a second income source; 13.4% reported having a third income source, and only 4.4% of households had a fourth income source. Table X demonstrates some small differences between households according to the gender of household head, with female headed households having fewer income sources.

In examining this data, it is useful to understand whether multiple sources of income is a sign of wealth (i.e. more sources equals more income) or poverty (more sources indicate limited revenue from each source). Comparing the 40% with only one income source and 60% with more than one income source indicates that in Port au Prince, the majority of households in the wealthier expenditure quintiles have more than one income source (roughly 70% with multiple income sources, versus 30% with only one).

Figure 16: Number of income sources by expenditure quintile
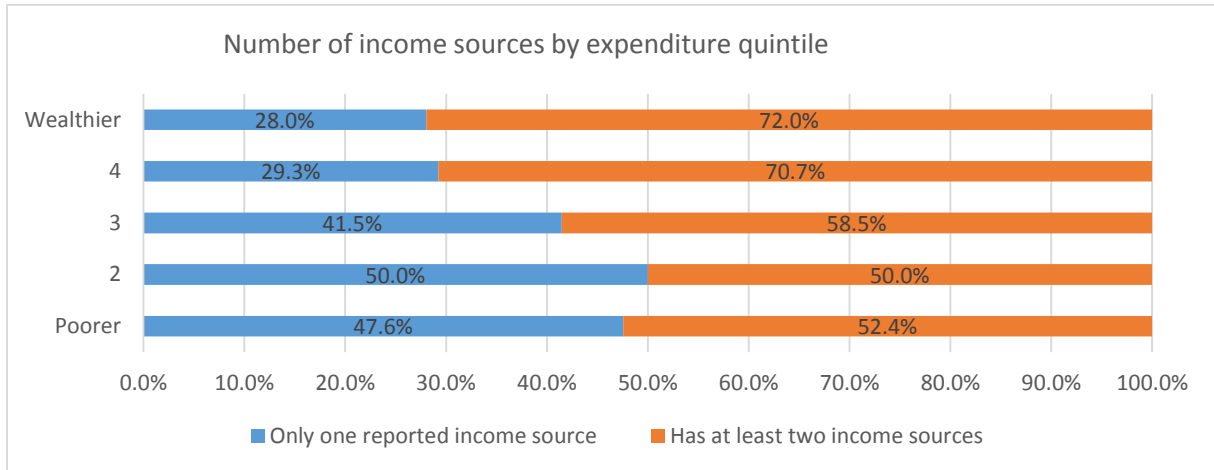
This pattern is similar when looking at food security outcomes; 76% of households with more than one income source have acceptable food consumption, in comparison with 66% of households with only one income source.

Figure 17: Food Consumption Score by number of income sources
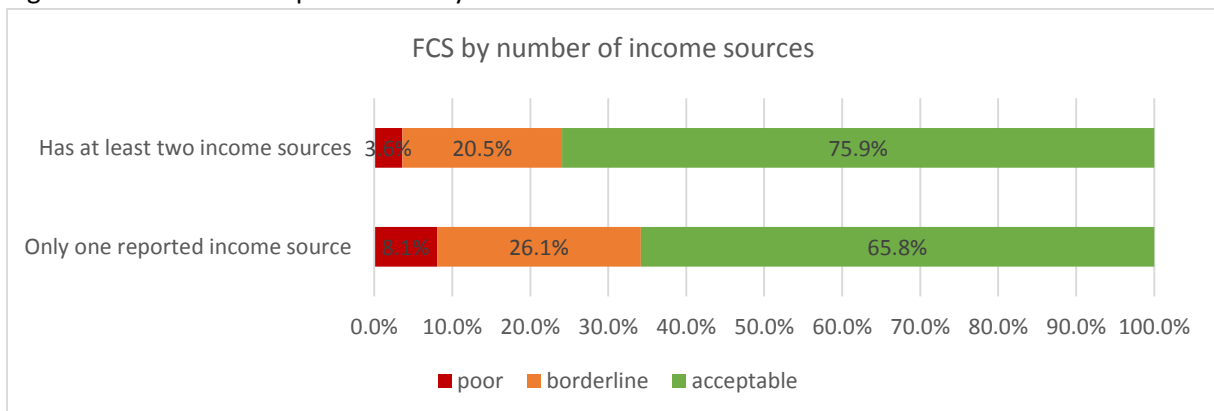
These findings suggest that it is important to ask about the number of income sources, and the specific source of income for the most important contributors to household income, but perhaps not worthwhile to ask the details of a third or fourth source – simply the number will suffice.

In trying to determine whether the primary source of income (livelihood of the household) is related to the wealth of that household, it is useful to examine expenditure – used throughout this analysis as a key measure of wealth.

As expenditure is not normally distributed, the average is not a meaningful statistic for comparison. When looking at the median, those who indicated they did not have a source of income had the highest expenditure, though this is likely a data collection issue. Following this, salaried work, driver and small business have the highest median expenditure. However, the range for all of these figures is very large, so even if the primary occupation has a high median income, it is quite possible that a household within that grouping could still be very poor.

