











EXECUTIVE SUMMARY

The 2022 Global Report on Food Crisis highlights conflict as the major driver of acute food insecurity, which forced approximately 139 million people into crisis-level acute food insecurity (IPC Phase 3 or worse¹) in 2021 (FSIN, 2022). The scale of this impact on households and communities, which is compounded by economic shocks and weather extremes, spans economic, political, social, and environmental activities, emphasizing that conflict's impacts should be considered through a food systems lens rather than the narrower outcomes of food and nutrition security alone. The 2018 United Nations Security Council Resolution 2417 recognized the link between conflict and hunger, condemning the starving of civilians as a method of warfare and the unlawful denial of humanitarian access to civilian populations (UN Press, 2018).

Overall, this research program sought to investigate the impact of conflict on various elements of the food system in Haiti to identify those with the biggest influence on food and nutrition security amongst people experiencing extreme poverty. This research systematically maps components of local and national food systems; identifies specific pressure points where conflict interacts with them; and proposes operational, policy and research actions tailored to supporting and strengthening food systems disrupted and transformed by conflict in Haiti.

A growing body of research examines the links between armed conflict, food security, and food systems. These identify the two-way relationship between food price and conflict, and the influence of excessive risks on transport, harvest, and market security costs (Raleigh et al., 2015; Weinberg & Bakker, 2015; Ismail, 2021). Others focus on how conflict reduces regional food availability by destroying productive assets and infrastructure and creates security risks associated with

accessing food markets thus driving up local prices (Bora et al., 2010; Kah, 2017). However, disentangling existing structural challenges – e.g., input supply disruptions, seasonal price volatility, or investment risk aversion – from those caused by conflict, particularly in places where armed violence is a constant in everyday life, can be difficult and a precise understanding of the specific ways conflict interacts with food systems in many contexts remains elusive.

In Haiti, in the wake of the assassination of President Jovenel Moïse in July 2021, the following year brought surging gang violence across the country and gang control of more than half of neighborhoods in and around Port-au-Prince. With no clear path to a resolution, food price inflation, surging cholera cases, and acute childhood malnutrition combined to leave most Haitians in crisis-level acute food insecurity conditions, per the IPC (FEWS NET, 2022b). Threats to humanitarian programs, such as the looting of food stocks, divert food assistance and reduce disaster preparedness in a country prone to natural disasters. Other basics like fuel and water supplies have also run dangerously low. Even when agricultural production, market access, and the overall food supply have ostensibly fulfilled consumption requirements in Haiti, criminal activity and disruptions by armed gangs have shaped both national infrastructure and household behaviors.

Subsequently, internal displacement has been a direct result of gang violence as well as a downstream effect as households try to cope with extensive livelihood losses (IOM, 2022; 2023). Gender differences and gender roles further pervade the food system and create undue risks and vulnerabilities for women (Kellum et al., 2022).

In seeking to investigate the impact of conflict on various elements of the food system to identify those with the biggest influence on food and nutrition security amongst people experiencing extreme poverty, this research poses the following question about the Haitian food system:

The Integrated Food Security Phase Classification system (IPC) is a system for estimating the severity of food insecurity. Acute food insecurity is measured on a scale from Phase 1 (None/Minimal) to Phase 5 (Crisis/Famine). Estimates of the number of people in Phase 3 (Crisis) or above, are widely used as a measure of the scale of humanitarian need and the urgency of required response. For further information, see IPC, 2022

 How does conflict and violence create and disrupt the rural to urban value chain for food and how do women navigate this chain from farm to table?

To address this question, this research utilizes a mixed-methods design, employing a combination of secondary evidence mapping, qualitative consultations, and quantitative data-gathering through surveys. Together, the data generated were mapped in the form of Fuzzy Cognitive Maps (FCMs). This data can then be mapped to visualize and document multiple components of complex systems and their interactions; assess the respective direction, connectedness and influence of different components and relationships; and develop scenarios based on changes in complex systems that take account of multiple potential interactions and feedback loops.

The research finds that, in Haiti, conflict has a negative impact on the food system throughout the value chain from rural production to urban consumption in three key ways:

First, by **severely compromising mobility through** insecurity, roadblocks, and taxation, handicapping the flow of goods and capital. Roadblocks – instituted both by non-state armed groups and by state actors as security measures in response to armed group activities - and related disruptions to mobility are central components affecting how the Haitian food system functions. Their impacts accumulate throughout the food system in various ways, including a) decreased food availability by disincentivizing production and restricting the movement of goods; b) diminished food accessibility from increased transport and production costs transmitted to consumers in higher prices; and c) poor food consumption indirectly by driving food spoilage, and forcing households to depend to a greater extent on smaller local markets with more limited selection and often, nutritionally inferior food. Armed groups may also impose taxes at every stage of the food system from production to processing to transport and trade. This burden combined with taxes from the government can add up to make food system activities prohibitively expensive or significantly diminish returns and ultimately degrade local food systems.

Second, by broadly impacting women that play a vital role in the food system, especially Madan Saras, but also others, leading to less food availability and market activity. Small vendors are often women, and they face a combination of targeted violence, rising food prices, and the inability to obtain food to sell. Conflict also can result in women being forced to stop trading due to reduced movement of both food and people. Mobility restrictions prevent women from being able to work and carry out their trade as key intermediaries in the food system. Women may need to be accompanied when they leave the home during times of conflict, which often leaves them isolated at home and lacking many freedoms. This loss of mobility has a compounding effect, particularly on women-headed households, as they are unable to obtain work or food, face reduced incomes and the inability to support their families, and experience greater vulnerability. Consequently, women can further be drawn towards supporting gangs, driven by the need for women to seek protection and security.

Third, by pushing food system actors into maladaptive coping strategies that degrade the local food system and incentivize food imports. The research highlights how food and livelihood systems are transformed by conflict into maladaptive states that undermine endogenous food systems and food security. Conflict initiates maladaptive cascades – a combination of mutually reinforcing, negative coping strategies that have cumulative consequences. These maladaptive cascades initiated by conflict lead to pathways that diminish, degrade, or disable local food systems. Often, the coping strategy used to deal with conflict navigates people into behavior that disrupts the food system in the medium to long term, by reducing local food production, availability, and access. In Haiti, the economic fabric of neighborhoods experiencing conflict has crumbled. An increase in violence and decrease in sales has led vendors to renew their stock less often and to stock food products of lower quality that are more accessible to consumers. As producers have less access to large-scale markets, they must sell directly to consumers or find alternative small-scale provincial vendors, which often means they must accept lower prices and receive less income. As a result, producers face greater food losses and are less

able to invest in their operations. This situation reduces production in the next season and has forced some producers to abandon the agricultural sector altogether. As large markets shut down and household mobility is further restricted by intense violence, food purchases are increasingly limited to hyperlocal markets that do not provide the same dietary diversity and offer higher prices to consumers. Broadly speaking, consumers are seeking to limit their travel for safety reasons and locate the lowest cost options to feed themselves. These factors can further increase the reliance on imported food and food assistance, which undermines local systems.

Based on these findings, the report makes six recommendations for those working to support and strengthen the Haitian food system:

- Support nutrition-sensitive activities in secondary and tertiary markets. Considering profound mobility restrictions in Haiti's food system, supporting access to more nutritious foods to be sold in smaller local markets could have positive effects throughout the food system.
- 2. Design targeted protection interventions that support vulnerable stakeholders in the food system. Providing targeted protection services for vulnerable stakeholders in the food system particularly women is both an important service for at-risk populations, and an intervention with the potential to mitigate disruptions in the food system.
- 3. Target women food system stakeholders for engagement in social cohesion activities. Supporting the targeted engagement of women food systems stakeholders in social cohesion, peacebuilding and broader community empowerment activities could help ensure their unique perspective and experience is considered in conflict resolution efforts, and moreover, could serve to amplify food system stakeholder protection programming efforts.

- 4. Pursue humanitarian assistance strategies that support local food systems and minimize negative externalities. The humanitarian community, including donors, must take a conflict-sensitive approach to understand not only how conflict and food security exist in relationship with one another but also how specific humanitarian strategies related to food assistance can reinforce the maladaptive transformations described above.
- 5. Pursue humanitarian relationships and diplomacy that understand and respond to the relationship between political dynamics, conflict dynamics and food insecurity.

 Conflict in Haiti has a known relationship with political dynamics. This awareness should lead to advocacy at national and international levels for political resolution and peace-building efforts to avoid reinforcing certain elements that are invested in the food import business that exacerbate a degradation of local food systems.
- 6. Pursue protection agenda and associated advocacy around cumulative impacts of taxation and mobility barriers (e.g. roadblocks). Political actors within Haiti primarily, and in the wider international system secondarily, have an important role to play in protecting food systems stakeholders. Targeted advocacy efforts can make an important contribution by first, raising awareness of the extent to which roadblocks and attacks on food systems stakeholders affect food security for the most vulnerable; and second, calling for policy action to better protect food systems stakeholders.

