



Report on Food Security Indicators for the Nisga'a Nation

Data Sources, Indicators, and Monitoring the State of Food
Security in British Columbia

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Prepared by:

Dr. Adam Perry

Data Analyst

Quality of Life Department, Nisga'a Lisims Government

adamp@niscгаа.net

(250) 635-8050

Written with the support of:

Big River Analytics Ltd.

4795 Merkley Rd. Terrace, BC, V8G0B5

hannes@bigriveranalytics.com

250.922.4999



Nisga'a Lisims Government

Sayt-K'iilim-Goot
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1. Household and Community Food Security

Household food insecurity is the inadequate or insecure access to food due to financial constraints. Food insecurity negatively impacts physical, mental, and social health, and costs the Canadian healthcare system considerably (PROOF, 2018a). In Canada, 1 in 8 households experience food insecurity, and the prevalence of food insecurity has increased significantly from 11.3% in 2007-2008 to 12.4% in 2011-2012 (PROOF, 2018a).

Northern Health defines food security more broadly, as when all people have access to safe, reliable, nutritious, and personally acceptable food, and identifies levels at which food security can be achieved:

- **Community:** a community is food secure when everyone obtains a safe, personally acceptable, nutritious diet through a sustainable food system that maximizes self-reliance and social justice (Adapted from Hamm and Bellows, 2003);
- **Household food insecurity:** is when a household worries about or lacks the financial means to buy healthy, safe, personally and culturally acceptable food. The primary cause of household food insecurity is the lack of sufficient income to purchase food; and
- **Food sovereignty:** is the rights of all people to define their own food system, and to access food in ways that are personally and culturally appropriate (Northern Health, n.d.).

All levels of food security, from household to community, must be achieved concurrently and are dependent on one another (Northern Health, n.d.). There are many factors that affect food security including social and cultural factors, environmental factors, and access to transportation (BC Ministry of Health, 2014). Achieving community food security is complex, and requires collaborations across sectors as food security relies on food systems being healthy, resilient, and sustainable. Although these broader factors are important, most measures of food security focus on income constraints and food security at the household level.

Food security itself is often an indicator of poverty and health. For example, the Provincial Health Services Authority (PHSA) and PROOF Food Insecurity Policy Research's (PROOF) report *Priority health equity indicators for British Columbia: Household food insecurity indicator report* investigates food security as an equity healthy priority indicator for British Columbia (PHSA & PROOF, 2016). Food security is also included as an indicator to measure poverty in Canada in the most recent national poverty reduction strategy (PROOF, 2018b).



2. Data Collection, Monitoring and Other Food Security Indicators

In Canada, household food security is measured by Statistics Canada using the Household Food Security Survey Module (HFSSM)¹ of the Canadian Community Health Survey (CCHS)² (see Appendix I for data collection details and limitations).

Based on a household's experience, a household is food secure if there is no indication of difficulty with income-related food access. PROOF, an interdisciplinary research team³ focused on food insecurity in Canada, defines food insecurity by categorizing the number of food insecure experiences at the household level into one of three categories:

1. **Marginal food insecurity:** Concern about running out of food and/or limited food selection due to a lack of money for food.
2. **Moderate food insecurity:** Compromise in quality and/or quantity of food due to a lack of money for food.
3. **Severe food insecurity:** Miss meals, reduce food intake, and at the most extreme go day(s) without food.

PROOF produces annual reports on Household Food Insecurity in Canada, the most recent of which includes data up to 2014. Data for these reports and other PROOF materials rely primarily on data collected from the CCHS. Health Canada, the Public Health Agency of Canada, and Statistics Canada also prepare reports analyzing and monitoring household food security using data from the CHSS, and other sources.

There are no data collection initiatives unique to BC for food security at the household, individual, or community level. A number of provincial authorities, such as Northern Health, the Provincial Health Services Authority, and the BC Centre for Disease Control (BCCDC), produce reports and track indicators measuring food security. Many of these reports and monitoring efforts rely on household level HFSSM data from the CCHS, combined with other data sources, to monitor food security within each health authority region.

Given the lack of consistent indicators used to monitor food security, the Provincial Health Services Authority's Population and Public Health Program initiated a multi-phased project

¹ Household Food Security Survey Module (HFSSM) is comprised of 18 questions focusing on self-reports of food access at the household level for the previous year (Government of Canada, 2012). The module is a scale of food security severity that measures inadequate or insecure access to food due to financial constraints (PROOF, 2018b).

² Canadian Community Health Survey (CCHS) is a cross sectional survey administered by Statistics Canada that collects health-related information from about 60,000 domiciled Canadians per year. Importantly, CCHS is not administered to some populations that are at a much higher risk of food insecurity, including First Nations living on-reserve, individuals who are incarcerated, or individuals who are homeless (PROOF, 2018b).

³ PROOF includes co-investigators from the University of Toronto, the University of Illinois at Urbana-Champaign, the University of Calgary, Memorial University, and the Centre for Addiction and Mental Health.



(Implementing Food Security Indicators) to create a standardized set of food security indicators for health authorities across the province (PHSA, 2010). This project culminated in the development and testing of six indicators aiming to measure organizational commitment to food security, community capacity, personal and household food security, and local food production and access using existing and primary data. This report likewise identified resulting gaps in the indicator framework. Table 2 summarizes the six recommended indicators and provides high-level description of their construction, alongside additional identified data sources that measure similar concepts.

One key input to food security indicators is the local monetary cost of food, which directly affects whether an individual, household, or community has the capacity to be food secure. Food costing has been examined at the national and provincial level. The BCCDC's report *Food Costing in BC 2017: Assessing the affordability of healthy eating* presents data on the average monthly cost of a nutritionally adequate diet in the province (2018). This data is collected and assessed every two years in BC, with data collection implemented by regional health authorities. Estimates for the average monthly cost of a nutritious food basket can be used in compiling certain food security indicators, including those recommended by the PHSA.