Table 17: Total Expenditure statistics by Primary Income Source

Source de revenue	Quel pourcentage de la revenue totale est contribué par cette source ? (mean)	Count	Total Expenditure (Gourdes)			
			Mean	Maximum	Median	Range
Petit commerce (vendeur ambulante, colportage)	76.61	161	21687.42	144325.00	16040.00	142707.50
Travail occasionnel non-qualifié (salaire journalier, pas stable)	75.29	105	19736.36	138975.00	14300.00	137911.50
Travail salarié (revenue stable, mensuel)	77.50	48	34841.21	137060.00	28758.75	129092.50
Pas d'autre sources		4	47869.25	123122.00	30902.50	116572.00
Petite entreprise (petite boutique, kiosque, stable localité)	76.35	37	23228.49	72375.00	17741.00	69310.50
Vente de charbon	68.33	6	20085.33	42480.00	16463.75	40937.50
Autre – a préciser	91.52	23	15355.72	39400.00	14017.50	36100.00
Transfert/envoie d'argent (des parents, familles)	78.46	13	20406.15	38745.00	15285.00	31380.00
Dons, assistance humanitaire	78.00	5	13378.50	27092.50	12005.00	24422.50
Chauffeur, service de transport	100.00	5	23245.00	34930.00	19147.50	18035.00
Vente de produits agricoles	70.00	2	6446.25	9655.00	6446.25	6417.50
Grande entreprise (grossiste, grande boutique, business)	65.00	1	10005.00	10005.00	10005.00	0.00

When considering income sources, it is important to ask households directly about remittances – transfers of money from friends and relatives. In Port au Prince, when asking about the previous six months, 70% of the sample said they had not received any remittances. 18% of households noted that they had received a transfer once or twice over the past six months, while 12% had received a money transfer more frequently.

In examining the data across food security groups, it is clear that food secure households are more likely to receive remittances than food insecure households. For example, 36% of CARI food secure households received at least once transfer over the past six months, versus only 22% of the severely and moderately food insecure households, and 27% of the moderately food secure households.

Lessons Learned:

- Ensure collection and analysis of the number of income sources per household
- Urban households are highly dependent on markets for income opportunities and for essential food and non-food items. It may be insightful to include specific labour market analysis, to understand available formal and informal livelihood opportunities, specific constraints to work, and any regulations impacting labour.

- As noted above, more detailed demography data, including a household roster and information on disabilities, should be collected to inform livelihoods analysis and dependency data.

5.5 Shocks

Based on preliminary qualitative data collection, a list of frequently occurring shocks was asked to all households in the survey. For each shock, the household was asked whether or not they had been affected by the specific shock within the past three months. Figure 18 displays the results.

Figure 18: Households affected by shocks
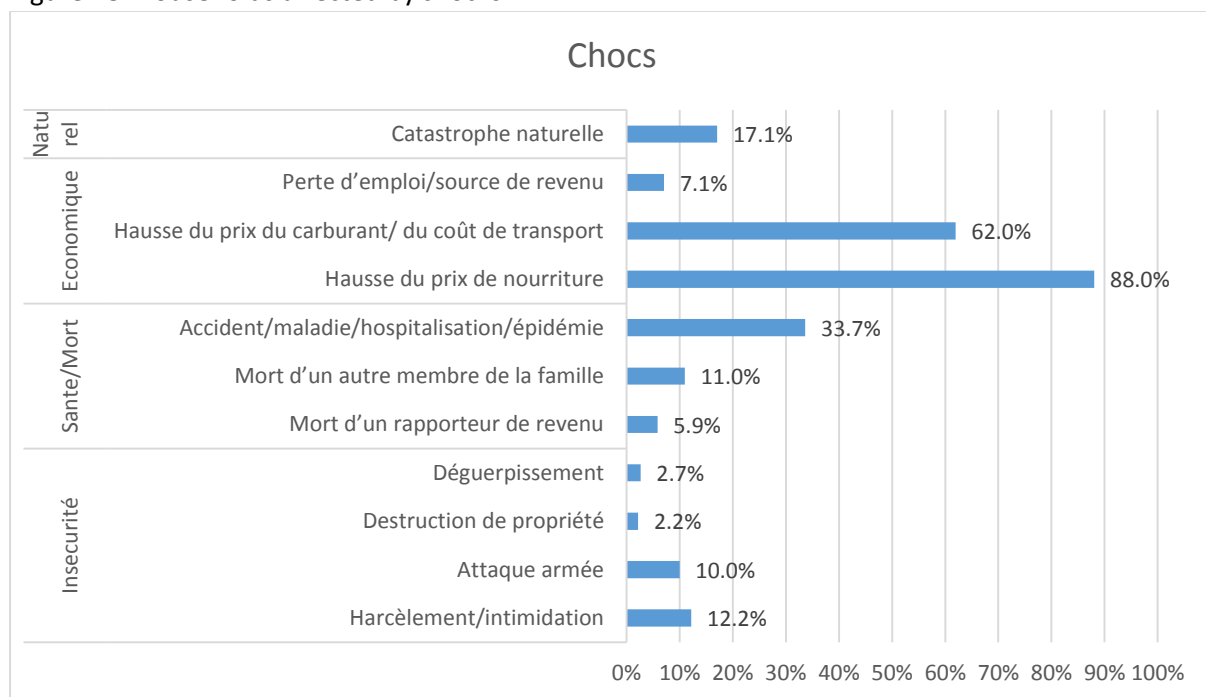
These results demonstrate that households are most affected by economic shocks, followed by accidents/health issues. Additionally, at least 1 in 10 households had been subject to armed attacks or harassment/intimidation; in urban areas where security is an issue, this type of shock information should also be collected. It should be noted that although urban households may not feel directly affected by drought (only 17% affected by natural disasters), the rise in food prices (affecting 88% of households) may actually be linked to the impact of drought.

Lessons learned: It is essential to gather a list of context specific shocks before designing the module – applying a long list of standard shocks would risk wasting time. If time constraints do not allow for qualitative data collection, this step can be done with enumerators or supervisors. In future, it may also be useful to understand the impact of specific shocks, and how these relate to food security.

5.6 Coping Strategies

Similar to the shock module, preliminary data collection asked about typically used coping strategies. This information was combined with the standard WFP coping module, to create a slightly longer list, ensuring all local coping strategies were included. Households were asked two separate modules – first, if they had used the coping strategies in the past 30 days as a result of a lack of food or money

to buy food. And second, a few additional strategies were asked related to insecurity – was the household forced to engage in these strategies as a result of insecurity in their area. Figures 19 and 20 display the results.