1.INTRODUCTION

In the wake of the assassination of President Jovenel Moïse in July 2021, the following year brought surging gang violence across Haiti and gang control of more than half of neighborhoods in and around Port-au-Prince (see section 3.2 Conflict analysis). With no clear path forward for dealing with general insecurity, food price inflation, surging cholera cases, and acute childhood malnutrition, most Haitians have been left in crisis-level acute food insecurity conditions, per the IPC (FEWS NET, 2022b). In particular, gang violence and consumption deficits in the commune of Cité Soleil have created a food emergency whose resolution depends on a break in the fighting. Threats to humanitarian programs, such as the looting of food stocks, further divert needed food assistance and reduce disaster preparedness in a country prone to natural disasters. Other basics like fuel and water supplies have also run dangerously low.

In 2018, the United Nations Security Council (UNSC) took up the issue of conflict-induced food insecurity and famine and starvation of civilians as a method of warfare, adopting Resolution 2417, which formally condemned such violations and called on parties to conflict to uphold their obligations to provide safe and unimpeded humanitarian access to civilian populations (UN Press, 2018). This view of the relationship between conflict and food insecurity as a simply humanitarian issue, however, overlooks all of the food system disruptions, lost livelihoods, mass displacement, and psychological terror that fundamentally change how people feed themselves. The scale of this impact on households and communities, which compounds with economic shocks and weather extremes, spans economic, political, social, and environmental activities, emphasizing that conflict should be considered through a food systems lens rather than the narrower outcomes of food and nutrition security.

Therefore, the international response in fragile contexts is not just about facilitating change through individuals, but it must understand, stabilize, and support the functioning of food systems as a whole. It is also essential to recognize how different types of

conflict and violence produce different outcomes and how conflict variably affects the many different parts of a food system with which different households may engage.

Conflict as a key driver of food system dynamics, particularly how chronic and acute violence affect the ability of people experiencing poverty and vulnerability to access and utilize food, is not adequately understood by researchers and humanitarians alike. Researchers, governments, and non-governmental organizations have looked in depth at food insecurity, famine conditions, and human suffering as a result of conflict and even worked to develop early warning systems to help agencies plan for and respond to humanitarian crises; however, much of this analysis happens after the fact or analysis of the conflict factors is missing altogether.

This research fills a gap that has yet to systematically consider and incorporate the consequences of conflict into food system assistance and development by using available data from existing studies on conflict and food security, as well as novel interview, focus group, and survey data, to model the relationship between the elements in these systems. The practical significance of this approach lies in the possibility of improving decision-making by inputting country-specific data gathered from crisis response, development planning, and other current programming activities to optimize the food system model and forecast degrees of food system disruption due to conflict.

This research program investigates the impact of conflict on various elements of the food system in Haiti to identify those with the biggest influence on food and nutrition security amongst people experiencing extreme poverty.

2. OPERATING CONTEXT - HAITI

2.1. FOOD SYSTEM OVERVIEW

Even when food imports, agricultural production, market access, and the overall food supply have better (though not entirely) fulfilled consumption requirements in Haiti, protests, criminal activity, and disruptions by the multitude of armed gangs have shaped both national institutions and household coping strategies for many years (Taft-Morales, 2020; WFP, 2021). Underlying conflict across the country means "normal" activities within the food system have had to account for encumbered access, higher costs, and fewer options. In 2022, markets could be paralyzed suddenly by armed gang seizures, while targeted attacks and blockades of main roads and ports mean the flow of basic goods is no longer guaranteed (ICG, 2022). General fear, poor access to services, and lack of local mobility further drive grievances against the government. Furthermore, internal displacement as a direct result of gang violence, as well as an indirect effect as households try to cope with extensive livelihood losses, has become an increasing problem. Over 150,000 people were displaced in the Port-au-Prince metro area alone as of November 2022 (IOM, 2022; 2023).

Gender differences and gender roles pervade the Haitian food system and create undue risks and vulnerabilities for women amid the conflict (Kellum et al., 2022). For example, women face disproportionate barriers to accessing formal institutions like livestock markets and often perform informal work to procure foodstuff and offset income losses that may occur due to violence. Data shows that within households, women and girls also receive lower food rations than their male counterparts (Plan International, 2022). Amid the current crisis, some girls have been forced to engage in sexual activities to access food or money, also known as survival sex. Additionally, children have generally faced more vulnerability to hunger, particularly as they have been unable to attend school, have taken on domestic chores, and have been left alone by parents searching for economic opportunities.

Experts do not yet have a good grasp on how to identify

these slower onset food emergencies in ostensibly peaceful countries or how to respond to the so-called invisible victims of violent crime, gang violence, brutality by state enforcement bodies, and intimate partner violence, who may suffer from hunger in silence (de Waal, 2015). Moreover, we have a generally weak grasp of the food systems in high-density areas of large cities (i.e., slums), the spatial layout of their food networks and markets for common goods, and the effects that disruptions like conflict can have on these urban areas (Kimani-Murage et al., 2014). Notably, the current body of research shows that few Haitian studies have evaluated the effect of food insecurity on malnutrition in urban populations, despite its high prevalence (Rasul et al., 2022). Particularly in a country that has suffered from chronic humanitarian need, a focus on bringing together conflict, humanitarian, and food security knowledge is essential to filling systemic gaps that have long plagued Haiti.

2.2. CONFLICT ANALYSIS

2.2.1. LOCAL AND NATIONAL CONFLICT DYNAMICS

Haiti has been experiencing a long-lasting period of political instability following the assassination of President Jovenel Moïse on the 7th of July 2021 and the repeated postponement of elections under the current interim government led by the acting President and Prime Minister Henry Ariel. The restoration of democratic institutions and the transition to a more inclusive elected government continues to be characterized by rivalries among political factions – notwithstanding the Montana Accord signed in August 2021 – and recurrent anti-government mobilisations across the country (ICG, 2021; Abi-Habib and Kitroeff, 2022; Thomas and Ellsworth, 2022).

The current political vacuum has led to a rapid and unprecedented resurgence of gang violence and criminal activities in urban areas and to the further deterioration of security, especially in the capital Portau-Prince (Abi-Habib and Paultre, 2022). This

Since 2018, the sharp increase in the prices of food and basic goods as well as the absence of concrete policies to counter Haiti's economic crisis and expanding insecurity have combined to generate recurrent waves of national protests that have been met with harsh repression from state authorities to date.

2.2.2. URBAN VIOLENCE AND BAZ GROUPS

According to recent estimates, there are approximately 177 gangs in Haiti, and 95 in the metropolitan area of the capital Port-au-Prince alone (Insecurity Insight, 2021b; Olivier, 2021). In June 2021, these groups already controlled approximately 60% of the territory of the country; the areas under their control are likely to have further increased since then (Insecurity Insight, 2021b). In Haiti, gangs operate mostly in urban centers, with strong bases in slums and marginalized neighborhoods, where there is a high incidence of socio-economic inequalities. (Olivier, 2021).

At present, the largest and most powerful gang in Portau-Prince is the G9 group, a strategic coalition of nine of the most influential gangs of the capital formed in 2020. After Moïse's killing in July 2021, the G9 has re-oriented its strategy from acting as a political ally of the administration, to now directly challenging the current political class in order to assert its relevance in the ongoing power struggle to form a new government (Saffon and Asmann, 2021).

The fastest growing gang is one of the main rivals of the G9, the 400 Mawozo group formed in 2016 and rapidly expanding since 2018 (Saffon, 2021; InSight Crime, 2022). For the 400 Mawozo gang, too, close ties with local politicians have been crucial for the consolidation of its large territorial control. The group is primarily involved in profitable criminal activities such as collective kidnapping, extortion of businesses, and transnational criminal economies revolving around the illicit trafficking of arms, drugs, and people (InSight Crime, 2022).

2.2.3. CONFLICT TACTICS AND RECENT TRENDS

Since the killing of President Moïse in July 2021, Haiti has been experiencing an unprecedented intensification of gang violence and an expansion of gang power, especially in the metropolitan area of Portau-Prince. This has led to a rapid deterioration of the security situation as well as a further exacerbation of social unrest across the country.

In their territories, gangs control the flow of humanitarian and logistical supplies as well as access for the local population to public services (e.g. water, electricity), markets, jobs, and businesses in local neighborhoods (RNDDH, 2018, 2019, 2020a; FJKL, 2020; Kivland, 2020; Olivier, 2021; Wyss, 2021). Moreover, they play a role in coordinating the activities of local associations and NGOs connected with international NGOs and humanitarian agencies (Schuberth, 2017; Olivier, 2021).

By controlling key routes of transit, critical infrastructures, and sites of production, gangs have the ability to influence the movement of food, humanitarian assistance, and goods between different regions of the country; between urban and rural areas, and between Haiti and the Dominican Republic (Held and Dalby, 2021; Insecurity Insight, 2021b; Olivier, 2021; Wilson, 2021; Wyss, 2021; Saffon, 2022). This can also lead to the paralysis of economic activities and the health sector (OCHA, 2022a).