For the Nisga'a Villages in the Nass Valley and Nisga'a in Urban Local areas, the Nisga'a Lisims Government (NLG) has collected data through household questionnaires to measure food security. The questionnaire seeks to understand households' experiences and challenges accessing food, the degree to which they may be food insecure, and priority household needs, along with information on what local government is and could be doing to better support food security. One of the questions from the NLG questionnaire on food security asks households the number of times a day the household consumed food. Households either had adequate and sufficient food access, ate one to two times a day, or did not eat at all in a day. This question differs slightly from the approach of the HFSSM questionnaire where households are asked various questions regarding whether any children or adults in a household either did not eat for a whole day or skipped meals due to insufficient income to buy food over the last 12 months (see Appendix IV).

There has been increasing demand from various levels of government and other organizations (health authorities in particular) for consistent, reliable, accessible data to monitor food security, with organizations advocating to make the HFSSM mandatory for every CHSS cycle. Further discussion on gaps and recommendations for improved data collection are included in Section 4.

Table 1 summarizes relevant indicators and data resources used to measure food security at the national level. Table 2 presents more detailed information on the six recommended PHSA indicators, information on how they can be constructed for the Northern Health Authority, as well as additional public data sources for more local geographies and higher frequency data releases than the latest provincial report. Additional indicators of interest at the provincial level are likewise included. Table 3 presents information collected by Nisga'a Lisims Government on food security in the Nass Valley and Urban Local areas. Section 3 presents the most relevant available data from each table for the most locally available geography.



Table 1: Food Security Indicators and Data Resources for Canada

Food Security Survey Data – National			
Resource (public release dates)	Indicators	Relevance ⁴ : Geographic/ Indigenous ID	Source Link
Canadian Community Health Survey (CCHS), Household Food Security Survey Module (HFSSM) (annual since 2007 - latest 2018. See Appendix I)	Food secure Food insecure, moderate Food insecure, severe	Canada and BC* Yes *BC excluded from survey for select years. See Appendix I.	Household food insecurity, by living arrangement and food insecurity status https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310046101 Household food insecurity, by age group and food insecurity status https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310046301 Household food insecurity, by presence of children in the household and food insecurity status https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310046201 Health indicator by profile, by Aboriginal identity and sex, age-standardized rate , four year estimates https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310009901
Food Banks Canada (2014, 2015, 2015, 2018)	Number of visitations to a food bank in a region	Canada and BC No	HungerCount Archives https://www.foodbankscanada.ca/HungerCount-Archives.aspx

⁴ Geography refers to the smallest geographical area public data can be disaggregated to; and Yes/No refers to the ability to disaggregate by Indigenous identifier at the stated geography.



Table 2: Food Security Indicators and Data Resources for British Columbia

Provincial Health Services Authority - Food Security Indicators Framework		
Indicator	Geography, Indigenous ID	Required Calculations and Data Sources
Organizational Commitment to Food Security & Community Capacity (A1 & A2)		
A1 Food Security Policy Present	A1 & A2a: Health Authority Level N/A	A1 - PHSA collected data on existing health policies through an online survey to regional health authorities. Data Source: By request from PHSA
A2a Proportion of communities with actions supported through Community Food Action Initiative		A2a - PHSA collected data on existing CFAI-supported activities through an online survey to regional health authorities. Data Source: By request from PHSA
A2b Presence of local food security organizations (Recommended proxy)	A2b: Regional N/A	A2b - The BC Food Security Gateway provides lists of food security networks, policy councils, resources and agencies across the province. Data Source: BC Food Security Gateway, n.d.
Personal and Household Food Security (A3, A4, A5, A6)		
A3a Average cost of nutritious food basket		A3a - The BCCDC uses data collected by regional health authorities on Health Canada's National Nutritional Food Basket to calculate the monthly cost of the nutritious food basket across BC health authorities. *Data Source: Individual household level data available by request from BCCDC
A3b Average annual cost of nutritious food basket as proportion of family income (by family type)	A3a, A3b & A3c: Health Authority* No	A3b - Calculated as a proportion of average annual cost of a nutritious food basket for a family type in a health authority per median pre- tax family income for a given family type in a health authority. Data Source: Cost of a Nutritious Food Basket by request from BCCDC. Income data from Statistics Canada's Census Profile for BC prepared by the BCSTATS, BC Ministry of Labour and Citizen's Services, and the Canada Census Public Use Microdata File.
A3c Average annual cost of nutritious food basket as proportion of family income		A3c - Calculated as a proportion of average annual cost of a nutritious food basket for a family type in a health authority per after- tax Low Income Cut- offs, based on a community of 30,000 to 99,999 people, for given family size. Data Source: Cost of a Nutritious Food Basket by request from BCCDC. Income data from Statistics Canada's Low Income Cut- offs and Low Income Measures.
A3d Household expenditure on food (Additional Proxy)	A3d: Canada, and BC No	A3d - Average expenditure per household on food purchased from stores.



		Data Source: Statistics Canada, Household spending, Canada, region and provinces from the Survey of Household Spending.
A4a Proportion of the population with diagnosis of diabetes	A4a & A4b: Health Authority Level	A4a - Calculated as the proportion of the BC population within a health authority with a diagnosis of diabetes. Data Source: BC Ministry of Health Service data for proportion of people currently diagnosed with diabetes (as reported in the Quantum Analyzer PHC Knowledge Base, version 2.0). The BCCDC provides data on rates of diabetes at the provincial and health authority level (chronic disease incidence rates for Northern Health).
A4b Proportion of the population with self-reports of BMI (≥ 25)	No	A4b - Calculated as the proportion of the BC population within a health authority that self-reports a BMI that meets Health Canada's definition of overweight or obese (≥ 25). Data Source: Statistics Canada, CCHS data on self-reported BMI (responses to HWT_Q2 & HWT_Q3 in the Height and Weight – Self Reported Module).
A5a Proportion of the BC population that eats fruits and vegetables five or more times per day	A5a: Health Authority Level Yes*	A5a - Calculated as a proportion of the population reporting that they eat fruits and vegetables more than five times per day, across income quartiles, place of residence, and age group. This indicator measures the frequency of fruits and vegetables consumption, specifically the proportion of the population within each health authority that eats fruits and vegetables five or more times per day. *by request, also note, would not include on-reserve population Data Source: Statistics Canada, CCHS data on fruit and vegetable consumption (responses to FVC_Q2A & FVC_N2B; FVC_Q4A & FVC_N4B; FVC_Q5A & FVC_N5B; and FVC_Q6A & FVC_N6B in the Fruit and Vegetable Consumption Module).
A5b Children's consumption of fruits and vegetables in BC Schools (Additional Proxy)	A5b: School District and School Level No	A5b - Number of servings of fruits and vegetables consumed in the previous 24 hours by grade school students in BC. Data Source: The Government of British Columbia, through their Data Catalogue, provides data from the BC Schools Satisfaction Survey (Alternate Responses, QUESTION_LABEL_LONG_DESCR: How many health servings?).
A6 Proportion of the BC population that always had enough of the foods they wanted to eat in the last 12 months	A6: Household Level Yes*	A6 - The proportion of households reporting that they had consistent access to the foods they wanted to eat in the previous 12 months, by poverty and non-poverty households. This measure compares food security in households designated as poverty or non-poverty based on household income. Data Source: Statistics Canada (responses to FSC_010 in the Household Food Security Module). *by request, also note, would not include on-reserve population