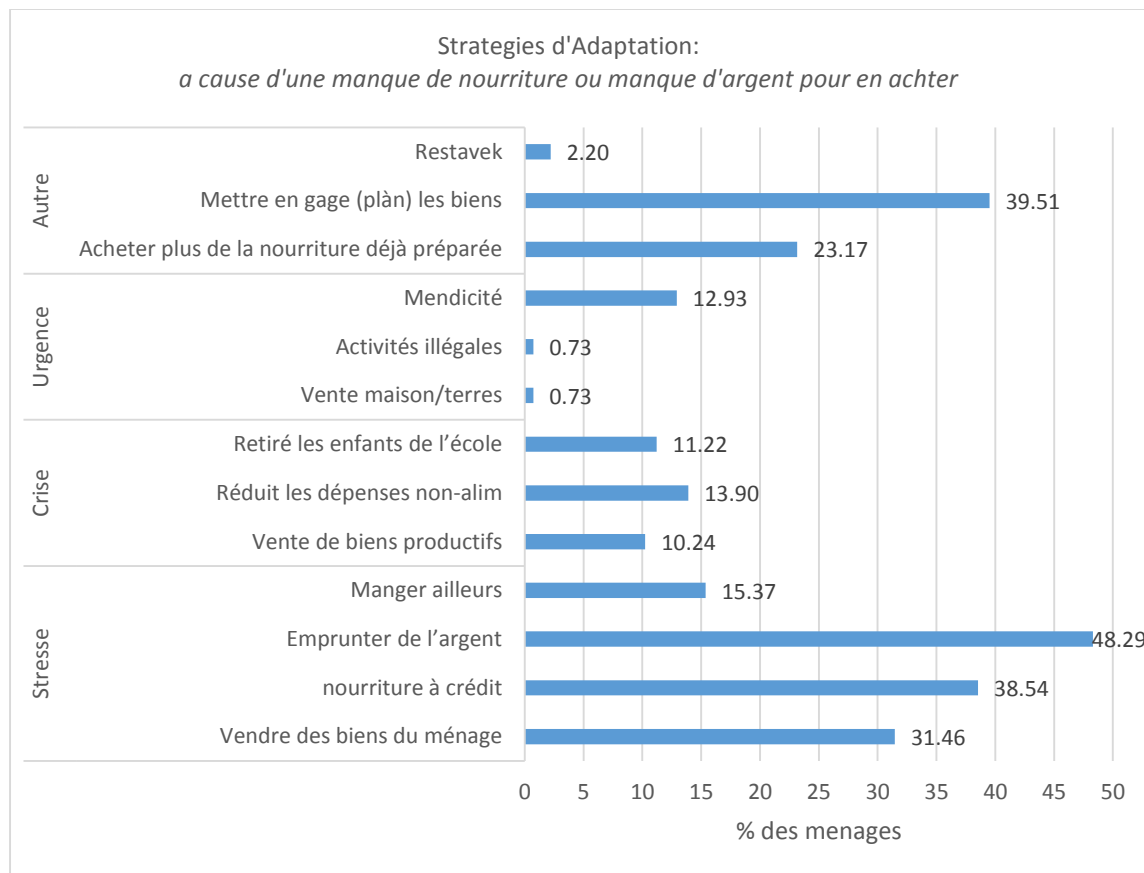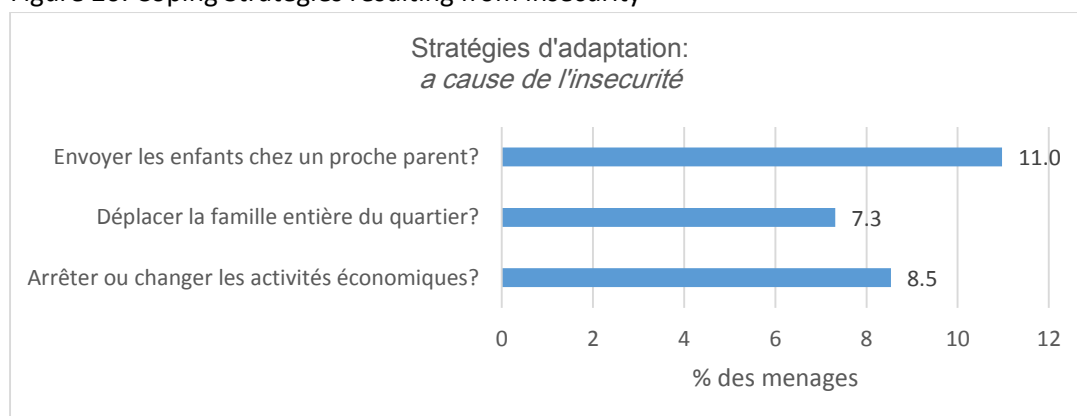Figure 19: Coping Strategies resulting from food insecurity

Strategies d'Adaptation:
a cause d'une manque de nourriture ou manque d'argent pour en achter

Category	Strategy	% des menages
Autre	Restavek	2.20
Autre	Mettre en gage (plàn) les biens	39.51
Autre	Acheter plus de la nourriture déjà préparée	23.17
Urgence	Mendicité	12.93
Urgence	Activités illégales	0.73
Urgence	Vente maison/terres	0.73
Crise	Retiré les enfants de l'école	11.22
Crise	Réduit les dépenses non-alim	13.90
Crise	Vente de biens productifs	10.24
Stresse	Manger ailleurs	15.37
Stresse	Emprunter de l'argent	48.29
Stresse	nourriture à crédit	38.54
Stresse	Vendre des biens du ménage	31.46

Figure 20: Coping Strategies resulting from insecurity

Stratégies d'adaptation:
a cause de l'insecurité

Strategy	% des menages
Envoyer les enfants chez un proche parent?	11.0
Déplacer la famille entière du quartier?	7.3
Arrêter ou changer les activités économiques?	8.5

From Figure 19, it is clear that the most frequently used coping strategies are considered stress strategies – these are reversible activities, typically without long term impact on the household. In addition to this, 40% of households reported using their assets as collateral to borrow money, which was a context specific coping strategy reported in the focus groups, and should be monitored as an

indicator of economic vulnerability. Similarly, almost a quarter of households reported buying more prepared/street food than usual, also noted within the focus groups.