As part of their criminal activities, gangs also target infrastructures and production sites of strategic economic importance for the movement and distribution of food and humanitarian supplies through attacks and roadblocks. These are primarily ports, fuel terminals, key transport routes connected to the capital, warehouses of food and humanitarian supplies, industries, police stations, markets, and business areas (Insecurity Insight, 2021b, 2021a; Wilson, 2021; RNDDH, 2022b; Saffon, 2022).

In the last years, there has been an increase in episodes of violence against civilians, who are targeted in direct attacks – e.g., for supporting anti-government positions during Moïse's term (FJKL, 2020) – killed and injured in crossfire (Pellegrini, 2022) or victims

of sexual and gender-based violence (SGBV) (Mistler-Ferguson, 2022). Violent actions also involve targeted killings of rivals, armed attacks on houses, hospitals, business areas/economic activities, and police stations (also for looting arms and weapons) (CARDH, 2021; Insecurity Insight, 2021b; DGPC and OCHA, 2022).

2.2.4. THE IMPACTS OF CONFLICT ON WOMEN AND GIRLS

As per the latest estimates by OCHA, among the 43% of the population experiencing acute food insecurity in Haiti, women represent the 58.1%due to multiple and often intersecting vulnerabilities emerging primarily from the further deterioration of the security conditions in the country as well as frequent natural disasters (OCHA, 2022a). The most vulnerable among this group include pregnant and lactating women, single mothers, victims of violence or at risk of violence, sex workers, and women living in isolated areas or with disabilities (OCHA, 2022a). Additionally, women in Haiti often have a low level of education.

In recent years, the increase in episodes of violence linked to both socio-political unrest and gang activities has been particularly prominent in urban and semi-urban centers of the country, especially in the metropolitan area of Port-au-Prince. Recent studies have highlighted how women and girls living in urban settings characterized by high levels of violence and insecurity – such as the Haitian capital Port-au-Prince – are more affected than men in many aspects of their day-to-day life, especially women and girls belonging to socio-economically disadvantaged groups living in slums and impoverished neighborhoods (Maclin et al., 2020, 2022).

Gang control over these areas makes violence and fear a pervasive reality for residents, who have no other option than to develop coping strategies to minimize the risks involved in living in dangerous environments (Maclin et al., 2020). In this regard, the strategy of limiting travel and mobility can exert major costs on women, especially in terms of reduced opportunities to earn livelihoods and access to sources of income (Maclin et al., 2020). This makes women even more invisible in the job market (both formal and informal)

and in public spaces; it further complicates their possibility of providing for their families in a context where resources are already scarce, and it makes women and girls more dependent on men in their family.

Moreover, by restricting their movements within their immediate localities due to street violence or fear of attacks, women in Haiti have reported to incur in higher expenses for buying food and basic commodities in local markets, where variety is limited and prices are higher (Maclin et al., 2020). This is particularly disadvantageous for women since their earnings are small and it is even more challenging for femaleheaded households, which represent 45% of the total as per 2020 data (OCHA, 2022a).

As documented in a 2017 report by Médecins Sans Frontières, SGBV against women and girls, especially rape, is a rampant problem in Haiti (MSF, 2017). The phenomenon, which is pervasive in Port-au-Prince neighborhoods under gang control (MSF, 2017; OCHA, 2022a), increased significantly in 2021 (+400) in comparison to the incidents of SGBV recorded in 2020 (OCHA, 2022a). Conflict is one of the major causes of SGBV in Haiti even though these cases remain largely unreported (Dozin, 2022; OCHA, 2022a). The escalation of gang violence and insecurity in the last years is a key contributing factor to this increase.

3. RESULTS

A full description of the methods used in this research, including all research and data collection tools, can be found in the Synthesis Report.

the most influential variables, as well as potential gaps in our understanding of system connectivity.

3.1. FCM MAPPING

Figure 1 visualizes the Fuzzy Cognitive Map (FCM) for conflict and the food system in Haiti.

Each box represents a component (node) in the system, connected to other components through directional relationships (edges) represented by arrows. Blue arrows represent positive relationships (when one component increases, it is associated with an increase in the other component to which it points) while brown arrows represent negative relationships (when one component increases, it is associated with a decrease in the other component to which it points). The direction of the arrow represents the component driving the change (the independent variable). Although not visually represented in the maps below, each relationship (edge) is also weighted according to the relative importance of that relationship (the relative importance of the independent variable, driving change in the dependent variable).

Two centrality measures - degree centrality and eigencentrality - mapped the contours of these relationships. Degree centrality counts the number of degrees between nodes in a network, showing which node has the most interconnections. Eigencentrality (or eigenvector centrality) creates a relative score of each node's influence in the network by capturing the importance of a node relative to the importance of the nodes to which it connects, and the nodes to which they connect, and so forth. In other words, while high degree centrality reflects more connections between a given node and others in the network, high eigencentrality highlights the connections between a given node and other highly connected nodes compared to all other nodes. These two indicators help translate relationships into simpler terms and reveal

3.1.1. MOST-CONNECTED COMPONENTS

The Haiti FCM map has a density score of 0.058. It has a total of 50 components (nodes) overall, linked by 136 connections (edges) across the network. Main market activity (17 connections), armed conflict (16), movement of goods and food prices (both 12) are the top most-connected (central) components in the system. Table I summarizes the top 10 most central components in the system.

Table I. Top Most Connected (Central) Components in the Haiti Food System FCM

Rank	Component	Number of Connections (Centrality)	Influence of Connections (Eigencentrality)
1	Main market activity	17	1
2	Armed conflict	16	0.92
3	Movement of goods	12	0.77
	Food prices	12	0.54
5	Food availability	11	0.64
	Income	11	0.51
7	Abandon food system livelihood	10	0.55
	Mobility outside the home (women consumers)	10	0.42
9	Trader/Producer debt	8	0.37
	Roadblocks	8	0.53
	Agricultural production	8	0.44

Armed group control (main and mid-level markets) State security measures Attacks on transport and supply routes Predation, theft and banditry (Criminal activity) Taxation by armed groups Madam Sara victimization 1 + 600 ĎO. Small shops/ Womer Transport costs vegetables 0 Secondary sale of food Local level trade/decrease diversity markets (urban) W ď Rising Ag input prices (fuel, etc.) debt ø Attacks on food stores and warehouses Abandon food system livelihood Pillaging of harvests Access to mid-level markets (construction/taxi Alternative labor Ð Food provision by armed groups Women working outside the formal sector Young women seeking external support MINI Mobility outside the home (women consumers) Aid dependence Access to basic services Dry cereal stores Food security (composite) Impact of aid Food prices • Food rationing Health

Figure 1. Fuzzy Cognitive Map of Conflict and Food Systems in Hai

influential (eigencentral) factors. This highlights the strong influence that these factors have on the Haiti food system. The top three most central factors, Main Market Activity, Armed Conflict, and Movement of Goods (Table I) were also identified as the top three most

Figures 2a and 2b isolate the many factors directly linked to Main Market Activities in the Haiti food system map.

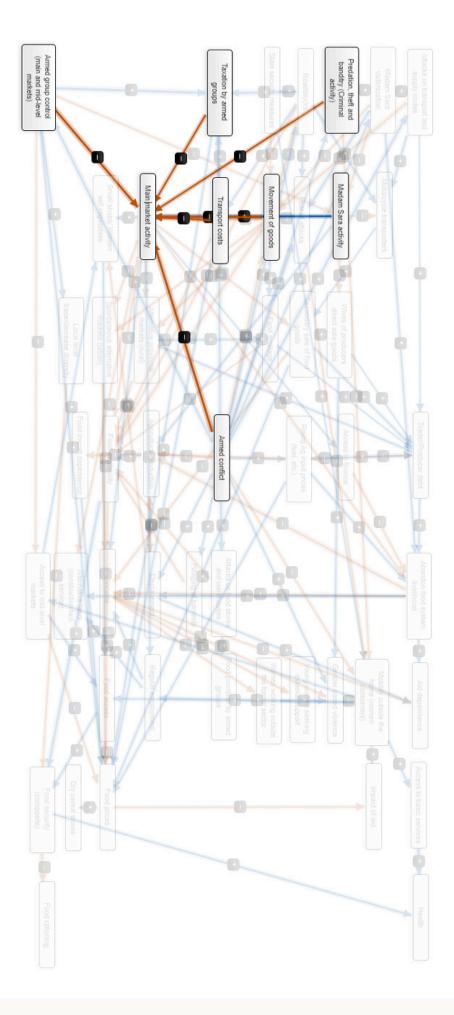
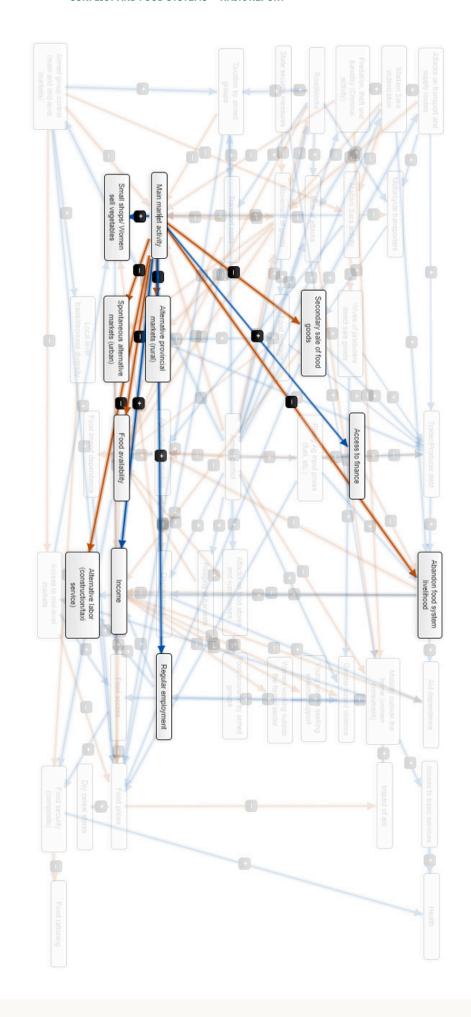