Table 3: Food Security Indicators and Data Resources for Nisga'a Villages in Nass Valley, and Urban Local Areas

Nisga'a Lisims Government Collected Indicators			
Measuring	Indicator	Geography*	Data Sources
Access to food	1. Access to food in community	Aggregate - 4 Villages of the Nass Valley Aggregate - Urban Areas	1. Calculated as the proportion of households in the Nisga'a Villages Nass Valley community for whom it is not easy to access food.
Challenges faced in accessing food	2. Distance to food shops as a barrier to food access 3. Access to food due to rising costs 4. Transportation to access food 5. Presence of local food shops	Aggregate - 4 Villages of the Nass Valley Aggregate - Urban Areas	2. Calculated as the proportion of households in the Nisga'a Villages Nass Valley community for whom the distance to shops is an issue in accessing foods. 3. Calculated as the proportion of households in the Nisga'a Villages Nass Valley community who experienced the rising cost of food as a concern in accessing food. 4. Calculated as the proportion of households in the Nisga'a Villages Nass Valley community who lacked transportation to access food. 5. Calculated as the proportion of households in the Nisga'a Villages Nass Valley community who indicated that there are no local shops to help them access food.
Food security	6. Frequency of food eaten per day	Aggregate - 4 Villages of the Nass Valley Aggregate - Urban Areas	6. Calculated as the proportion of households in the Nisga'a Villages Nass Valley community by frequency of how many times the household ate in a day.
Supports from local government	7. Perceived support from local government	Aggregate - 4 Villages of the Nass Valley Aggregate - Urban Areas	7. Calculated as the proportion of households in the Nisga'a Villages Nass Valley community who do not believe local government is doing enough to support one's food security needs.
Ideas on food security supports	8. Support for food subsidy programs 9. Support for local grocery store partnerships 10. Support for improved transportation for food access	Aggregate - 4 Villages of the Nass Valley Aggregate - Urban Areas	8. Calculated as the proportion of households in the Nisga'a Villages Nass Valley community who felt food subsidy supports (funds or coupons) would help families. 9. Calculated as the proportion of households in the Nisga'a Villages Nass Valley community who suggested making better partnership initiatives with local grocery stores in the area would help lower food costs.



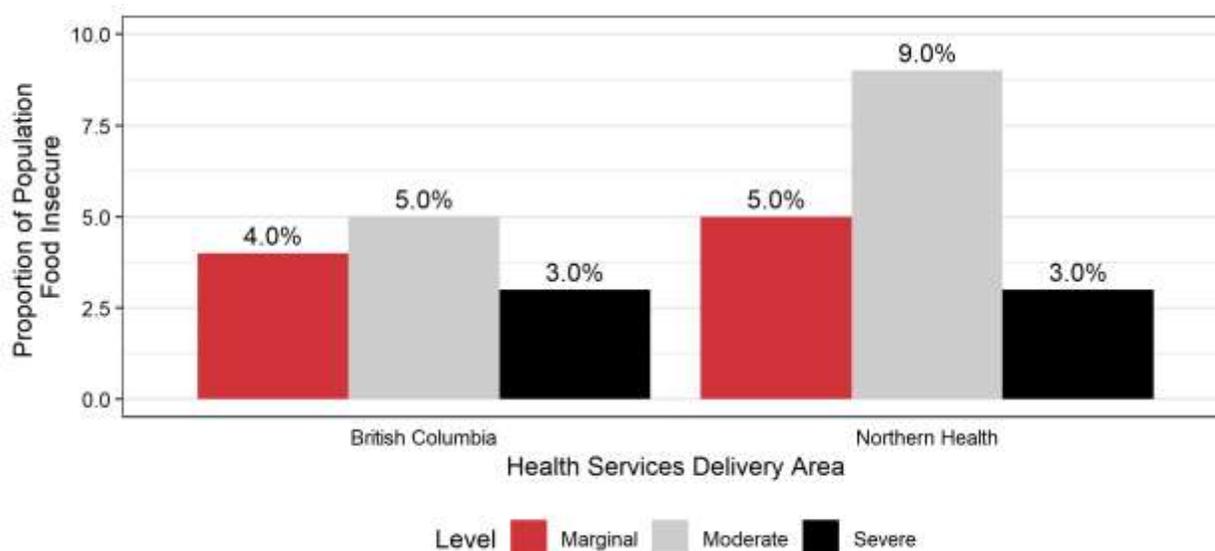
			10. Calculated as the proportion of households in the Nisga'a Villages Nass Valley community who suggested that better local transportation options would facilitate savings families could apply to buying groceries.
Priority household needs	11. Top priority for households	Aggregate - 4 Villages of the Nass Valley Aggregate - Urban Areas	11. Calculated as the proportion of households in the Nisga'a Villages Nass Valley community who indicated what their household desired the most was food.
<p>*For this report, household survey data is presented as the total household responses for all 4 villages in the Nass Valley and Urban Local areas. Survey responses can also be presented for individual Nisga'a Urban Local areas (Vancouver, Terrace and Prince Rupert), the Nisga'a Nation overall, or disaggregated by village.</p> <p>Source: Nisga'a Nation Household Survey 2018/2019</p>			



3. Key Statistics on Food Security for BC, the Nisga'a Nation and Surrounding Regions

Figure 1 presents the proportion of households experiencing different levels of food insecurity, as defined by PROOF using CCHS data for BC and Northern Health. The Northern Health area experienced higher proportions of the population who were marginally and moderately food insecure in 2011/2012 than BC. At 9.0%, the proportion of the population who are moderately food insecure in the Northern Health region is at a rate nearly double that of the province as a whole (5.0%). Both BC and Northern Health had the same proportions of the population who were severely food insecure.