While the overall frequency of insecurity related coping strategies is low, it is still quite a surprising result that over one in ten households reported sending their children to a close relative due to insecurity.

It is important to note here that the food security classification used in this report is based on standard WFP methodology, the CARI, which incorporates a standard list of coping strategies. The 'other' coping strategies included above are not incorporated into the CARI food security classification. However it is essential that this data is still collected, as context specific information can help shed additional light on the food security situation, even though it may be not be incorporated into the aggregate analysis.

In addition to livelihoods coping strategies, households were asked about consumption coping – also known as the reduced Coping Strategy Index (rCSI). Table 18 displays the frequency results – the percentage of households per number of days reported. The most commonly used consumption coping strategy is eating less expensive and less preferred foods, followed by reducing the number of meals consumed in a day, and limiting portion size. Within the coping strategies indicator manual, these are considered the less severe coping strategies, so it follows logically that they are more commonly used.

Table 18: Consumption Coping Strategies

Number of days	Less expensive/less preferred food	Borrow food	Limit portion size	Restrict adult consumption	Reduce number of meals
0 days	18.8	80.2	30.5	54.4	26.6
1-3 days	54.6	16.3	51.5	30.5	57.1
4-6 days	19.0	2.9	12.7	10.0	10.0
7 days	7.6	0.5	5.4	5.1	6.3

It is possible to create an index from this data, resulting in an rCSI score per household. However, without previous data and without standard thresholds, this number is not particularly useful. In future, this could be useful within a monitoring system to track any changes in consumption coping.

Lessons Learned:

- Conduct initial qualitative data collection to identify local coping strategies and their perceived severity. This will ensure more comprehensive coping strategy analysis.
- Future urban monitoring should follow not only coping strategies linked to food insecurity, but also to the security situation of the neighbourhood.
- The rCSI is a particularly useful indicator for tracking food insecurity – this should be included in future urban monitoring efforts.

5.7 Expenditure and Debt

All households were asked about their actual expenditure in gourdes of a detailed list of food groups and other non-food items and services. For food items, a seven day recall was used in order to

minimize recall error, given the high frequency of purchase. For non-food items and services, a 30 day recall was used.

Figure 21 displays the results of the expenditure data. The largest proportion of monthly expenditure is on food, followed by education. This links back to the education findings (see page 9), with over 10% of households withdrawing children from school for economic reasons. The third most important expenditure category is rent.

Figure 21: Average household monthly expenditure
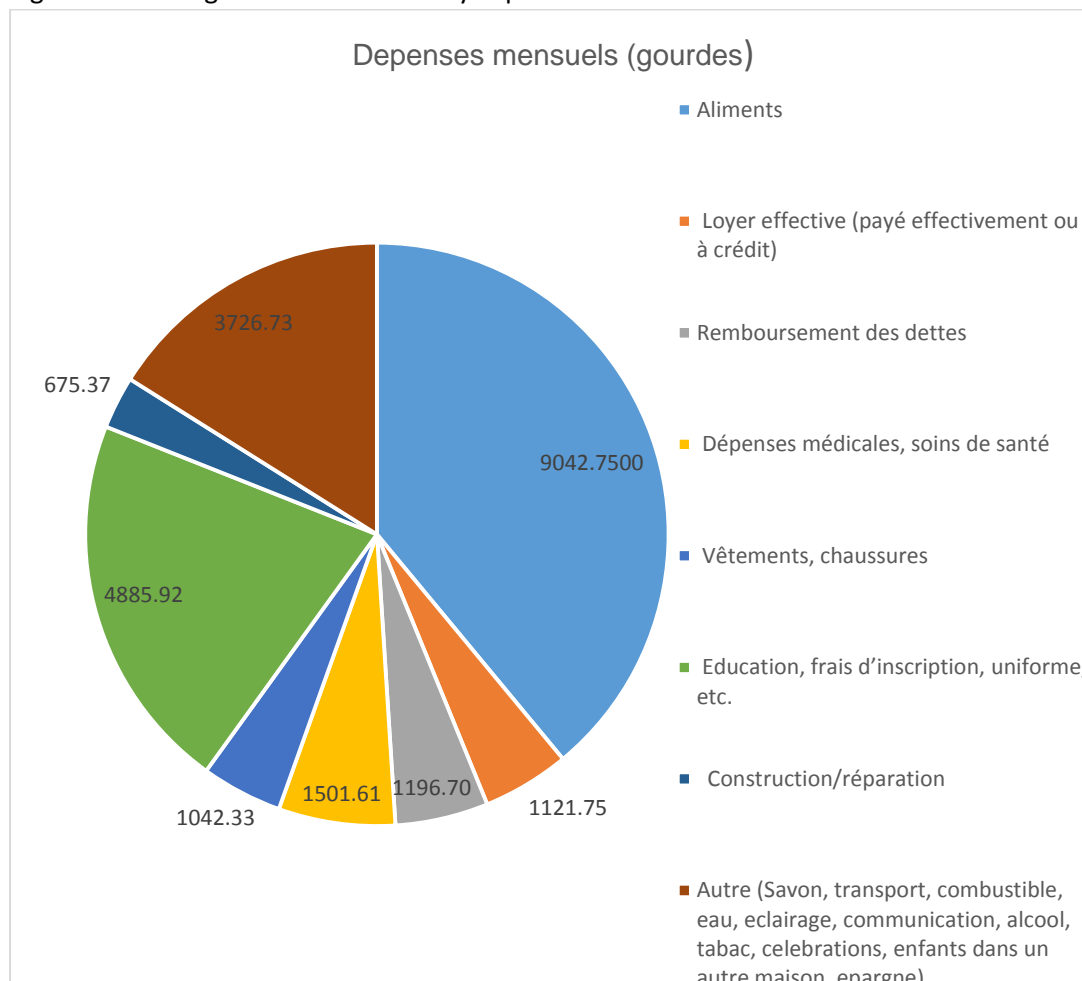
Given the high proportion of food sourced from markets, there is a clear pattern demonstrated between food consumption and food expenditure, with much higher absolute food expenditure among those with better food consumption. Households with poor food consumption spent an average of 3245 gourdes per month on food, those with borderline food consumption spent more than double that (average of 6693 gourdes), and those with acceptable food consumption spent 10,216 gourdes per month on food.
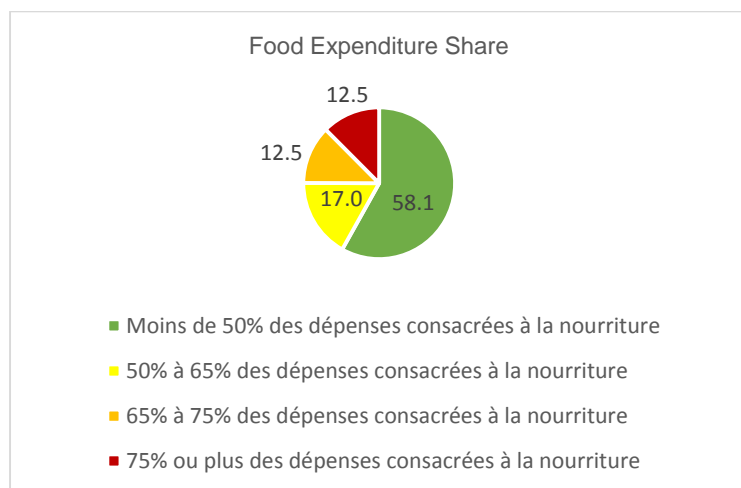
The proportion of household expenditure on food is a key indicator of economic vulnerability used within WFP. The large majority (58.1%) of sampled households spend less than 50% on food, which is not unusual in urban areas with high non-food costs. However, over 1 in 10 households spend over 75% on food – which is the most economically vulnerable category.

