

## Vulnerability to food and nutrition insecurity in the Caribbean

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### Abstract

**Objective:** To assess the livelihoods that are most vulnerable to food and nutrition insecurity in three Caribbean countries: Jamaica, St. Vincent and the Grenadines and St. Kitts and Nevis.

**Methods:** The Sustainable Livelihood Approach (SLA), and the Food and Agriculture Organization's (FAO's), Food Insecurity Vulnerability Mapping Systems (FIVIMS), framework were used as the lens for conducting the assessment. Primary data from household interviews, focus group discussions, and key informant interviews, as well as secondary data, provided answers to five empirically based questions posed in the study, viz., *who* are vulnerable to food and nutrition insecurity; *how many* they are; *where* they are located; *why* they are vulnerable; and *what* can be done to address the vulnerability situation.

**Results:** Poverty is a key driver of food insecurity, and is reinforced in livelihoods that, typically:

- Have limited asset portfolios.
- Do not benefit significantly from external risk management instruments such as policies, laws, and regulations
- Are frequently impacted negatively by shocks (e.g., natural disasters), trends (e.g., loss of markets), and seasonality.

These factors, singly or combined, restrict choices, and constrain the ability of households to maintain food security and build resilience against food insecurity. The paper drew attention to the importance of, and briefly covered key gender issues.

**Conclusions:** The three-country case study highlights the full range of factors that place people at risk of becoming food-insecure. The paper recommends policy actions to address the risk factors to food and nutrition insecurity, and to increase the resilience of livelihoods to cope with or respond effectively to stressful situations.

**Keywords:** Food and nutrition security; Vulnerability; Livelihoods; Sustainable livelihoods

### 1. Introduction

Over the past two decades policy makers in the Caribbean, with assistance from international development partners, have increased efforts at formulating and implementing their country's food and nutrition security policies and action plans. Despite this progress at the policy level, these countries still face critical food and nutrition security challenges (1,2,3), including but not restricted to: (a) Increasing dependence on imported foods, with a concomitant high food import bill; (b) Farming systems that are faced with several key binding constraints; (c) Livelihoods that are vulnerable

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to food and nutrition insecurity; and (d) A prevalence of nutrition-related chronic diseases, which are now the main public-health problem in these countries.

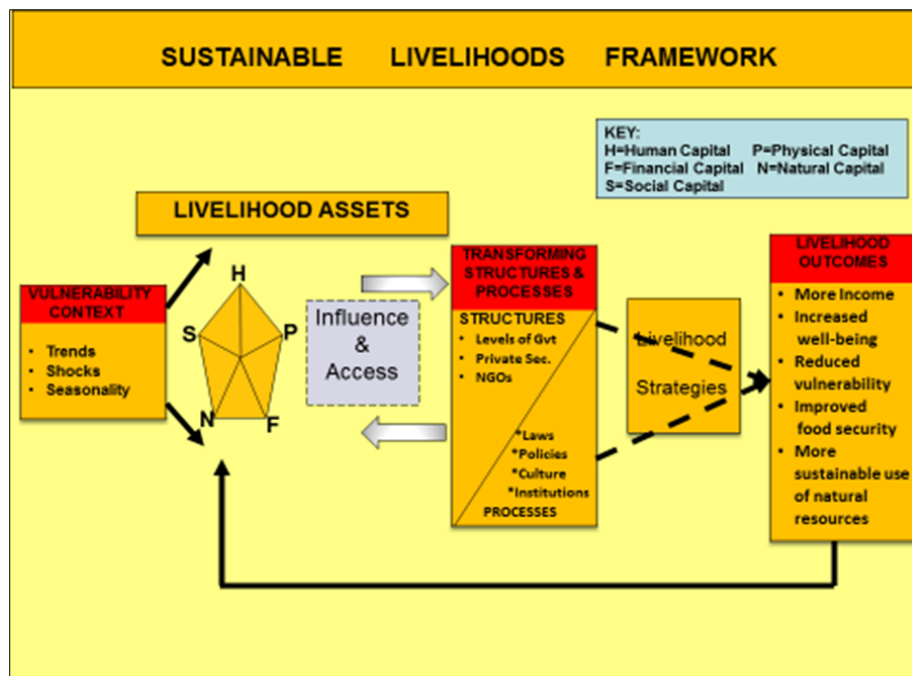
The objective of this study was to assess the livelihoods most vulnerable to food and nutrition insecurity in St. Kitts and Nevis (SKN), St. Vincent and the Grenadines (SVG), and Jamaica (JAM). In particular, the main motivation was to seek answers to five Food Insecurity Vulnerability Mapping Systems (FIVIMS) questions about vulnerability to food and nutrition insecurity in the three countries, viz. *who* (i.e., which livelihoods), are vulnerable to food insecurity, *where* are they located, *how many* are they, *why* are they vulnerable and *what* can be done to address this vulnerability? The assessment highlights the full range of factors that place people at risk of becoming food insecure. These *risk factors* determine the degree of vulnerability of individuals, households or groups of people and their *resilience* or abilities to cope with or respond effectively to stressful situations. In this study, food and nutrition security exists when all persons have physical and economic access to safe, healthy, and nutritious food for active and healthy living, and that they are not at risk of losing this access. When these conditions are compromised households and individuals are vulnerable to food and nutrition insecurity.