Figure 1: Levels of Food Insecurity, Northern Health and BC 2011/12

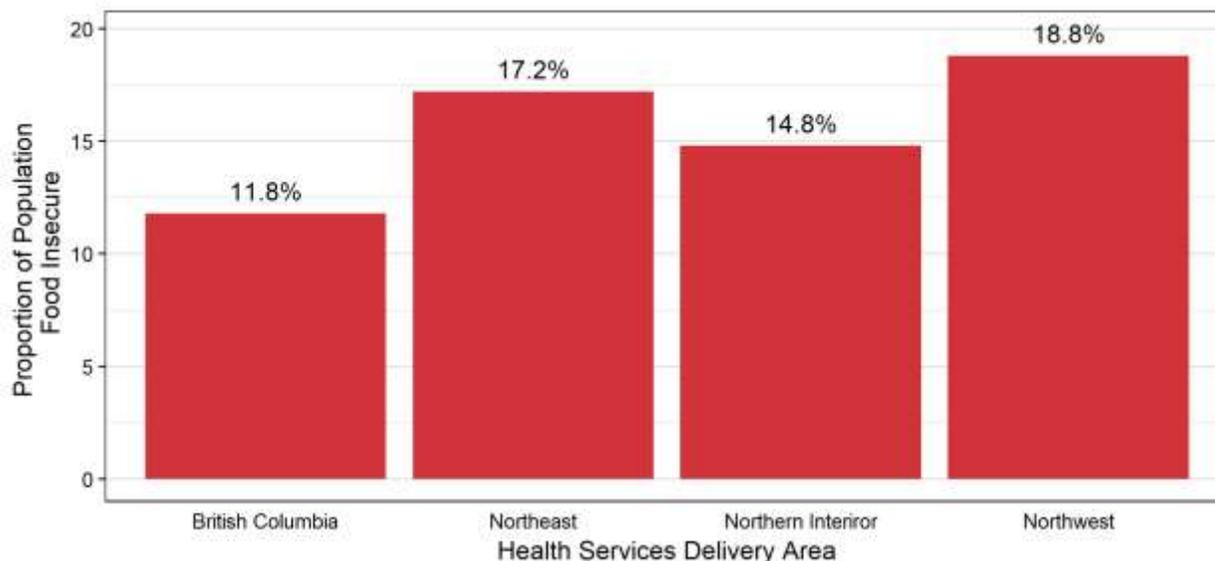


Source: Provincial Health Services Authority. (2016). Northern Health: Household food insecurity in 2011-2012. Vancouver, BC: PHSA Population & Public Health Program.

Figures 2 through 8 present indicators that align with those recommended by the PHSA (see Table 2) and for which public data for the local area is available (generally the Northwest Health Services Delivery Area (HSDA)).



Figure 2: Proportion of Food Insecure Population, Northern Health Health Services Delivery Areas and BC Overall, 2011-2012

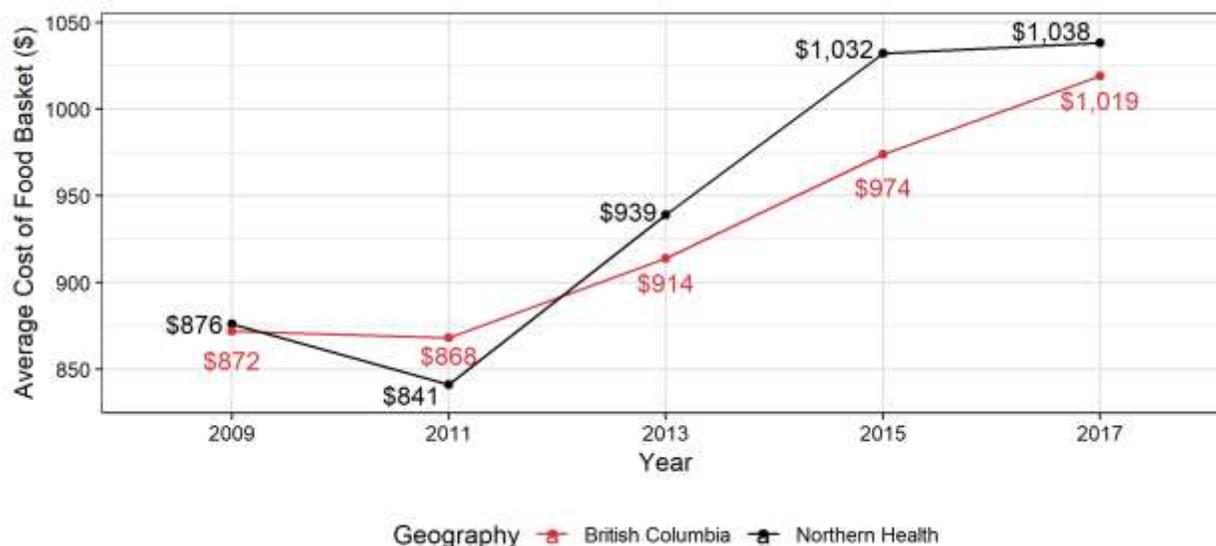


Source: Provincial Health Services Authority (PHSA) & PROOF Food Insecurity Policy Research. (2016). Priority health equity indicators for British Columbia: Household food insecurity indicator report.

Figure 2 shows the proportion of the population for BC and Northern Health HSDAs that experiences some degree of food insecurity, that is, having a score one or more affirmative responses on the HFSSM child or adult scale for 2011-12 (see Appendix 2 for additional HSDA comparisons). The Northwest HSDA, has a higher proportion of food insecure households than other HSDAs in the Northern Health area, and BC overall.