Figure 2a. Fuzzy Cognitive Map of Conflict and Food Systems in Haiti - Impacts on Main Market Activity Highlighted

Figure 2b. Fuzzy Cognitive Map of Conflict and Food Systems in Haiti - Main Market Activity Impacts Highlighted



Figures 3a and 3b isolate the many factors directly linked to Movement of Goods in the Haiti food system map.

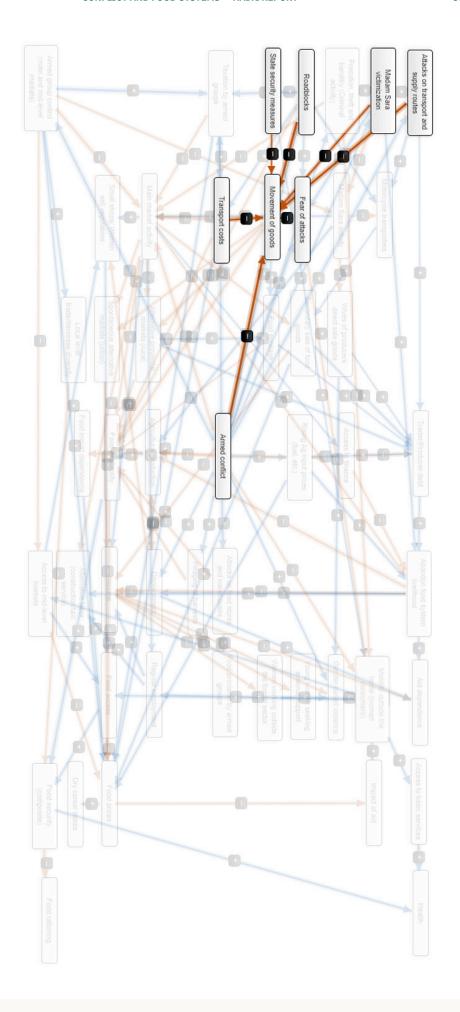


Figure 3a. Fuzzy Cognitive Map of Conflict and Food Systems in Haiti - Impacts on Movement of Goods Highlighted

Main market activity Alternative provincial markets (rural) Food spoilage

Figure 3b. Fuzzy Cognitive Map of Conflict and Food Systems in Haiti - Movement of Goods Impacts Highlighted

Overall, eight factors (Main Market Activity, Armed Conflict, Movement of Goods, Food Availability, Abandonment of Food System Livelihood, Food Prices, Roadblocks, and Income) appeared in the top ten for both most central and most influential (eigencentral) factors. However, Transport Costs and Taxation by Armed Groups were both ranked in the top 10 for eigencentral factors but not for centrality factors.

Notably, Trader/Proder Debt and Agricultural Production both rank within the top 10 of central factors but rank relatively lower for eigencentrality (see Table I). This discrepancy may have important programmatic implications, demonstrating the importance of these factors but the lack of connectivity to other influential factors.

3.1.2. SCENARIOS

In addition to visualizing and weighting the relative importance of factors in the Haiti food system, the FCM approach also facilitates an analysis of scenarios if specific factors were increased or reduced by a certain amount.

For instance, a scenario which sees a reduction of 20% in conflict has widespread and significant impacts across the food system (see Figure 4). Among the most notable of these are increases in access to mid-level markets and mobility for women outside the home (both increased by 14%), and reductions in taxation by armed groups, fear of attacks and displacement (all reduced by 17%).

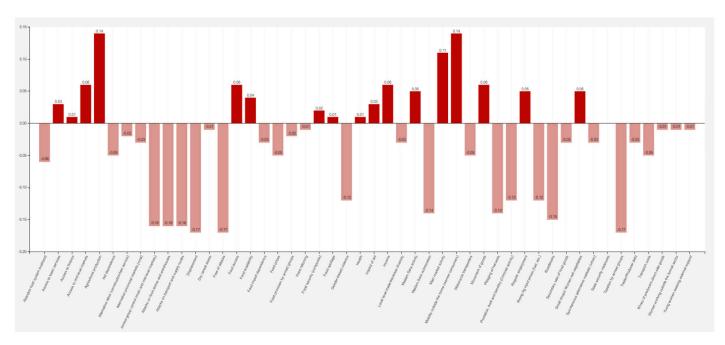


Figure 4. Fuzzy Cognitive Map of Haiti Food System Scenario: Impacts of Reduction of Conflict by 20%

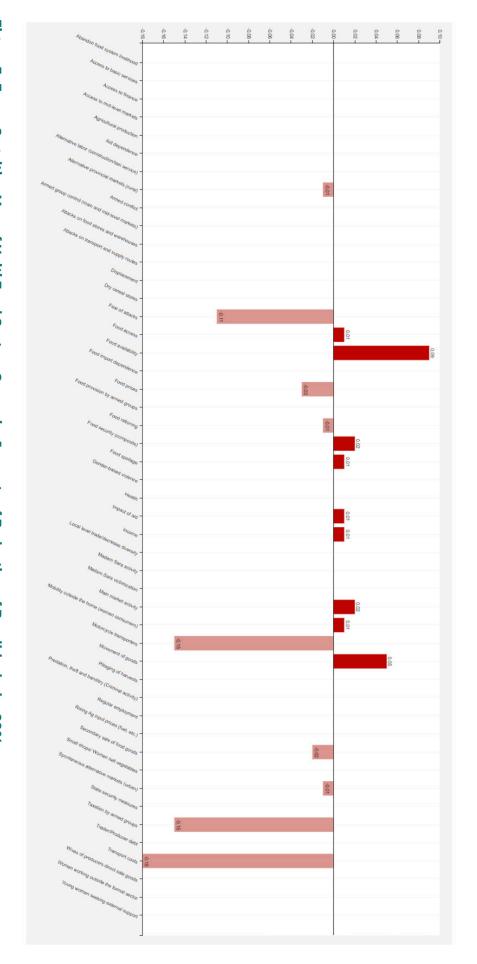
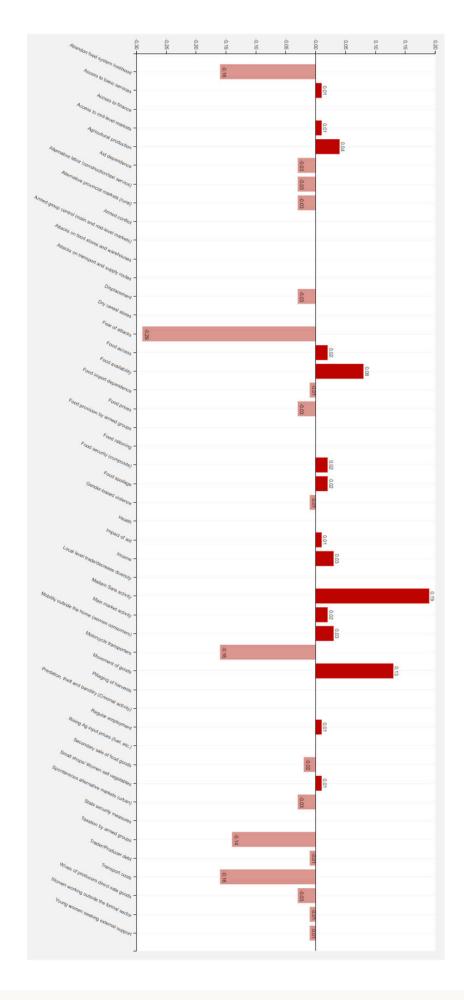


Figure 5. Fuzzy Cognitive Map of Haiti Food System Scenario: Impacts of Reduction of Roadblocks by 20%

declines in fear of attacks (-29%), abandonment of food system livelihoods (-16%) and transport costs (-16%) among others. have even wider impacts across the food system (see Figure 6). These include an increase (19%) in Madan Sara activity and movement of goods (13%), and When a reduction in roadblocks, however, is combined with a decrease in attacks on Madan Saras¹ specifically, the cumulative mobility and gender impacts

Figure 6. Fuzzy Cognitive Map of Haiti Food System Scenario: Impacts of Reduction of Roadblocks and Madan Sara Victimization by 20%



3.2. SURVEY TRIANGULATION

3.2.1. MOST-AFFECTED FACTORS

Overall, approximately one-in-six respondents (16.4%) reported that, of the various impacts listed, conflict *most* affects (*Affected Most*), sale of household assets; followed by grazing or livestock activity (12.7%); planting and harvesting activity (12.5%); migration (8.8%) and forced displacement (7.8%). Other factors received considerably fewer responses at 6.4% and below.