It should be noted that debt repayment is a key expense for almost all households – see more details below. The questionnaire did not ask what the credit was used for, so this expense cannot be classified. However, given reliance on markets for food, and many households reporting buying food

on credit, this figure, or a portion of it, may represent food costs. As such, household food expenditure could be higher than these figures suggest. Thus it would be important to future surveys to determine the primary purpose of the credit.

The thresholds used in this analysis are standard, and may need to be modified to accurately reflect urban vulnerability. Given the high non-food expenses associated with urban living (rent, utilities, transport), the thresholds may need to be lower – further research on this subject is required.

Figure 22: Household Food Expenditure Share (average)

When examining the food expenditure share by expenditure quintile, a clear pattern emerges. Following Engel's law, the data demonstrates that in comparison with poorer households, wealthier households spend a much smaller proportion of their household budget on food.

Figure 23: Household Food Expenditure Share by expenditure quintile
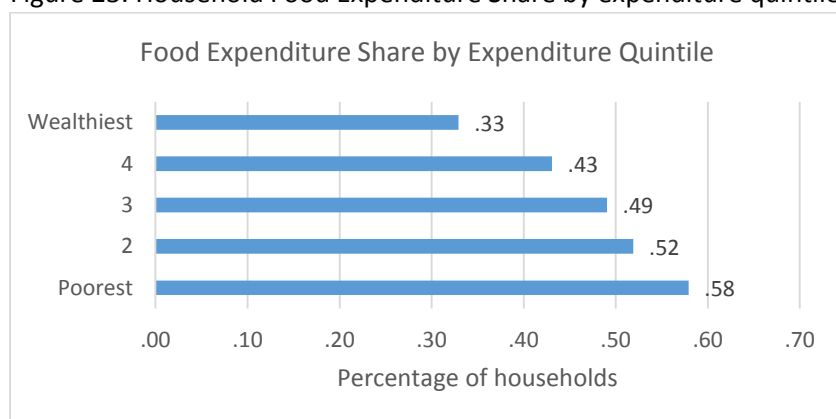
Access to credit is particularly important in urban areas, where households are heavily dependent on markets for food and non-food items. All households were asked if they had access to credit, from whom they borrowed money, and the total current amount of debt owed.

Almost 60% of households reported having some amount debt. 20% of these report accessing this credit from a vendor, and 16% report most debt coming from friends/family in Haiti. The mean amount of debt is 7,343 gourdes. This is almost one third of mean household monthly expenditure. However, this figures are more insightful when disaggregated by expenditure quintiles. Figure 24

demonstrates that the wealthier the household (as measured by expenditure), the higher the absolute amount of debt owed.