Figure 3: Average Monthly Cost of Nutritious Food Baskets Overtime, BC and Northern Health, 2009 - 2017



Sources:

- Dietitians of Canada. (2009). Cost of Eating in BC 2009. Dietitians of Canada, BC Region.
- Dietitians of Canada. (2012). Cost of Eating in British Columbia 2011. Dietitians of Canada, BC Region.
- Provincial Health Services Authority. (2014). Food Costing in BC 2013. Vancouver, B.C.: Provincial Health Services Authority, Population and Public Health Program.
- Provincial Health Services Authority. (2016). Food Costing in BC 2015. Vancouver, B.C.: Provincial Health Services Authority, Population and Public Health Program.
- BC Centre for Disease Control. (2018). Food Costing in BC 2017: Assessing the affordability of healthy eating. Vancouver, B.C.: BC Centre for Disease Control, Population and Public Health Program.

Figure 3 shows the average cost of nutritious food baskets from 2009 to 2017 for British Columbia and the Northern Health region. The food basket examined is the average monthly cost of a nutritionally adequate diet in BC based on the National Nutritious Food Basket (NNFB), a tool used by governments across Canada to monitor the cost and affordability of healthy eating comprised of 67 food items (BCCDC, 2018). The cost of an adequately healthy diet in BC has been rising over time; however research has shown the strongest predictor of food insecurity is household income (BCCDC, 2018).

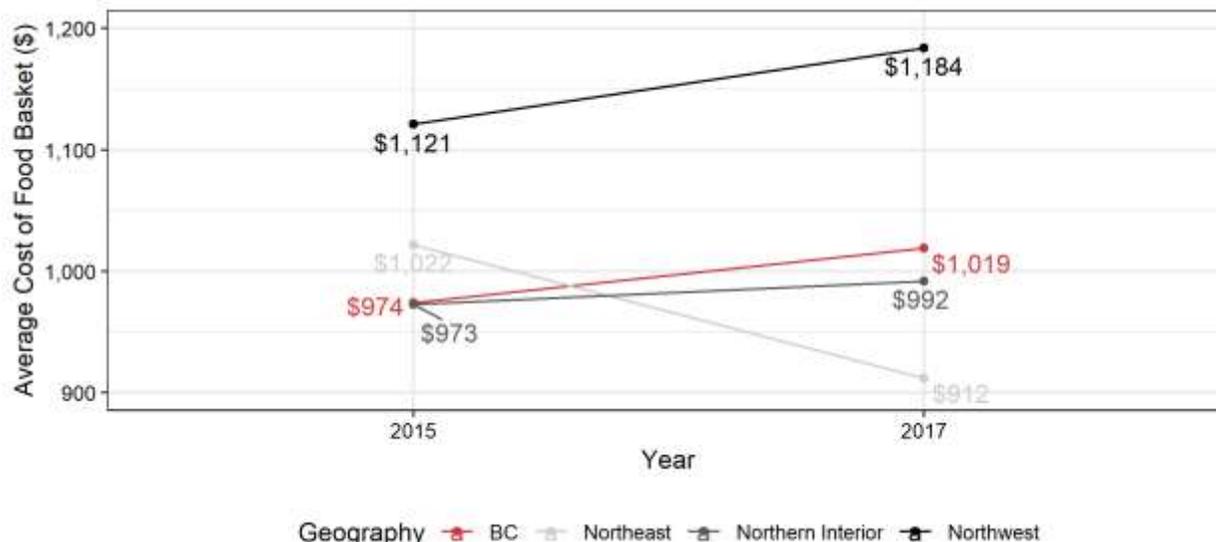
While the average basket cost for Northern Health fell below the provincial average in 2011, Northern Health has experienced a higher average cost of a nutritious food basket relative to the rest of the province since 2013. Notably, food prices observed in the Northern Health (\$1,032) region exceeded the provincial average (\$974) by the largest margin in 2015, costing on average \$58 more.

Figure 4 presents the average cost of nutritious food baskets from 2015 to 2017 for BC and Northern Health HSDAs. The Northwest HSDA, has experienced the highest average nutritious food basket cost in recent years relative to other Northern Health HSDAs and the province. In 2015, the Northwest HSDA had an average basket cost of \$1,121, whereas the other HSDA



average costs ranged between \$973 and \$1,022 with the province at \$974. Similar to the province and the Northern Interior HSDA, the average basket cost rose in 2017 for the Northwest HSDA to \$1,184. The average basket cost fell for the Northeast HSDA from \$1,022 in 2015 to \$912 in 2017. The inclusion or exclusion of high-end health food grocery stores greatly influences the results of the basket cost calculations, as noted by BCCDC in their most recent provincial food costing report (BCCDC, 2018).

Figure 4: Average Monthly Cost of Nutritious Food Basket, BC and Northern Health Health Services Delivery Areas, 2015 - 2017



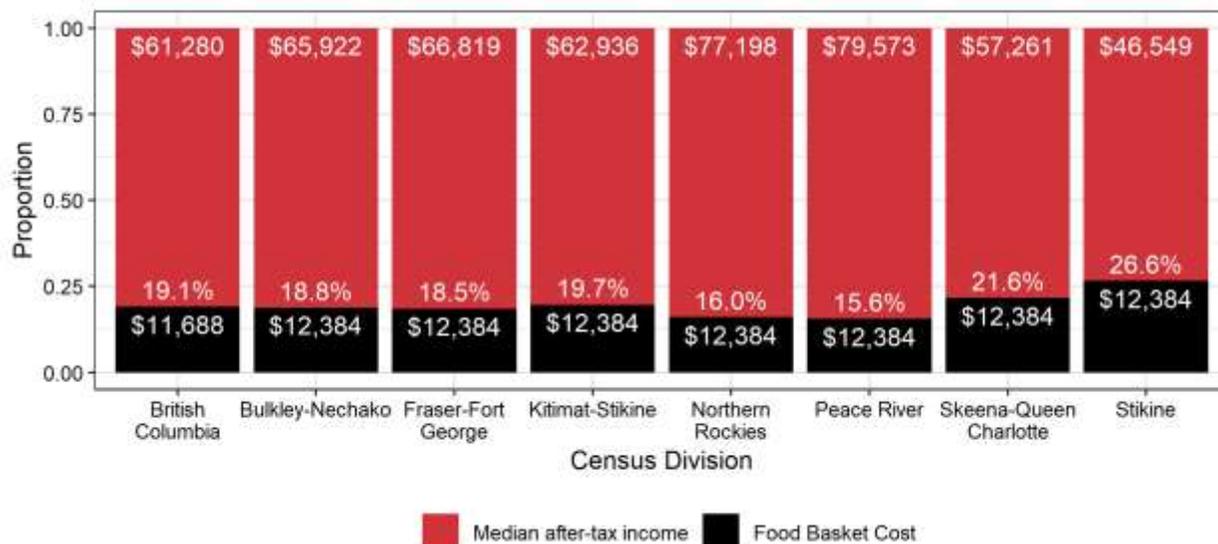
Sources: Provincial Health Services Authority. (2016). Food Costing in BC 2015. Vancouver, B.C.: Provincial Health Services Authority, Population and Public Health Program.