## 2. Methods

### 2.1. Analytical Framework

The Sustainable Livelihood Approach (SLA), (Figure 1), and the Food and Agriculture's (FAO's), Food Insecurity Vulnerability Mapping Systems (FIVIMS), frameworks were used as the lens for conducting the food insecurity and vulnerability assessment in three countries: Jamaica, St. Vincent and the Grenadines, St. Kitts and Nevis. A livelihood is defined by the main economic activity of a household, such as farming, wage labor, fishing, etc., but with explicit recognition that the household may derive supplemental support from a range of other livelihood activities (4,5). A livelihood comprises:

- the household assets, expressed in five forms of capital, viz., Human capital (e.g., health,



Source: Adapted from ACF, 2010, p 21

**Figure 1** The Sustainable Livelihood Framework for Livelihood Assessment

education, skills); Social Capital (relationship to family and community members and groups); Natural Capital (natural resources such as rivers, sea, public lands/forests, etc.); Physical Capital (private capital such as land, animals, tree-crops, etc., and publicly owned to which the livelihood has access, such as schools, roads, bridges, etc.); and Financial Capital (e.g., savings, access to credit, personal valuables, etc.);

- the livelihood activities/strategies of the household
- facilitating or constraining transforming structures, institutions, and processes
- Effects from forces of change.

Vulnerability refers to the risks of households to food insecurity because (and these are to be investigated empirically), they may:

- have limited assets
- do not benefit from external risk management
- engage in livelihood activities that are disproportionately affected negatively by shocks, trends and seasonality; and because of (i) and (ii) lack the resilience to sustain their livelihoods should an event such as a natural disaster or economic shock were to occur

The study also utilized the FAO’s Food Insecurity Vulnerability Information Mapping System (FIVIMS) framework (6,7).

## 2.2. Data Sources

A review of secondary data sources was conducted as a first step towards identifying vulnerable livelihoods. In this regard, the Country Poverty Assessments (CPAs) provided insights into the poverty and social and living conditions of the country’s population (8,9,10). Secondly, national consultations and key informant interviews provided valuable information on the vulnerable livelihoods in the three countries. Data from the CPAs and the population censuses were used to estimate the number of persons who are vulnerable to food insecurity. On this basis, the communities selected for this study are some of the poorest in the various parishes of the countries. Focus group discussions were held in most of these communities. Additionally, in each of the three countries, a survey instrument was administered among randomly chosen households within each community, and one person per household was interviewed. The household surveys were conducted in March 2019 after which the data were analyzed using the Statistical Package for the Social Sciences (SPSS). Table 1 shows the numbers of communities selected for this study, the number of focus group discussions that were conducted and the number of households that were interviewed.