When disaggregated, several key areas of convergence are apparent. Of the top five factors respondents

identified as most affected by conflict, four were common across both male and female respondents, although exact percentages and ranking varied to some degree (see Table II). These four were planting or harvesting activities (18.8% male respondents, 11.5% female respondents); grazing or livestock activities (14.3% male respondents, 12.4% female respondents); migration (12.8% male respondents, 8.1% female respondents); and sale of household assets (12.8% male respondents, 17% female respondents). These four responses are consistent across categories when disaggregated by the sex of the household head instead of the sex of the respondent.

Table II. Top Five Factors Most-affected by Conflict, by Respondent Sex

Male	Female	
Planting or harvesting activities	Sale of household assets	
Grazing or livestock activities	Grazing or livestock activities	
Migration	Planting or harvesting activities	
Sale of household assets	Forced displacement	
Taxes on food crops	Migration	

Some responses varied considerably by sex: female respondents listed forced displacement (followed separately by migration) among the most-affected factors identified by respondents (8.3% of female respondents identified this, compared to 4.5% of male respondents).

Though chi-squared analyses do not indicate any statistical difference in trends between males and females selecting factors most-affected by conflict (p=0.108), this finding is borderline significant. This may indicate it is important to consider overall trends (i.e., the finding that of the top five factors identified as most-affected by conflict, four were common across both male and female respondents), while simultaneously considering nuanced differences between sexes.

Similarly, when asked how conflict affects forced displacement, 62% of female respondents reported 'Very badly affected' compared to 57% of male respondents, though this result was also found to be not significant (p=0.209).

Interestingly, however, when consulted on what factors are least affected by conflict, over one-third (37.1%) of female respondents named forced displacement - a comparable percentage to male respondents (a finding that was confirmed with statistical analyses which indicated no difference between males and females (p=0.93). This suggests a high level of diversity in experiences of mobility, migration, and displacement among female respondents: analysis suggests this is not clearly driven by age as responses were consistent across age ranges, and both migration and forced displacement were consistently in the top five mostaffected factors cited by both urban and peri-urban female respondents. However, location appears to be a strong factor in this framing: over 14% of female respondents in both Cité Soleil and Martissant listed forced migration as the most-affected factor, compared to 7% in La Gonave, 6% in Varreux 2, 4% in Centre Ville, and none in Varreux 1.

Another difference concerned taxes on food crops: male respondents were more likely to identify this as the factor most-affected by conflict (8.3% of male respondents listed this, compared to 5.5% of female respondents; a difference that was found to be

borderline statistically significant (p=0.123)). As above, this difference holds when the sex of the respondent is substituted with the sex of the household head, although there is a notable and statistically significant (p<<0.001) difference in the frequency with which urban male and peri-urban male respondents cited this as the most-affected factor (12.9% and 3.2%, respectively).

Focusing on female respondents only, when their responses are disaggregated by location, the most commonly cited factors conflict impacts were broadly similar -

- Sale of household assets appeared in the top
- five factors in four of the six locations in which
- the survey was carried out;
- Planting and harvesting appeared in the top five factors in five of the six locations;
- Grazing and livestock appeared in the top five in four of the six locations;
- Migration appeared in the top five in three of the six locations; and
- As discussed more fully above, forced displacement appeared in the top five in two of the six locations.

In Centre Ville, Cité Soleil and Martissant, however, roadblocks and checkpoints were listed as the most-affected factor by 6.6%, 7.4% and 8.4% of female respondents, respectively, pointing to particular mobility and transport barriers experienced by women in these locations. In La Gonave, the destruction of crops and food supplies ranked among the five most cited factors most impacted by conflict (14.3% of female respondents listed this). In Varreux 1, prices for local foods (16.7%), taxes on food crops (13.3%), and the amount of food at home (10%) featured in the

¹ It is important to note, however, that these observed similarities were not confirmed with statistical analyses, which indicated differences between the responses of female respondents disaggregated by location (p<<0.001). However, this finding may be due to the high number of variables and relatively low number of observations included in the analysis and should be interpreted with caution

top five, diverging more considerably from the broader response. Lastly, in Varreux 2, female respondents placed relatively greater emphasis on the amount of food at home (13% of female respondents listed this as the most-impacted factor by conflict) alongside market activities (9.3%).

Taken together, the responses appear to suggest that female respondents were more likely to frame conflict's mobility impacts in terms of forced displacement, rather than voluntary migration, particularly in locations including Cité Soleil and Martissant. This may suggest that even where mixed movements are occurring - both migration and displacement side-by-side - women are more likely to feel forced to move, whereas men may be more likely to experience (or simply, report) this as voluntary mobility. However, female respondents were also more likely than male to report that forced displacement was the least affected factor by conflict. This points to the heterogeneous nature of the sample, and of experiences of mobility across and within sexes. In particular, location appears to play a key role in shaping experiences of migration and forced displacement.

Considering the order in which most-affected factors were ranked, the responses provide some evidence to suggest that female respondents place greater emphasis on market-based coping strategies - such as the sale of household assets - compared to impacts on productive activities such as harvesting, which were relatively more highly ranked among male respondents. This may reflect divergent roles in food systems taken on by women and men respectively.

3.2.2. GENDERED IMPACTS

In assessing the impacts of conflict on women's participation in the food system, over one-infive (22.5%) respondents strongly agree with the statement, "Thinking about your own community [...] Conflict results in more women needing to compensate for household income," while over three-in-five (61%) agreed with the statement. Responses were comparable across the sex of respondents (a finding that was confirmed with statistical analysis, p=0.799). Disaggregation by location, however, reveals important

differences: in both Cité Soleil and Martissant, over 30% of respondents strongly agree with the statement; followed by 21% in Centre Ville; but only 5-8% in Varreux 1, Varreux 2 and La Gonave (a finding that was confirmed with statistical analysis, p<<0.001).

Just under 30% of respondents strongly agreed with the statement, "Thinking about your own community [...] Conflict results in fewer women selling food in the market," followed by over 55% who agreed. Responses were very similar across male and female respondents (a finding that was confirmed with statistical analysis, p=0.597); while urban respondents were more likely to strongly agree with the statement (31.4% compared to 24.1% among peri-urban counterparts) (a finding that was confirmed with statistical analysis, p=0.033). This difference is driven by a higher share of urban women in particular who strongly agreed with this statement (31.7% compared to 23.1% among peri-urban counterparts), with no discernible difference among urban and peri-urban male respondents (both at 28.6% strongly agreed).

Considering the specific role of Madan Saras in the food system, just under two-in-five (38.5%) of respondents strongly agreed with the statement, "Thinking about your own community [...] Conflict results in fewer Madan Saras bringing food into the urban areas," followed by 46.2% who agreed. Responses are comparable across male and female respondents (a finding that was confirmed with statistical analysis, p=0.8299); while urban respondents were more likely (40.8%) to strongly agree than peri-urban counterparts (34%)(a finding that was confirmed with statistical analysis, p=0.035). This impact appears to be particularly acutely felt in Martissant and Cité Soleil, where 55.8% and 50.9% of respondents respectively strongly agreed; followed by Centre Ville (33.4%), La Gonave (23.7%), Varreux 2 (20%) and Varreux 1 (15.4%). Statistical analyses confirmed the observed differences between cities (p<<0.001).

A quarter of respondents (25.1%) strongly agreed with the statement, "Thinking about your own community [...] Conflict results in more women migrating to urban centers," followed by 51.1% who agreed. Responses are broadly similar across male and female respondents (29.3% of male respondents strongly

agreed, compared to 24.4% of female respondents; a finding that was confirmed with statistical analysis, p=0.549), while respondents in urban areas were notably more likely to strongly agree (29.1%) than their peri-urban counterparts (17.4%) (a finding that was confirmed with statistical analysis, p=0.0001). As above, location is a key factor, with over one-third of respondents in Martissant (35.7%) and Cité Soleil (33.8%) strongly agreeing, compared to 25.4% in Centre Ville, 15.8% in La Gonave, 7.7% in Varreux 1 and 3.9% in Varreux 2. Again, statistical analyses confirmed the observed differences between cities (p<<0.001).