Figure 24: Debt amount by expenditure quintile
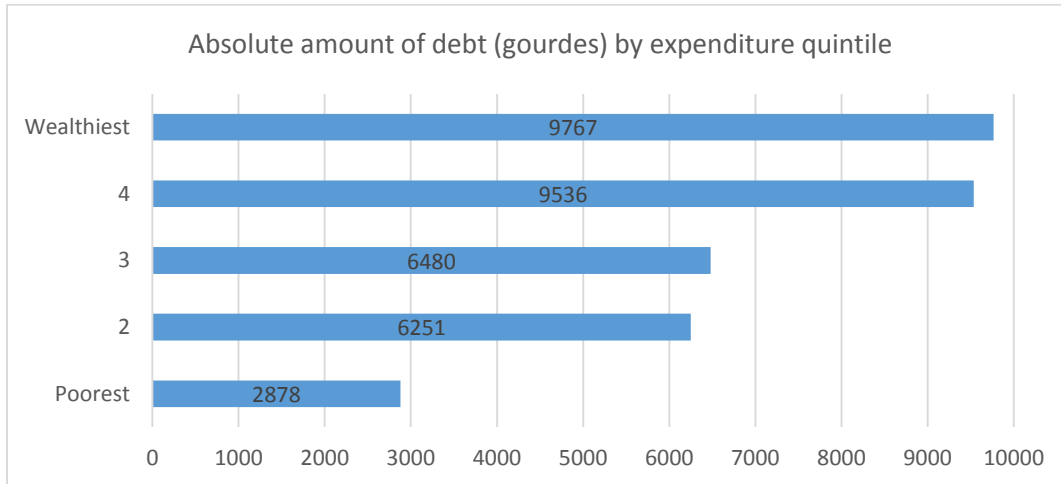
However, figure 25 shows the debt as a proportion of total monthly expenditure – i.e. how important is that absolute amount of debt in terms of the household budget? This serves as a way to quantify the significance of that debt to the household. Presented this way, the pattern is opposite; the poorer the household, the higher the proportion of debt relative to monthly household expenditure.

Figure 25: Debt as proportion of household monthly expenditure, by expenditure quintile
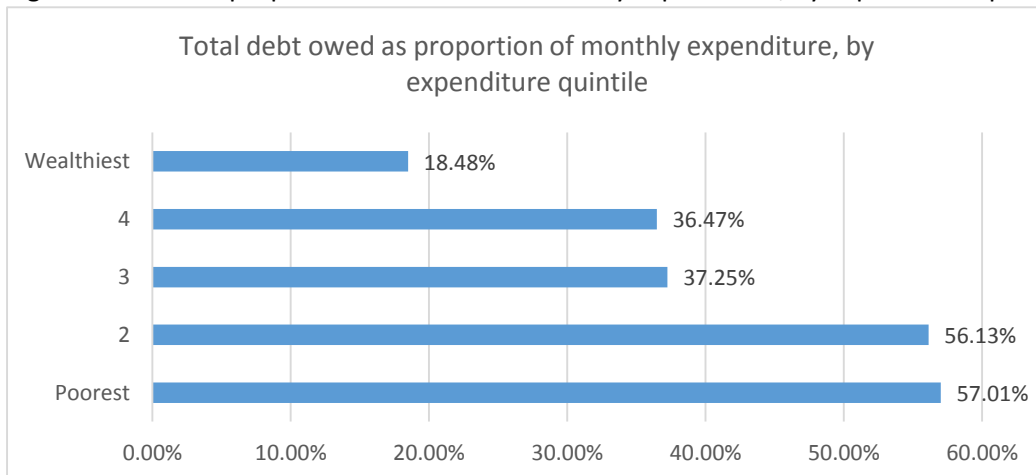
Therefore the analysis of debt shows that as a household increases monthly expenditure (sign of wealth), the absolute amount of debt increases – however the proportion this represents to the household budget is smaller. Thus although wealthier households have more debt than poorer households, the economic vulnerability associated with that debt decreases.

Lessons learned: Given the importance of credit in urban areas, future surveys should ask more detailed question about credit access and debt – in particular, the purpose of the debt. These more detailed questions can determine whether a household is better off (due to more access to credit) or worse off (due to high levels of indebtedness).

5.8 CARI Classification

The Consolidated Approach to Reporting Indicators of Food Security (CARI) is the WFP standard methodology for classifying household food security. This data must come from a single household survey, and is the result of a simple algorithm combining current consumption data (in this case, the FCS) and future coping capacity of the household (here, measured through the food expenditure share and livelihoods coping).

According to the CARI classification, the largest proportion of households in the sample are marginally food secure (43.7%). Given relatively diverse diets in urban areas, it is not unusual that a relatively high proportion of households (72%) have acceptable food consumption. Similarly, given high non-food costs in urban areas, it is not unusual that a majority (58%) of households have relatively low food expenditure share. Further research may be required on how to adapt these indicators within urban contexts – i.e. taking into consideration street food consumption, or adapting food expenditure share thresholds.
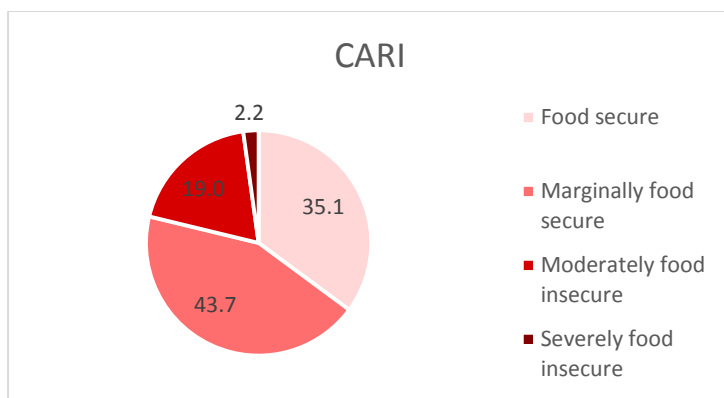
A high use of livelihoods coping strategies is driving down the overall CARI classification, which indicates limited ability to cope in future, and a potentially deteriorating situation. It should be noted here that the standard livelihoods indicator does not include some of the most commonly used strategies within this context, like using assets as collateral for loans, or buying more pre-prepared foods.

Finally, when considering the CARI results, it is concerning to note that almost 1 in 5 households are considered moderately food insecure.