**Table 1** Number of Communities Selected, Focus Group Discussions Conducted and Households Interviewed

Country	Communities Selected	Focus Group Discussions	HHs Interviewed
SKN	32	18	300
SVG	60	16	369
Jamaica	28	24	678
Total	120	58	1347

To develop a hunger index, the responses to the questionnaire were grouped into categories of hunger (Table 2).

**Table 2** Household Hunger Prevalence Indicator (HHPI)

	Never	1- or 2-times during crisis	Almost weekly	Almost every day
Worry about food running out	0	1	1	2
Cut/Skip meals	0	2	2	3
Go without food all day	0	3	4	4

No = 0 Mild =1 Moderate =2 Severe = 3&4

The HHPI seeks to capture the prevalence of hunger mainly because the household may not have access to food due either to lack of purchasing power or own production. This indicator categorizes households into four levels of household hunger: No Hunger, Mild, Moderate and Severe Hunger.

### 3. Results

#### 3.1. Overview of Key National Food and Nutrition Security Issues

The most recent data published by the FAO (11), reveal that the three countries under study, respectively, have macronutrients and dietary energy supply (DES) more than Recommended Population Food Goals (RPFs). DES in Jamaica is on average 23% above RPFs. For St. Kitts-Nevis and St. Vincent and the Grenadines it is 10% and 26%, respectively. Protein supply is on average 12% above RPFs for Jamaica, and for SKN and SVG, it is 10% and 6%, respectively. Fats and Oils supply in Jamaica is on average 33% above RPFs, and for SKN and SVG it is 31% and 43%, respectively. Finally, sugar and sweeteners supply in Jamaica is on average 293% above RPFs, and for SKN and SVG it is 235% and 71%, respectively.

Although total food calories and macronutrients availability are more than RPFs, these data should be viewed with caution for several reasons (1,2,3):

- Enduring poverty levels, unemployment/underemployment, and skewed distribution of income constrain households' access to healthy and nutritious foods on a daily basis;
- There is a significant excess of fats/oils, sugars and sweeteners in the food supply, which is counter-productive given that chronic non-communicable diseases (NCDs), are the main public health problems in these countries. These diseases are linked to increasing prevalence of overweight and obesity, sedentary lifestyles, and preferences for processed foods, and foods that are high in refined carbohydrates, fats, sweeteners and sodium;
- Food imports, as opposed to national food production, are by far the largest source of food for these countries. In particular, the food import dependence for Jamaica, SKN and SVG is on average 63%, 95% and 65%, respectively. These high food imports undermine national food sovereignty, by unfairly competing with, discouraging, and displacing local farmers.
- Natural disasters and other exogenous factors reverse years of the country's macro-economic development and the economic progress of many households, and push vulnerable groups of the population below an acceptable food and nutrition security threshold.

#### 3.2. The Livelihoods most Vulnerable to Food Insecurity

Based on information from the Country Poverty Assessments, national consultation and key informant interviews, the livelihoods that are most vulnerable to food insecurity and their locations in the three countries are shown in Table 3. While households rely on the main economic activity that defines these livelihoods, invariably they also engage in a range of other activities for supplementary support. The following is a brief description of the vulnerable livelihoods.

##### 3.2.1. Small-scale/subsistence farmers

Small-scale farmers have access to land (own or rent), ranging from very small plots (one-tenth of an acre) to two acres of land. They grow a range of cash-crops both for own-consumption and for marketable sales. Some small-farmer households rely mainly on agriculture for their livelihoods, while others are part-time subsistence farmers who actively seek out and engage in other activities to support their households.

##### 3.2.2. Fisher Folk

The fisher folk livelihood consists of small-scale near-shore fishing operators. They go out to sea in the mornings and return to shore the same day with their catch. The fish is sold mainly to local consumers, local retailers, and exporters. These small-scale fisher folks use beach seine and set nets; reef fishing using fish traps, handline and set nets; deep-slope/demersal using handline and vertical long-line; and lobster and conch using scuba traps and diving. The fishing fleet ranges from small open boats to open and decked pirogues, propelled mainly by 30-85 horse-power engines.