BC Centre for Disease Control. (2018). Food Costing in BC 2017: Assessing the affordability of healthy eating. Vancouver, B.C.: BC Centre for Disease Control, Population and Public Health Program.

Figure 5 shows the annual cost of a nutritious food basket as a proportion of family income for BC and Census Divisions within Northern Health for 2015. Within Northern Health, the Skeena-Queen Charlotte census division (where Prince Rupert is located) has the second highest proportion at 21.6% after the Stikine census division at 26.6%. The Skeena-Queen Charlotte division's annual costs of nutritious food basket as proportion of family income is over 2% higher than the proportion for all of BC, which was 19.1% in 2015.



Figure 5: Annual Costs of Nutritious Food Basket as Proportion of Family Income, Census Divisions within Northern Health, 2015

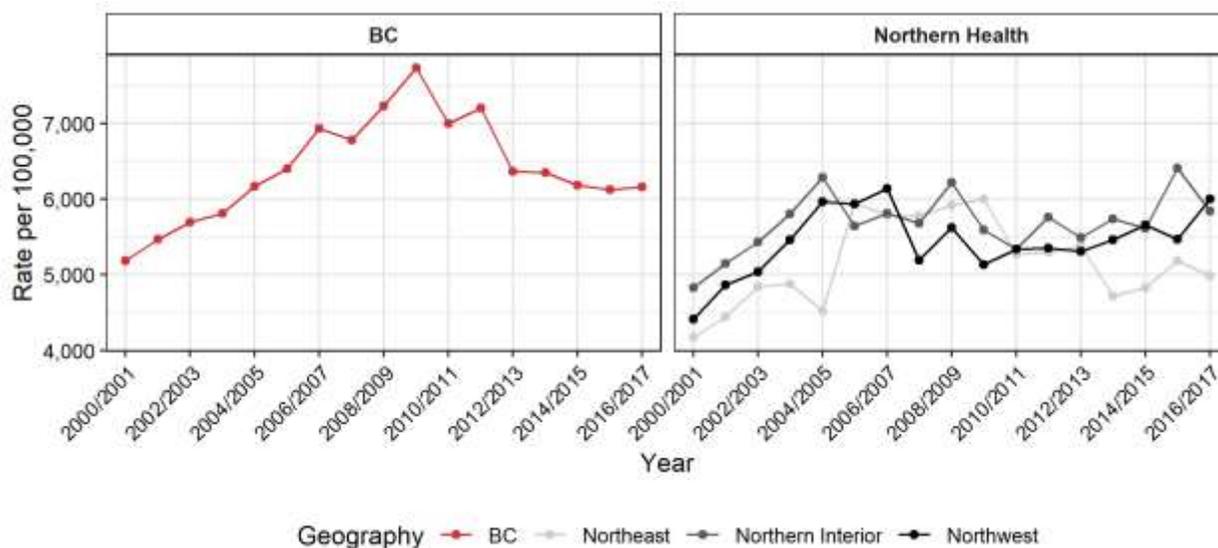


Sources: Provincial Health Services Authority. (2016). Food Costing in BC 2015. Vancouver, B.C.: Provincial Health Services Authority, Population and Public Health Program.

Statistics Canada. 2017. British Columbia. Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017.

The presence of health conditions associated with unhealthy eating habits can be an indicator of food security. The PHSA (2010) uses both diabetes and obesity as food security indicators.

Figure 6: Instances of Diabetes, Rate Per 100,000, BC and Northern Health HSDAs, 2000/2001 to 2016/2017

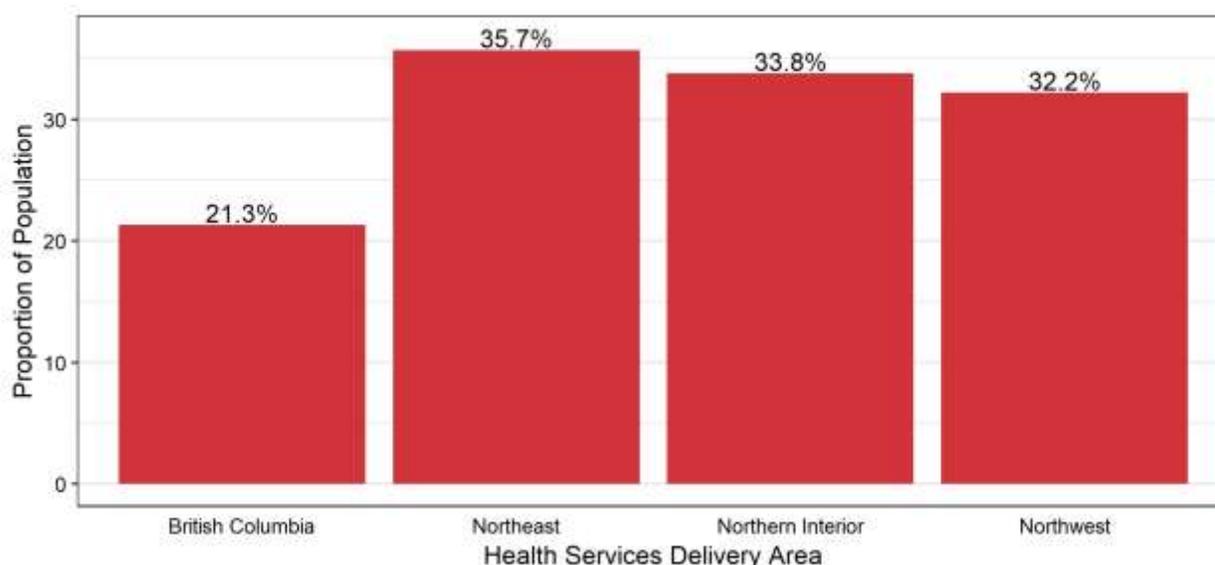


Source: British Columbia Centre for Disease Control (BCCDC). (n.d.). Chronic Disease Dashboard.