Together with the points raised above, women's mobility and capacity to traverse urban and peri-urban nodes in the food system appears to be profoundly affected by conflict in multiple ways. This is occurring at precisely the same time that many women report increased pressure to compensate for lost household income. Direct programming activities which seek to strengthen women's protection in these contexts, and/or advocacy initiatives which seek to raise awareness and shape the policy environment surrounding women's rights and vulnerability to violence, could be helpful in creating a more enabling environment for women's meaningful inclusion and participation in the food system.

3.2.3. CONFLICT AND RISK IMPACTS

Turning to the risks conflict poses to women, 24.2% of respondents strongly agreed with the statement, "Thinking about your own community [...] Conflict results in a greater risk of violence to women," followed by 50.6% who agreed. Responses are closely comparable across male and female respondents (a finding that was confirmed with statistical analysis, p=0.9578), with urban respondents more likely (at 26.8%) than peri-urban counterparts (at 19.3%) to strongly agree (a finding that was confirmed with statistical analysis, p=0.004).

In assessing the impact of conflict on women's involvement with armed groups, 13.7% of respondents strongly agreed with the statement that, "Thinking about your own community [...] Conflict results in women becoming involved with armed groups (joining

or affiliating)," followed by 39.8% who agreed. In this instance, male respondents were slightly more likely to strongly agree (16.5%) and agree (48.9%) than female counterparts (13.3% and 38.4%, respectively). This observed difference between male and female respondents was confirmed with statistical analyses (p=0.033). Urban respondents were both more likely to strongly agree (14.9%) and strongly disagree (13%) than their peri-urban counterparts (11.5% and 9.3%, respectively), suggesting high levels of variation within urban communities. However, this last observation was found to be borderline significant, p=0.190.

3.3 ILLUSTRATIVE ISSUES FROM KEY INFORMANT INTERVIEWS & FOCUS GROUP DISCUSSIONS

3.3.1. RISING FUEL COSTS

Interviews with key informants in Haiti highlight the importance of gas prices on food inflation. KII participants explained that a constrained fuel supply means an increase in gas prices is immediately reflected in an increase in the price of food. This relationship creates challenges when armed groups block access to gas for several weeks, which then causes the prices of food to increase across the board. These armed group activities are also a compounding factor as armed groups are known to seize and blockade ports, preventing ships containing imports from docking and distributing their products.

3.3.2. **IMPORTS**

Furthermore, KIIs stated that inflation is a particular issue for imported goods. Not only does difficulty accessing these goods increase their costs, but the rising strength of the U.S. dollar over the course of 2022 has created greater hurdles to securing enough food supplies. Inflation in the United States, where many imported goods originate, significantly reduces the purchasing power of Haitians, many of whom have come to depend on a variety of products from abroad. This key barrier results in substantially higher staple

food costs, particularly that of oil, flour, and beans, and can reduce diet quality.

3.3.3. MOBILITY

Roadblocks – instituted both by non-state armed groups and by state actors as security measures in response to armed group activities – and related disruptions to mobility are central components affecting how the Haitian food system functions.

Many of the factors affecting mobility are interlinked and reinforcing. For example, abandonment of food system livelihoods, such as in food transport, due to increased costs and risks puts upward pressure on food prices. Fewer transporters further disincentivizes local producers who struggle to move goods to market and face increased spoilage as a result. Transporters also increasingly prefer to move less product over more frequent trips to reduce the risk of predation or high taxes on a higher volume of goods. These more frequent trips, however, result in more fuel usage, the cost of which is thus transmitted to stakeholders further along the food supply chain. There is also a price differential between zones, even if distance is not significant, due to damaged infrastructure. For example, the distance between Bois Neuf and Brooklyn within Cité Soleil is about 1 km, but rice prices are higher in Brooklyn because flooded roads inaccessible to cars means people must use wheelbarrows to reach some parts of Brooklyn.

KIIs further drew attention to a complex and widespread system of revenue extraction by armed groups from food businesses and at marketplaces. These groups typically levy taxes on all food items and on the businesses that sell these items. While the amount may vary, all food system stakeholders throughout the value chain are subject to taxation. This system of double or triple taxing food products drives prices much higher. While taxation previously existed, incomes were higher, and taxation was lower. Since the intensification of violence and economic deterioration, the level of taxation and its relative impact on food system activities have increased.

In addition, armed groups target community members who still have stable incomes and extract higher

payments. People who are approached for taxes fear for their lives and are unable to say no. Many community members have been forced to leave because the level of tax is too high. Notably, taxes can be paid in the form of cash or food. For example, the company Meja (a popular rice brand in Haiti) is required to pay a bag of rice to each gang member. In addition, one gang negotiated that the company must give 100 bags of rice to the gang on the 20th of each month, demonstrating the power that these armed groups have over food distributors.

Taxation is also a great barrier to movement. The most affected areas are those in the southern region. The violence in Martissant has cut off Port-au-Prince from four departments as the road connecting the south (National Road 2) is totally occupied by armed groups. The three groups controlling the Martissant area each collect at least one tax from anyone trying to move goods or people on this road. The amount is not fixed but is negotiated by the drivers and can vary between 500 Gourdes and 1,500 Gourdes. This tax is paid at each passage. Consequently, both large and small businesses are required to pay taxes to move their food items to markets.

However, KII participants also noted that taxation by armed groups is a double-edged sword. As taxation and violence increase, market activity decreases. Gangs thus cannot generate as much revenue from taxation. The resulting impact is an increase in crime and violence as gangs try to compensate for these losses.

Some interviews noted how the intensity and additive nature of taxation has changed due to increased violence. Before the 2018 spike in violence, sellers going to market in Port-au-Prince were still taxed, but their incomes more than covered these marginal costs. The Marché de la Croix des Bossales is the economic lung of Port-au-Prince and, at the time, it was a center of exchange between wholesalers like the Madan Sara and buyers such as consumers, hotels, restaurants, and other businesses. However, Croix des Bossales is a sub-district of La Saline and subject to control of its gangs, generating millions of Gourdes in monthly tax revenue. Other gangs in the capital tried to take control of the market and, following the La Saline massacre of November 2018, it was closed for almost a year. Some

activities resumed intermittently, but the market was not able to regain its dynamism. At the same time, the security situation decayed in the surrounding metropolitan area, affecting movement outside and within Port-au-Prince. Thus, armed men have increased their pressure on merchants by taxing more frequently because they need money for weapons, ammunition, and other supplies. Through taxation, these armed groups have effectively co-opted every trader and merchant into their enterprise.

3.3.4. GENDER SPECIFIC IMPACTS

Evidence from the KIIs indicates that negative coping strategies are particularly present among women and girls in Haiti. Submissive and deferential behaviors have become more important to surviving the violence. Thus, women and girls often side with the strongest force in the conflict for greater access to food and security. For others, leaving their homes – either to move to a foster home or a family home – is a common action. However, this displacement results in loss of livelihoods and educational losses for children, both of which impact food security and nutritional status of the families.

According to the KIIs, women and girls are less likely to participate in armed groups but are increasingly impacted by the violence. One such indirect effect is the use of survival sex among women to gain access to food and other services as their ability to meet their immediate basic needs deteriorates. Informants also reported that women may assume roles in armed groups, either through their direct participation (less common) or as a partner or wife of a gang member (more common). In this way, women can support armed groups, sharing information or playing integral roles in their communities. This support of gangs is often driven by the need for women to seek protection and security.

Outside of their involvement in armed groups, women are severely affected by the conflict in their roles selling food at small-scale stands. Small vendors are often women, and they face a combination of targeted violence, rising food prices, and the inability to obtain food to sell. Conflict also can result in women being forced to stop trading due to reduced movement of

both food and people. Traffic restrictions prevent women from being able to work and carry out their trade as intermediaries in the food system. Women may need to be accompanied when they leave the home during times of conflict, which often leaves them stuck at home and lacking many freedoms. This loss of mobility has a compounding effect, particularly on women-headed households, as they are unable to obtain work or food, face reduced incomes and the inability to support their families, and experience greater vulnerability. Consequently, women can further be drawn towards supporting gangs for protection and money.

KIIs explained that these new conflict dynamics have had severe implications on Madan Sara activities.

Namely, the lack of security while transporting food has been a great challenge. Many of the Madan Saras on the roads are attacked or raped, as it is known that these women often have large amounts of cash on them. Since many women who are small-scale vendors are also unable to travel to the main markets, the Madan Saras have fewer buyers to whom they can distribute, impacting their income. In addition, much of their business requires payment for food products in advance. Since the conflict has intensified, many Madan Saras who were paid in advance subsequently had their goods stolen or were unable to access their goods.