Table 19: CARI Reporting Console

Domain	Indicator	Food Secure	Marginally Food Secure	Moderately Food Insecure	Severely Food Insecure
Food Consumption	Food Consumption Score	72.0 *(acceptable)*	22.7 *(borderline)*		5.4 *(poor)*
Economic Vulnerability	Food Expenditure Share	58.1 *(<50%)*	17.0 *(50-64%)*	12.5 *(65-74%)*	12.5 *(>75%)*
Asset Depletion	Livelihood Coping Strategies	37.1 *(no coping)*	28.5 *(stress coping)*	20.5 *(crisis coping)*	13.9 *(emergency coping)*
Food Security Index		**35.1**	**43.7**	**19.0**	**2.2**

Figure 26: CARI results

CARI

- Food secure — 35.1
- Marginally food secure — 43.7
- Moderately food insecure — 19.0
- Severely food insecure — 2.2

6. Lessons learned

Lessons learned have been explained and noted through the findings. This section serves to consolidate and simplify the lessons from the entire exercise.

6.1 Sampling

- Consider using available GIS data to inform an initial area based sampling exercise, allowing a focus on the most vulnerable areas. This objective information should somehow be balanced with local information and knowledge of the area – a combination of objective and subjective should inform area based targeting.
- If all areas of the survey were clearly demarcated by GPS points, with SDEs fully included or excluded, random sampling of households would be possible. Future assessments should consider a preliminary step of walking around zone with a GPS to allow for better definition of areas and then random sampling.
- Future surveys would benefit from the integration of a statistician in the team, to allow for more robust and reliable sampling design.

6.2 Logistics/Security

- Urban areas often have higher crime rates. To ensure safety of enumerators during data collection, hire enumerators who are already comfortable with the target areas – either from the neighbourhoods or have worked there previously.
- Build additional time into the scheduled to allow for flexibility in case security issues affect data collection.

6.3 Technical

- Future urban assessments should collect a household roster, including data on which household members are economically active, and any disabilities or physical limitations, and the link to the household head.
- Location of households and availability of/access to services in that area must be considered. However, access to services should not necessarily lead to conclusions around household wealth status, as this may be area based within cities – for example, availability of electricity. Use this type of information in initial area based sampling.
- Ask about the number of rooms per households in order to calculate a crowding index, which can be a useful and simple wealth proxy.

- Collect asset ownership data on a limited set of assets already established as able to distinguish between wealthier and poorer households. In this case, this should include iron, radio, fridge, computer, television and telephone. Do not collect livestock data as this does not serve this purpose – lack of livestock can be a sign of poverty or wealth.
- Collect food consumption data disaggregated enough to allow for some nutrition analysis, with a particular focus on hem iron rich foods.
- Food source data can be simplified to focus on only cash versus credit.
- Collect both diet and experiential measures of food security.
- Ensure data collection of street foods (module can be simplified), as the majority of households purchase some food outside the home.
- Ensure collection and analysis of the number of income sources per household.
- Urban households are highly dependent on markets for income opportunities and for essential food and non-food items. It may be insightful to include specific labour market analysis, to understand available formal and informal livelihood opportunities, specific constraints to work, and any regulations impacting labour.
- Use preliminary qualitative data collection to gather a list of context specific shocks and coping strategies. Coping modules should include strategies used due to food insecurity or economic vulnerability, and strategies used due to insecurity.
- Consider analysis of debt as a proportion of the household budget or expenditure, not simply the absolute amount.
- Future surveys should ask about the purpose of the debt, i.e. the primary reason the household took a loan.

7. Conclusions and Recommendations

The objectives of this case study were to 1) improve understanding of factors defining vulnerability within Port au Prince; 2) test new methods of sampling in a context with limited census data; 3) analyse standard food security indicators; 4) analyse urban livelihoods; 5) contribute to the design of the Observatoire Urbain, and 6) contribute learning to the Adapting to an Urban World project global learning.

Of these objectives, the exercise was unable to accomplish number two: testing new methods of sampling. This was partially due to a limited amount of recent spatial data/maps, and a limited timeframe. The conclusions related to the other objectives are summarised below. Note that all of these findings will contribute to the Adapting project learning (objective 6), to be incorporated into a project document synthesizing all case studies.

7.1 Factors defining vulnerability**: Given high dependence on markets for food (over 95% of all food eaten at home was purchased in markets), the poorest households, those with limited purchasing power, are also the most food insecure. The survey data allowed insight into which characteristics identify poor, food insecure households. These include:

- higher crowding index, some with over 4 people sleeping per room;
- higher dependency ratio;
- own fewer assets, for example, one in five without a telephone;
- eat less diverse diets, with very limited micronutrient intake;

- eat less street food – 60% of the poorest households reported no street food consumption at all;
- have fewer income sources – 50% of the poorest households have only one source of income;
- higher food expenditure share – the poorest households spend almost 60% of their monthly budget on food;
- higher levels of debt proportional to their monthly expenditure

The data demonstrate clear differences between diet measures and experiential measures. Many households are experiencing high levels of stress related to food, including behaviours such as not eating for a whole day, or going to bed at night hungry. This is also reflected in relatively high use of coping strategies, with over half of households borrowing money to buy food, and 40% buying food on credit. However, analysis of household diets demonstrates that almost three quarters of households have acceptable food consumption. That said, the food groups consumed are limited, with frequent consumption of cereal, pulses and oil (given that rice and beans is the main meal in Haiti), but limited diversity beyond this.

The analysis indicates that most coping strategies employed are reversible (i.e. much more sale of households assets than productive assets – 30% vs 10%). Thus most households are maintaining acceptable food intake, but managing this through borrowing and credit, using their assets as collateral.