The prevalence of these conditions may indicate barriers to healthy food not only due to financial constraints, but also from access to, and awareness and availability of healthy food (PHSA, 2010). Figure 6 presents the rate per 100,000 of instances of diabetes from 2000 to 2017 for BC and Northern Health HSDAs. The proportion of British Columbians diagnosed with diabetes peaked between 2009 and 2010 at 7.7%. It is notable Northern Health HSDAs have lower rates of diabetes than the province throughout all seven years. Figure 6 shows the proportion of the population who are obese in BC and in each Northern Health HSDA. The population in each of Northern Health HSDAs have higher rates of obesity than the proportion of the province (21.3%). In the Northwest HSDA, 32.2% of the population is classified as obese, the lowest rate among the three Northern Health HSDAs.

Figure 7: Proportion of Population Obese, BC and HSDA, 2015/2016



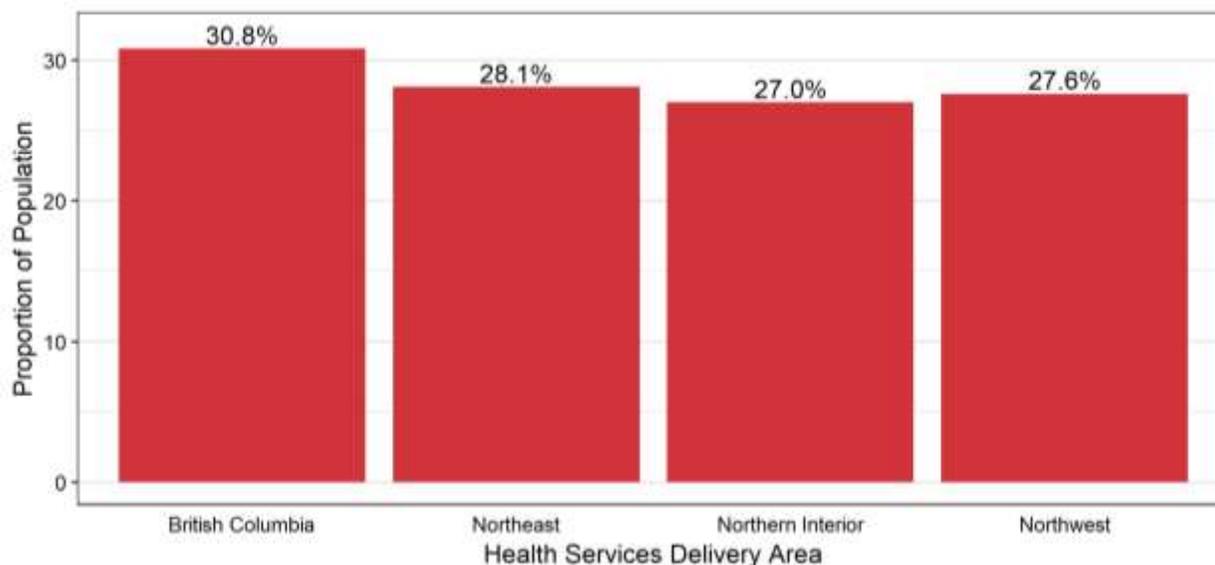
Source: Statistics Canada. Table 13-10-0113-01 Health characteristics, two-year period estimates

*Obese defined as: Body mass index ≥ 25 , adjusted self-reported, adult (18 years and over)

The consumption of fruits and vegetables is a measure of personal nutrition habits, which are a function of access to and personal awareness of healthy foods (PHSA, 2010). Figure 7 presents the proportion of the population for BC and the Northern Health HSDAs that consumed fruits and vegetables five or more times per day for 2015 to 2016. The proportion of the population for BC is higher than that of the select HSDAs, at 30.8%. The Northwest HSDA has a proportion of 27.6%, slightly higher than that of Northern Interior at 27.0%, and lower than the Northeast proportion of 28.1%. Affordability of healthy foods in northern BC could be influencing the low frequency of fruit and vegetable consumption.



Figure 8: Proportion Reporting Eats Fruits and Vegetables Five or More Times per Day BC and HSDA, 2015/2016

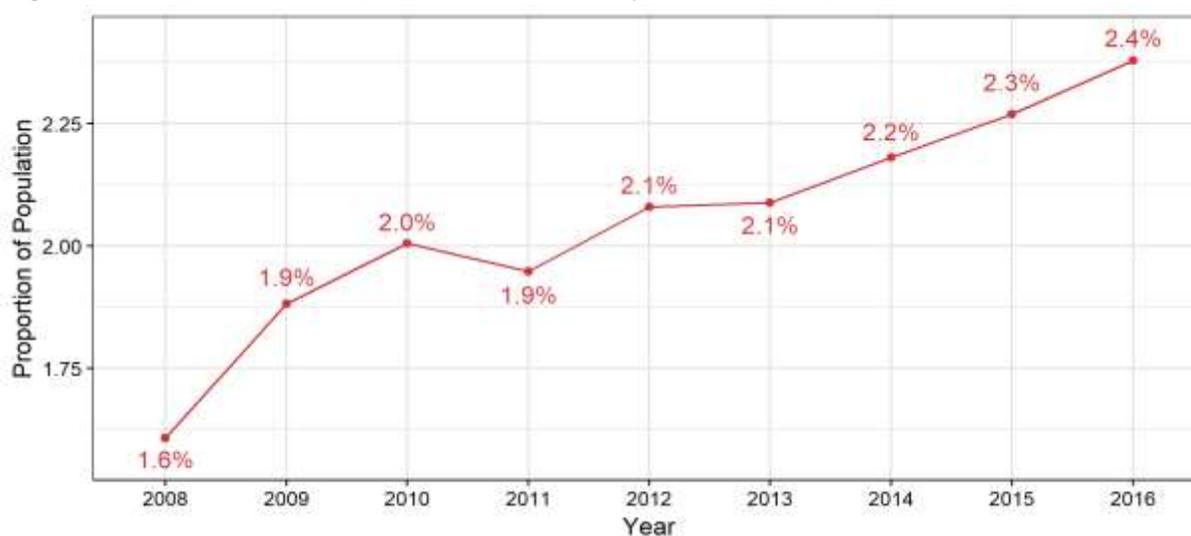


Source: Statistics Canada. Table 13-10-0096-01 Health characteristics, annual estimates

Although not PHSA recommended indicator, usage of food banks can provide insights into the affordability of and access to food. Data on food bank usage is available for BC. In March 2018, there were a total of 87,222 food bank visits in BC by adults, and 39,510 by children.