Producers in Virad report that fewer Madan Saras operating as a result of violence means they sometimes must send their wives to sell produce instead, therefore subjecting them to many of the same risks of violence. Some informants indicated that gang members may think women traveling to markets are buying food for rival gang members, which puts them at greater risk of being implicated in wider conflict dynamics and vulnerable to targeted violence. This dynamic of wives taking on new roles also introduces issues around childcare responsibilities, which are often taken over by neighbors. Families and communities are having to balance these tradeoffs as they decide which risks they accept.

3.3.5. COPING STRATEGIES

The economic fabric of the neighborhoods experiencing conflict has crumbled. The two main markets in Brooklyn and New Wood, which are on the front lines of the gang violence, do not function at all. The Marché de la Croix des Bossales remained dysfunctional more than a year after the November 2018 massacre in La Saline. As it fed many smaller markets in the lower part of Port-au-Prince, such as the Brooklyn markets (Cité Soleil) and Bois Neuf, there was a scarcity of seasonal products such as mangoes, passion fruit, onions, peppers, and lemons. Many merchants also buy from the Marché de la Croix des Bossales to resell in the markets of Carrefour, Delmas and Pétion-Ville, which has increased the prices of these agricultural products locally.

Several entrepreneurs have settled in Duvivier (locality of Cité Soleil). But many merchants are also in debt and have problems with repayment if they do have remaining assets. An increase in violence and decrease in sales has led vendors to renew their stock less often and to stock food products of lower quality that are more accessible to consumers. Broadly speaking, everyone is interested in traveling less and looking for the lowest cost options to make an income and feed themselves. These factors can further increase the reliance on imported food and food assistance, which undermines local systems. Women are greatly concerned because they dominate this informal sector of small food traders.

As producers have less access to large-scale markets, they must sell directly to consumers or find alternative small-scale provincial vendors, which often means they must accept lower prices and receive less income. As a result, producers face greater food losses and are less able to invest in their operations. This situation reduces production in the next season and has forced some producers to abandon the agricultural sector altogether. Consequently, less food is available for processing and consumption in markets as both farmers reduce their output and the Madan Sara reduce their food distribution.

Many women have now abandoned their Madan Sara activities – not only because of the risks – but because of this decline in food sales. These women, as well as

other food system actors, have moved into alternative livelihoods such as construction labor or taxi services. An FGD participant who buys at the Titanyen market says that more than half of the women who once made the trip to the market with her have given up. Some of these women are now taking cooking and pastry courses as they look to gain new skills for other employment. This transition away from higher risk, upstream food system activities further drive losses for producers. With fewer food system actors and constrained flow of goods, there is less capital available within the food system and few options to reverse this decline.

As large markets shut down and household mobility is further restricted by intense violence, food purchases are increasingly limited to hyperlocal markets that do not provide the same dietary diversity and offer higher prices to consumers. For example, a market on a front line between Boston-Bélécourt (G9) and Brooklyn (Gpep) was closed. The market moved from Brooklyn to Soleil 13 (between Soleil 13 and Boule). This move was accepted by the "Chief" (leader of the Brooklyn gang); however, it has changed the profile of buyers and affected the income of merchants. The Brooklyn market was once frequented by people coming from outside, but now only people from inside the neighborhood visit.

Fewer income-generating activities for all also means consumers are generally spending less on food and other goods. There is a change in eating habits with the consumption of products of poorer quality and the consumption of products that are typically less appealing to children such as corn flour. Informants expressed alarm over increasing child malnourishment. As access to clean drinking water is also affected by the conflict, diarrheal diseases in children particularly exacerbate their nutritional insecurity. However, restricted access to healthcare and humanitarian assistance means that many in Haiti will forgo care, especially as the intensity of the violence remains elevated.

4. DISCUSSION

4.1. DISCUSSION OF RESULTS

The research reveals conflict has a negative impact on the food system of Haiti throughout the value chain from rural production to urban consumption by:

- a) Severely compromising mobility through insecurity, roadblocks, and taxation, handicapping the flow of goods and capital;
- Broadly impacting women that play a vital role in the food system, especially Madan Saras, but also others, leading to less food availability and market activity; and
- Pushing food system actors into maladaptive coping strategies that degrade the local food system and incentivize food imports.

The sections below explore these in further detail, distinguishing between impacts of conflict on the food system that are -

- Connected complex interconnections between different nodes in the food system;
- Cumulative successive, repeated exposure to specific distortions and disruptions in the food system that intensify impacts; and
- Compounding combined impacts of cooccurring effects on the food system that act together to multiply impacts.

4.1.1. CONNECTED

IMPORTS AND INFLATION

Imports have an important role to play in food security by supplementing local food production with food imports as well as providing key inputs in the form of seeds, fertilizer, fuel, and other supplies that may not be available in sufficient supply locally. Food imports can help meet the need for food quantity and dietary diversity in combination with local food production but can also be harmful when suppressing local food

systems. There are connections between local food production, imported food, and agricultural inputs that inflation can modulate. Conflict acts to drive inflation on both agricultural inputs and local food prices to degrade local food systems. In the food system map, rising agricultural input prices contribute indirectly to food import dependence by undermining agricultural production when the cost of agricultural inputs rise. If food imports are of low-quality calories such as processed carbohydrates, they can disincentivize production of local nutritious food in the short term and change diets in the long term.

The cost of local foods, to make it from farm to table, is also inflated by conflict due to taxation, roadblocks, and limited mobility, as described below. When imported foods are relatively lower priced and replace local foods directly, they also disincentivize local food systems. The cost of agricultural inputs also contributes to more systematic abandonment of agricultural livelihoods, as landless producers abandon production because inputs outweigh profits, particularly when renting land. The abandonment of food system-related livelihoods, discussed below, has a further, mutually reinforcing impact on agricultural production as it heightens import dependence, contributing to a less sustainable, more volatile and fragile food system in both the short and longer term.

4.1.2. CUMULATIVE

ROADBLOCKS, TAXATION AND MOBILITY

While roadblocks are a direct manifestation of conflict, illegal taxation and restricted mobility are closely linked. The impacts of illegal taxation and restricted mobility due to conflict accumulate throughout the food system in various ways. Their food security impacts are transmitted through a) decreased food availability by disincentivizing production and restricting the movement of goods; b) diminished food accessibility from increased transport and production costs transmitted to consumers in higher prices; and c) poor food consumption indirectly by driving food spoilage

and forcing households to depend to a greater extent on smaller local markets with more limited selection and, often, nutritionally inferior food.

Inputs into the food system, such as seeds, oil and fuel transports from central or port cities are also illegally taxed by armed groups raising the cost of food production and processing. Armed groups can impose taxes at every stage of the food system from production to processing to transport and trade. This burden combined with taxes from the government can add up to make food system activities prohibitively expensive or significantly diminish returns and ultimately degrade local food systems.

GENDERED IMPACTS

The gendered impacts of conflict's effects in the food system accumulate throughout the food value chain. In the most direct examples, Madan Saras - who play a critical role in food transport and marketing, linking suppliers to consumers - are targeted for attack. The vulnerability of these key food system stakeholders is significant, as they are exposed to the threat of kidnapping on main and secondary arteries and gun violence in key marketplaces. Consequently, the role of Madan Saras is changing and the decline is particularly impactful on the food system; there are both fewer Madan Saras operating as key intermediaries and driving market activities, and those who remain active are often taking fewer trips (reduced frequency from twice a week to once a week) and carrying a smaller volume of goods. Past coping strategies - including Madan Saras being hosted by certain suppliers when transport was unfeasible or unsafe - still exist but are also in decline.

Further adaptations also impact women in this value chain as the wives of producers resort to the direct sale of goods which exposes them to risk when traveling outside the home. They may also take a greater role in manually processing foods when larger scale processing is hindered by cost and limited mobility. In cities, and specifically neighborhoods dominated by gangs, many women are pushed into informal labor outside the home as they may be seen as less of a target to the controlling gang. They also bear the

responsibility of going to market for food and many become informal vendors themselves when markets are compromised by conflict. Yet, these activities, as in all the roles that women play through the food value chain in conflict settings, exposes them to gender based violence.

4.1.3. COMPOUNDING

MALADAPTIVE LIVELIHOOD TRANSFORMATION

The most striking revelation enabled by this holistic mapping analysis is that food and livelihood systems are transformed by conflict into maladaptive states that undermine endogenous food systems and food security. Maladaptive cascades initiated by conflict lead to pathways that diminish, degrade or disable local food systems. Often, the coping strategy used to deal with conflict navigates people into behavior that disrupts the food system in the medium to long term, by reducing local food production, availability and access.