##### 3.2.3. The Working Poor/Rural Working Poor

The Working Poor (including the Rural Working Poor) constitutes a livelihood that is dependent mainly on employment for wages and salaries for support. The three countries in this study have transitioned into predominantly service-oriented economies, which have become a major source of employment and income for most of its population. A key feature of the working poor livelihood is the coincidence of poverty and employment (part-time and under-employment), among a large proportion of poor households. In effect, these persons maintained regular employment but remained in relative poverty due to low wages, and irregular employment.

**Table 3** Most Vulnerable Livelihoods and Location in the Three Countries

Country	Vulnerable Livelihoods/Location (Parish)	General Remarks
St. Kitts-Nevis	Small scale farmers/ (St. John, St. Mary and St. Thomas)	Within each of these livelihoods there are “at risk” groups that are vulnerable to food and nutrition insecurity. These groups include: Children Youths Single mothers The elderly The handicapped Pensioners Vagrants
	Fisher Folk/ (Scattered in all Parishes in Nevis)	
	The Working Poor Construction workers (St. John (E), St. Mary, St. Thomas, St. Paul) Elementary workers (St. John (E), St. Mary, St. Thomas, St. Paul) Services/Sales (St. John (E), St. Mary, St. Thomas, St. Paul)	
	Small scale entrepreneurs Agro-processors (Island-wide) Street Vendors (Basseterre E and W)	
St. Vincent & The Grenadines	Small scale farmers/ Banana growers & Other Crops (Charlotte, St. David, St. Patrick, St. George)	The FIVIMS methodology takes the view that these “at risk” groups belong to livelihoods (e.g., farming, wage-earning; fisher folk, etc.) and focusing on them runs the risk of double counting the vulnerable. The position taken by the Ministry of Social Services in the Caribbean is to provide ‘social safety-nets’ for these “at risk” (usually self-reporting), groups rather than to entire vulnerable livelihoods.
	Fisher Folk/ (The Grenadines, St. David, St. Patrick, St. George)	
	Working Poor Construction workers (St. John (E), St. Mary, St. Thomas, St. Paul) Elementary workers (St. John (E), St. Mary, St. Thomas, St. Paul) Services/Sales (St. John (E), St. Mary, St. Thomas, St. Paul)	
	Small scale entrepreneurs (Island-wide) Craft-workers Itinerant vendors/Small retailers Agro-processors	
Jamaica	Small scale farmers (Island-wide) Inner-city Livelihood (Kingston & St. Andrew) Rural working poor (All parishes) Small-scale entrepreneurs (St. Catherine, Kingston, St. Andrew)	

#### 3.2.4. Small-scale entrepreneurs

This livelihood consists of people who rely upon their own initiative, industry, self-motivation, limited capital outlays, and an over-all entrepreneurial spirit for livelihood support. These people include small retailers, those who produced crafts/souvenirs for the tourist industry, small-scale agro-processors, and street vendors, including itinerant vendors.

#### 3.2.5. Inner-City Livelihood

The Inner-City Poor in Jamaica is a special case of the urban poor. They live in communities variously described as “ghettos”, “inner cities”, “tribalized communities” and “garrison communities”, as opposed to generally accepted notions of urban areas. There are two core defining features of the inner-city poor that distinguish them from other working poor livelihood (rural or urban), that keep them in poverty and vulnerable to food insecurity, and which combine to characterize them as a livelihood: (i) they face distinctively more severe challenges in terms of education, housing, health-care, employment and discrimination; and (ii) they exhibit an element of autonomy, i.e., “a state within a state”, which is linked to a political culture under tight control of politicians and the local enforcer, the “Dons” (12). The inner-city poor is essentially the urban most marginal population, mainly consisting of youths (males and females) without schooling, adults who are unemployed/underemployed, and people living from day to day working as small business

owners, vendors, casual workers in local urban areas, or undertaking any other activity (including exotic dancing, prostituting, and engaging in criminal activities), from which they can derive some income.