7.2 Analysis/Adaptation of Indicators and Approaches

7.2 Analysis/Adaptation of Indicators and Approaches: A key objective of this exercise is determining which indicators and/or approaches need to be adapted for the urban context. The following is a summary of lessons, and recommendations for adaptation or future research:

- *Area based vulnerability***:** In urban contexts, the area in which a household lives dictates their access to basic services, quality of infrastructure, levels of pollution, and risk of specific hazards. These factors can vary significantly across neighbourhoods. In order to focus resources in the most vulnerable areas of a city, the first step in urban vulnerability analyses should be area based. The desk review component of the case study included a Habitat International GIS assessment of Port au Prince, providing an interesting approach which should inform urban food security assessments. Future urban assessments should include the time and expertise to conduct similar spatial analyses; this can serve as the first step in sampling, allowing a focus of time and resources in poorer, more vulnerable areas.

- *Livelihoods analysis:* In rural areas, livelihoods are often used to group households for analysis. For example, comparing food security outcomes in agricultural and pastoral households. These groupings assume similar patterns of access to food and income, and similar vulnerabilities. In urban areas, however, these groupings do not work. Firstly, most households have more than one source of income, which makes the grouping more complicated. Secondly, when considering only the primary source of income, there is huge diversity of households within that group. In general, the primary livelihood does not determine how urban households access their food, or their specific vulnerabilities. In this Port au Prince data, the range of expenditure (used here as a key proxy for wealth) within a livelihood group is enormous, indicating that one household who relies on petit commerce is not necessarily similar to another. To be accurately done in urban contexts, this kind of livelihood grouping requires more research.

Given the complexities of urban livelihoods, this may require specific labour market analysis. This could include analysing available formal and informal livelihood opportunities, constraints faced by households in accessing work, and regulations that have an impact on labour markets.

- *Food Consumption:* The data demonstrates that over half of households eat some food outside the home. As a result, measures of at home food consumption (such as the FCS) are at best inadequate. It is essential to incorporate street food consumption into food security analysis. In this case study, street food consumption of the individual respondent was disaggregated into frequency and food groups. This allowed understanding of which food groups are being consumed, and by whom. Essentially, is street food filling gaps in at home food consumption?

  The analysis determined that street food is primarily eaten by those who already have acceptable at home consumption. There is limited consumption, at home and outside home, of fruit, vegetables and dairy. Street foods may fill a gap in meat consumption, given an average of 2 days of meat consumption at home, while almost half of households eat street food meat at least once per week, including almost 20% who eat it every day.

  Further research is needed to improve measures of street food consumption. Is the street food consumption of the individual respondent a good enough proxy for the household? Or are we missing important data by asking only the person who is at home when the enumerator arrives? More detailed work on quantities and/or calories would also improve this analysis.

- *Expenditure:* The food expenditure share is a commonly used indicator of economic vulnerability. This indicator includes standard thresholds established by IFPRI,[13] the lowest of which is households spending less than half of their monthly budget on food. In this case study, almost 60% of households fall into this low category.

  Urban households have much higher non-food expenses. It could be argued that the following expenses are more of a concern for urban dwellers, as households in cities are forced to purchase all of these services/goods: rent, lighting, heating, water, and transport. When examining the Port au Prince data, the combination of these expenses represents an average of 11% of household budgets.

  Given the differences in expenditure patterns between rural and urban households, it is logical that the food expenditure share thresholds should be adjusted for urban areas. Further research is required to establish and benchmark thresholds for urban areas.

- *Debt:* Almost 60% of households in the sample have some debt. The survey did not ask what the loan was used for, but it is likely that some of the debt was incurred for food purchase – which should then be classified a food expenditure. This would contribute to a higher food expenditure share. Future assessments should ask households what category of expenditure the majority of the debt was used for, so this expense can be incorporated into the analysis.

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[13] Smith, Lisa C., and Ali Subandoro. *Measuring food security using household expenditure surveys.* Vol. 3. Intl Food Policy Res Inst, 2007.

Analysts must be careful not to assume that lower amounts of debt is an indicator of economic stability. The poorest households have less access to credit; in fact, less than 40% of the poorest households have any debt at all, versus 56% of wealthier households.

The absolute amount of debt can be a misleading figure when comparing households. Again, more debt indicates more access to credit. Amounts of debt should be analysed as proportional to household budget, in order to understand what the debt figure represents to the household. The Port au Prince data demonstrates that although wealthier households have much higher amounts of debt, it is a much smaller proportion of their monthly budget.

- *Assets:* Asset data is collected in order to differentiate between poorer and wealthier households. In this survey, data was collected on a variety of assets, but many of these were owned by almost no households – or by all households (e.g. *marmites*). Although some urban households in Port au Prince own livestock, they do not serve to differentiate between households – very poor households do not own livestock, but neither do wealthier households. The assets collected in a survey must be contextually appropriate, and serve to differentiate households.

- *Coping Strategies*: The WFP CARI approach has a master list of coping strategies from which 10 must be selected for inclusion in a survey. The master list includes a total of 18 coping strategies, however five of these are rural specific (i.e. related to agriculture, seeds, livestock, etc). To ensure assessments accurately capture the types and severity of coping strategies used, the strategies must be adapted to each context. Therefore an internal recommendation for WFP is to update the master list to include more urban appropriate strategies, allowing more appropriate modules in urban assessments.

7.3 Observatoire Urbain: The final objective of this exercise was to inform the design of the Haitian urban food security monitoring system. Based on the results and the lessons above, below is a list of recommended indicators for inclusion:

- Roof type
- Toilet type
- Crowding index
- Asset possession (Yes/No): iron, radio, fridge, computer, television and telephone
- FCS
- FCS-N
- Food Sources – cash vs credit, and type of market accessed
- Simplified street food module
- HFIAS or other experiential measure of food insecurity
- Primary source of income
- Number of income sources
- Amount of debt
- Livelihoods coping
- Consumption coping (rCSI)

All Adapting to an Urban World project reports are available on the Food Security Cluster website: http://www.foodsecuritycluster.net/

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