As conflict drives production, processing, transport and market costs higher or simply makes transport or doing business more risky or difficult, stakeholders in the system often reduce their activity. Farmers will cope by growing less crop or switching to cash crops if profits decline or limited mobility leads to excess waste. Some turn to bush products such as charcoal to compensate for income, which further degrades the environment and undermines future food production. Manual processing as a coping strategy for lack of mobility to machine processing sites or diminished capacity among industrial processors leads to less food availability. Transporters reduce their risk with fewer trips or alternative cargos. All stakeholders may resort to alternative markets with less business.

These coping strategies, however, cannot meet the needs required of the local food system, generate enough return for risk and expense among food system stakeholders and undermine the flows of capital that allow that system to run and reinvest in itself. Ultimately, this leads to displacement and abandonment of food system livelihoods for alternatives, which disables local food systems, further increasing food import dependence. In addition to the cyclical relationship between conflict and food security

as drivers of one another, the map reveals these more destructive pathways that can be difficult to overcome and are not easily ameliorated by simply addressing conflict.

HEALTH DISRUPTIONS AND SPECIFIC RISKS FOR WOMEN AND GIRLS

The direct impacts of conflict on the food system have significant and substantial indirect and multiplicative effects on health outcomes. Access to quality foods at necessary quantities is becoming increasingly rare in many parts of Haiti. As a result, rates of malnutrition and undernutrition are rising, particularly among children. As many livelihoods are tied to the food system, the damaging impacts on livelihoods documented throughout this study, lead to significantly reduced income, which is critical for accessing adequate shelter and basic needs as well as self-care, making it difficult to maintain health and wellbeing. Coping strategies employed in response to livelihood disruptions are also often specific to health, from skipping meals to forgoing medication and even basic hygiene.

Compounding this, the Haitian health care system is struggling to cope with the ongoing violent conflict. Disruptions to everyday life in Haiti, as described through this report, have significant and severe implications on the functioning of the healthcare system from lack of supplies, capacity and maintenance, and the ability of community members to seek and receive health care. This is particularly challenging in the context of limited mobility and inability to access health care centers for care. In combination with food system and livelihood disruptions, mounting health problems go unaddressed multiplying morbidity and mortality from a wide array of causes.

The disruptions in the food, livelihood and health systems are felt by all but bear down particularly for women and girls. Given the acute vulnerabilities they face, described earlier in this report, many of the common health impacts are more widely or severely felt by women and girls. Specifically, the increased conflict-related SGBV, reduced mobility and gendered

impacts described above work concurrently to place the health of women and girls at grave risk.

4.2. CONCLUSIONS AND RECOMMENDATIONS

While this research has been holistic in exploring conflict's impact on food systems, it focuses on many of the protracted and chronic conflict dynamics that impact food systems. The researchers keenly acknowledge that acute crises and flare-ups of conflict and violence often require immediate, emergency responses to minimize suffering and loss of life, that are not the focus of the discussion here. The recommendations set forth here are intended to be employed when appropriate and in conjunction with short-term interventions to address acute crises.

Programmatic Recommendations

Support nutrition-sensitive activities in secondary and tertiary markets.

In light of profound mobility restrictions in Haiti's food system, supporting access to more nutritious foods to be sold in smaller local markets could have positive effects throughout the food system.

The FCM highlighted the centrality of Main Market Activity, as the most connected factor when measured by both centrality and eigencentrality. Meanwhile, findings from across KIIs, FGDs and the survey illustrated the depth and breadth of movement restrictions in the Haitian food system. Large central markets are an integral component of a functioning food system in Haiti, but in a context of heavy control by armed groups, restricted movement of goods, and often-prohibitive transport costs and risks, efforts to support secondary and tertiary markets to fill the gap in food accessibility in local neighborhoods would be valuable.

Any intervention of this kind should be designed after careful analysis of conflict dynamics and the potential for unintended consequences throughout the conflict system - specifically, the risks of making smaller markets more attractive to armed groups and drawing conflict actors into more localized markets.

Design targeted protection interventions that support vulnerable stakeholders in the food system.

Across mapping, surveys and qualitative consultations, this research revealed how reduced mobility and vulnerability of transport and intermediary actors in the food system is a key component driving reduced availability of food, higher prices, and abandonment of food-related livelihoods.

Providing targeted protection services for vulnerable stakeholders in the food system - particularly women - is both an important service for at-risk populations, and an intervention with the potential to mitigate disruptions in the food system. Protection activities might include targeted health and psychosocial support for Madan Saras, female vendors and the wives of producers directly involved in sales; targeted protection trainings for state security forces, armed groups, and informal authorities (such as community leaders, elders, and other actors) highlighting the violation of rights and disruption to the food system that arises due to the targeting of female stakeholders; and wider community awareness-raising, sensitization and a public information campaign around rights and entitlements to support a more enabling environment and shifting norms in armed actor behavior. Ultimately, the establishment of 'safe zones' such as safe markets, or safe transport corridors through engagement with diverse actors could be a medium- to longerterm objective of a campaign and combination of interventions such as this.

3. Target women food system stakeholders for engagement in social cohesion activities.

Evidence from the FCM, KIIs, FGDs and survey respondents all demonstrates the multiple ways in which the effects of conflict on the food system are profoundly gendered. Women food system stakeholders - including producers, transporters, vendors and merchants - face compounding threats at every stage of

the food value chain. Moreover, this research highlights the frequency of attacks on food transport workers and Madan Sara victimization. These findings suggest these are not incidental features of the conflict, but rather, integral strategies in armed group control and coercion. This exposes food system stakeholders to unique risks, but also affords them unique perspectives on the dynamics of conflict, its impacts in communities, and the steps required to address and resolve conflict to build more peaceful and resilient communities.

A significant breakdown of social cohesion locally has contributed to the conflict and its cascading effects throughout the food system. Several organizations are undertaking social cohesion and peacebuilding activities in Haiti; supporting the targeted engagement of women food systems stakeholders in these activities and broader community empowerment activities could help ensure their unique perspective and experience is taken into account in conflict resolution efforts and, moreover, could serve to amplify food system stakeholder protection programming efforts (see above).

Pursue humanitarian strategies that support local food systems and minimize negative externalities.

The humanitarian community, including donors, must take a conflict-sensitive approach to understand not only how conflict and food security exist in relationship with one another but also how specific humanitarian strategies related to food assistance can reinforce the maladaptive transformations described above.

There are unintentional negative consequences to long-term food security and perpetuating conflict that may be avoided or minimized with a more holistic understanding of how humanitarian assistance impacts local food systems. Donors should understand the food import pricing relative to local food and the relationship with challenges in producing, processing and accessing local food. Directed strategies at overcoming these challenges and preventing maladaptive transformations should be considered as part of a holistic humanitarian strategy.

An FCM approach can reveal potential avenues for

supporting local food systems rather than dependence on food imports. For example, as many of the maladaptive coping strategies are centered on changing livelihoods, programming that can support food system livelihoods presents an avenue for intervention. More specifically, the prohibitive costs of continuing to do business relative to profit drive these transformations and subsidies targeted at specific local food system businesses may be reasonable at times of stress. Accompanying cash transfer programming, a voucher system for use only on local food vendors or suppliers, could help support local food systems. Finally, direct food assistance should be the least preferred mode of humanitarian assistance made available and used under very specific criteria.

4.2.1. POLICY AND ADVOCACY RECOMMENDATIONS

 Pursue humanitarian relationships and diplomacy that understand and respond to the relationship between political dynamics, conflict dynamics, and food insecurity

Conflict in Haiti has a known relationship with political dynamics. The ties between political patronage and illegal taxation as well as territorial control by armed actors that impacts food systems should be understood and responded to when pursuing conflict resolution and advocacy. Various political interests are also embedded into the food system, specifically food imports, that may benefit from conflict that propels import dependence. This awareness should lead to advocacy at national and international levels that shines a harsh light on these elements and their contribution to both conflict and food insecurity in Haiti. Advocacy efforts towards political resolution and peace-building should avoid reinforcing certain elements that are invested in the food import business that exacerbate a degradation of local food systems.

 Pursue protection agenda and associated advocacy around cumulative impacts of taxation and mobility barriers (e.g., roadblocks). Humanitarian and development responses alone cannot fully address the depth and complexity of many of the obstacles affecting food security for people experiencing extreme poverty in Haiti. Political actors within Haiti primarily, and in the wider international system secondarily, have an important role to play in protecting food systems stakeholders. Targeted advocacy efforts can make an important contribution by first, raising awareness of the extent to which roadblocks and attacks on food systems stakeholders affect food security for the most vulnerable; and second, calling for policy action to better protect food systems stakeholders.

Potential policy asks to explore include greater consideration of roadblocks, transport barriers and attacks on food systems stakeholders in transit under the remit of UN Security Council Resolution 2417 and associated reporting; greater consideration of the gendered effects of roadblocks, transport barriers and attacks on female food systems stakeholders under the remit of UN Security Council Resolution 1325 and associated reporting and briefings; and/or exploring international legal and accountability provisions related to attacks on food systems stakeholders and the gendered impacts where appropriate.

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