### 3.3. Livelihood Outcomes

#### 3.3.1. Income distribution

Food access in vulnerable communities in all three countries is constrained by low wages and significant income inequality. Household surveys conducted for this study revealed that in SKN 38% of the respondents had household earnings at or below the minimum wage, and for SVG and Jamaica it was 41% and 48.8%, respectively. Moreover, the average cost of a nutritionally balanced basket of food in St. Kitts in 2019 was EC\$12.42, while in Nevis it was EC\$11.44. For SVG and Jamaica it was EC\$ 10.90 and Ja\$ 404.39, respectively. This means that a hypothetical low-income family of 5 in SKN would require between 77% and 91% of the minimum wage to purchase the minimum cost food basket for one week, assuming one income earner. For SVG and Jamaica it will require 185% and 134%, respectively. Food access is further constrained by highly unequal distribution of income (2). In SKN, the consumption-expenditure of the richest 10 percent of income earners was 13 times more than that of the poorest 10% of income earners, and for SVG and Jamaica it was 13 times and 16 times, respectively. Finally, based on the GINI coefficient (a statistical measure of income-inequality), SKN and SVG are countries with high income inequality while Jamaica has extreme high income-inequality (2).

#### 3.3.2. Household Hunger Indicators

The survey instrument that was administered solicited subjective responses from households to five conditions and behaviors about their hunger status. The responses focused on whether the household had enough money or food to meet basic food needs and on the behavioral responses to that condition. For SKN 64% of households worried that food would run out before money is available and 38.5% did so almost every month, on a daily basis. The proportions of adults who skipped meals or forego meals for a whole day were 53.9% and 27.5%, respectively, though with lesser frequencies compared to worrying about food availability. Children also skipped meals (27%), almost every month, on a daily basis (27.5%), some months (39.3%), or occasionally (33.1%). A smaller proportion of children (5.9%) went without food for a whole day, and for 25%, this occurred almost every month on a daily basis, and for 40%, this happened occasionally (92.3%). For SVG, 53% of the households worried that food would run out before money is available and 39.5% did so almost every month on a daily basis. The proportion of adults who skipped meals or forego meals for a whole day was 42.6%, and 37.7% did so almost every month on a daily basis. Among children, 27.7% skipped meals, with 30% doing so almost every month on a daily basis, 22.5% on some months, and 47.5% occasionally. A smaller proportion of children (9.4%) went without food for a whole day, and 31% did so almost every month on a daily basis. For Jamaica, 64% of households worried that food will run out before money is available and 38.5% did so almost every month on a daily basis. The proportions of adults who skipped meals or forego meals for a whole day 53.9% and 27.5%, respectively, though with lesser frequencies compared to worrying about food availability. Children also skipped meals (27%), almost every month on a daily basis (27.5%), some months (39.3%), or occasionally (33.1%). A smaller proportion of children (5.9%) went without food for a whole day, and for 25%, this occurred almost every month on a daily basis, and for 40%, this happened occasionally (92.3%).

**Table 4** Household Hunger Prevalence Indicator (HHPI) (%)

Hunger Status	Country		
	SKN	SVG	Jamaica
No Hunger	71.7	51.2	36.8
Mild Hunger	13.5	11.8	18.4
Moderate Hunger	9.1	18.5	20.8
Severe Hunger	5.7	18.5	23.9
Total	100	100	100.0

The study computed a Household Hunger Prevalence Indicator (HHPI) from the survey data in Table 2. Table 4 shows that for SKN, 72% of respondents experienced no hunger, 14% mild hunger, and close to 15% either experienced moderate or severe hunger. For SVG 51% of respondents experienced no hunger, 12% mild hunger, and close to 37%

either experienced moderate or severe hunger. Finally, for Jamaica 36.8% of respondents experienced no hunger, 18.4% mild hunger, and close to 45% either experienced moderate or severe hunger.

### **3.4. Main Factors Driving Livelihoods' Vulnerability to Food and Nutrition Insecurity**

#### *3.4.1. Poor Macroeconomic Performance*

Long periods of low and/or negative economic growth are antithetical to employment creation, and to public expenditure expansion on public infrastructure, and social programs, such as school feeding, food supplements for pregnant and lactating mothers, minimum wages, and public assistance, thereby making food less accessible to households. In all three countries economic growth has been slow, especially over the last two decades. For SKN, the 2002-2012 decade was one of low Gross Domestic Product (GDP) growth, averaging less than one percent annually, with four years of negative growth. Since 2008 economic growth in SVG has declined significantly, averaging only 0.59% annually over the past decade (1.5% over the past five years). In Jamaica, average annual GDP growth was 0.7% over the 18-years, 2000-2017, and -0.1% over the past ten years. Exogenous factors such as hurricanes, tropical storms and crises on the world economy have impacted negatively on the countries' economic growth.

#### *3.4.2. Enduring poverty*

The immediately preceding and most recent population absolute poverty, (inability to meet basic food and non-food needs), estimates for the three countries are 23.9% and 20.8% (SKN); 33.5% and 30%, (SVG), and 17.8% and 19.9% (Jamaica). These relatively high and enduring poverty rates persist despite the existence of dedicated evidence-based policies and strategies that were ostensibly designed to reduce poverty in these countries. The World Bank (13) had predicted that COVID-19 will increase poverty rates in these and other developing countries. Poverty is a main driving factor for food insecurity and disproportionately impact young children, females, and youths (2). Moreover, poverty reinforces low incomes and limited asset portfolios of poor households.

#### *3.4.3. Dependence on low-paid, irregular wage-labor*

All three countries have transitioned into services-oriented tertiary economies, which currently account for over 75%, respectively, of the countries' GDP. The latest Country Poverty Assessment reported that among the persons in the poorest 20% income group, 82% in St. Kitts and 97% in Nevis, were in full-time employment, referred to as the "working poor". In SVG 74% of heads of households were similarly characterized. In SKN and SVG the working poor are mainly in the services and retail industries, and in elementary jobs. In Jamaica, the working poor is mainly a rural phenomenon, but is very pervasive given that the rural population is disproportionately greater than the urban population in 11 of the country's 14 parishes. While most of the working poor have a primary education, more than 50% have no educational certification, relegating them to low-paying jobs and underemployment due to seasonality and frequent layoffs.

#### *3.4.4. Limited assets and lack of resilience*

The field work completed for this study verified several sobering conditions that characterize these livelihoods, including: (a) households' asset portfolios (i.e., the households' five forms of capital), were limited and/or at the very basic minimum levels; (b) most households, irrespective of their livelihoods, benefitted very little from public risk management policies and dispensations; (c) Because of limited resources or inability to access or leverage public programs, the livelihood activities are disproportionately impacted negatively by shocks trends or seasonality; and (d) The lack of resources and external support constrain households' ability to build resilience, and to sustain their livelihoods above a given food security threshold should events such as a natural disaster or economic shock were to occur.

#### *3.4.5. Poor policy implementation*

The vulnerable livelihoods profiled in this study are located mainly in the same parishes that the Country Poverty Assessments recorded as having the highest levels of poverty. It would appear therefore that the policies to reduce poverty and vulnerability to food insecurity over the past decade were poorly implemented and hence did not produce the outcomes envisaged by proponents of these policies. In turn this contributes to sustaining these vulnerable livelihoods just at or below an acceptable food and nutrition security threshold.

#### *3.4.6. Exogenous Factors*

Factors outside the control of policy makers, such as natural disasters, crises on the world economy, pandemic such as COVID-19, etc., have significant negative impacts on vulnerable livelihoods. These livelihoods do not have the resources

to respond to or build resilience against these exogenous shocks. While public assistance and support are usually available, these are not well-targeted or managed, and the vulnerable livelihoods do not benefit fully from these risk management supports.

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## 4. Discussion

This study has identified five livelihoods that are most vulnerable to food and nutrition insecurity in SKN, SVG and Jamaica. Except for the Inner- City Livelihood that was identified only for Jamaica, the other vulnerable livelihoods exist in all three countries. Several factors have been identified that drive the livelihoods' vulnerability to food and nutrition insecurity, and therefore require focused and deliberate actions. All three countries have policies and strategies that can address the challenges faced by the vulnerable livelihoods identified in this study. Unfortunately, these policies and strategies are poorly implemented, an observation also made elsewhere (2, 14). This issue must be corrected as a matter of urgency. In this regard, two recommendations are proposed here:

### 4.1. Align National Policies and Action Plans to the United Nations Sustainable Development Goals (SDGs)

The SDGs came into effect in January 2016 and now define the development agenda (Agenda 2030), of all developing countries up to 2030. The SDGs cover economic and social outcomes that are consistent with the current development objectives of all three countries in this study and other CARICOM countries (1). By aligning their countries' development strategies to the SDGs overall framework, these can get support for agriculture growth, employment creation, institutional development, community-oriented programs, etc., designed to address the root or structural causes that drive the vulnerability to food and nutrition security of the livelihoods that have been analyzed in this study. Thus, a supportive agricultural policy entails the development/maintenance adequate rural infrastructure (rural markets, farm roads, functioning drainage and irrigation systems), adequate extension services, fair prices for produce and agricultural inputs, etc. In Small-scale/Subsistence farming systems as well as in the other vulnerable livelihoods, support can also take the form of duty-free concessions for small farming implements, fertilizers and pesticides, small-scale agro-processing equipment and cheap credit that can find a solution to some of the criteria required for loans. Similarly, for the working poor and those in inner cities, programs such as microfinance, training, basic health, housing, water and transportation infrastructure, etc., can support much needed income generating activities and other opportunities to enhance food security in these livelihoods.

### 4.2. Good Governance and Policy Coordination

The World Bank's 2017 *World Development Report* posed the question: "What makes policies work to produce life-improving outcomes?". The Report then proffered the answer "better governance", that is, the ways in which governments, citizens, and communities engage to design and apply policies. (14). Recent studies on Governance for Food and Nutrition Security in SKN, SVG and Jamaica (15), recommended that the political leadership in these countries work harder to achieve higher levels of political stability, rule of law, and control of corruption to advance economic development, and by extension, food and nutrition security in the country. In addition, the reports recommended good governance and diligent implementation and coordination of the countries' National Food and Nutrition Security Policies and Action Plans as a matter of urgency to effectively address the key food and nutrition security challenges in the three countries, as well as to provide the public sector support to the livelihoods that are vulnerable to food insecurity in the three countries.

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## 5. Conclusion

This study has identified five livelihoods that are most vulnerable to food insecurity in SKN, SVG, and Jamaica, and the range of factors that drive food insecurity and vulnerability in these livelihoods. These livelihoods all reflect conditions and characteristics that demonstrate low asset portfolios and susceptibility to a range of factors that sustain vulnerability to food and nutrition insecurity. Poverty is a key driver in all these factors, which, singly or combined, restrict choices and constrain the ability of households to maintain food and nutrition security or avoid food and nutrition insecurity. Finally, this study recommends that, as a matter of urgency, the countries align their development policies and strategies to the 2016 Sustainable Development Goals and implement good governance for food and nutrition security. The SDGs have been crafted to address the structural underpinnings of poverty, hunger and the other factors that drive vulnerability to food and nutrition security and will add value and momentum to national programs especially because they will come with significant technical and other resources to support them. Good governance, on the other hand, strives to increase the efficiency with which policy makers manage the food and nutrition security agenda.



## Compliance with ethical standards

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### *Disclosure of conflict of interest*

The authors declare no conflict of interest.

### *Statement of informed consent*

This study was approved by the Ethics Committee of the University of the West Indies. All participants in the key informant, household interviews, and focus group discussion agreed willingly to be part of the study after the details were fully explained to them.

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