Figure 9 shows the proportion of the BC population assisted by food banks from 2008 to 2016. The proportion of the population utilizing food banks in BC has increased every year from 1.6% in 2008 to 2.4% in 2016, with the exception of 2011 where the proportion fell to 1.9%.

Figure 9: Proportion of Population Assisted by Food Banks, BC, 2008 to 2016

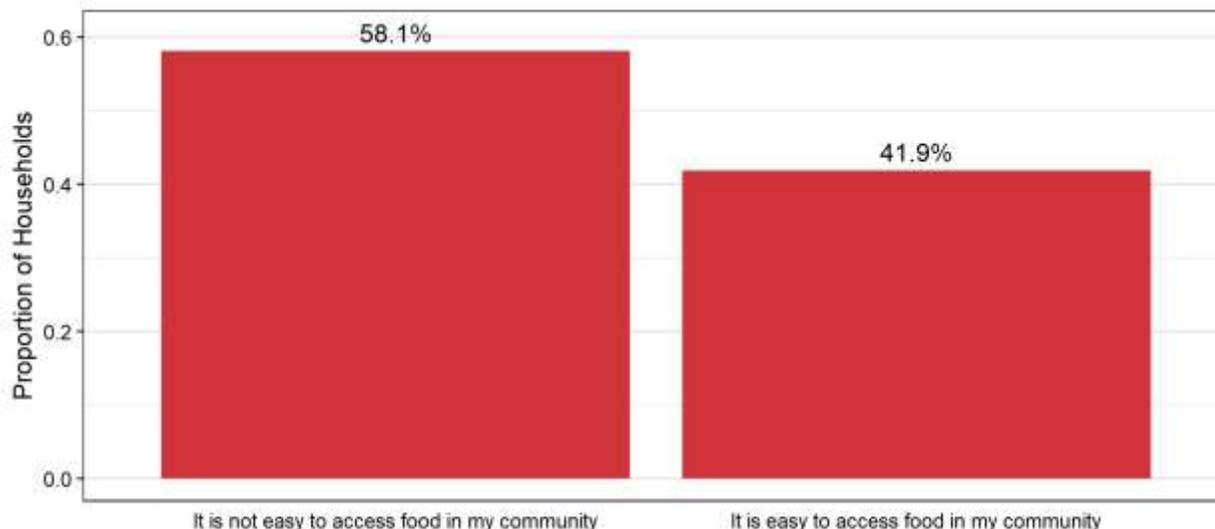


Food Banks Canada (2016). Hunger Count 2016. Toronto: Food Banks Canada.



Figures 10 to 21 present indicators of food security using data collected from Nisga'a Village households in the Nass Valley, and households in Urban Local areas (see Table 3).

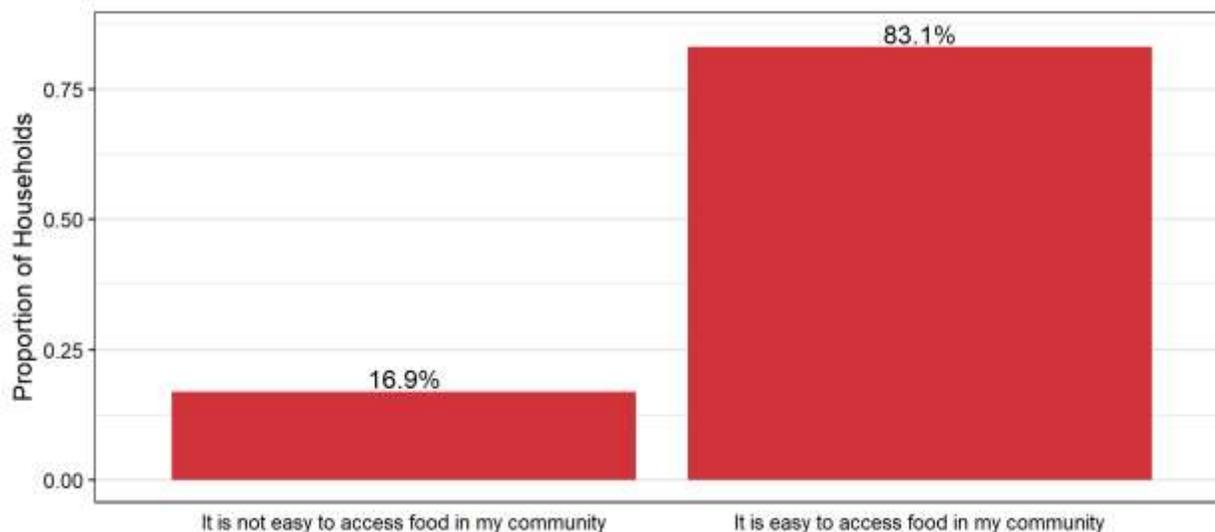
Figure 10: Accessing Food, Proportion of Households, Nass Valley, 2018/2019



Source: Nisga'a Nation Household Survey 2018/2019. Sample size - 327

Figure 10 and 11 shows the proportion of households in the Nisga'a Villages in the Nass Valley and Urban Local areas respectively, who find it difficult or easy to access food in their community.

Figure 11: Accessing Food, Proportion of Households, Urban Local Areas, 2018/2019



Source: Nisga'a Nation Household Survey 2018/2019. Sample size - 236

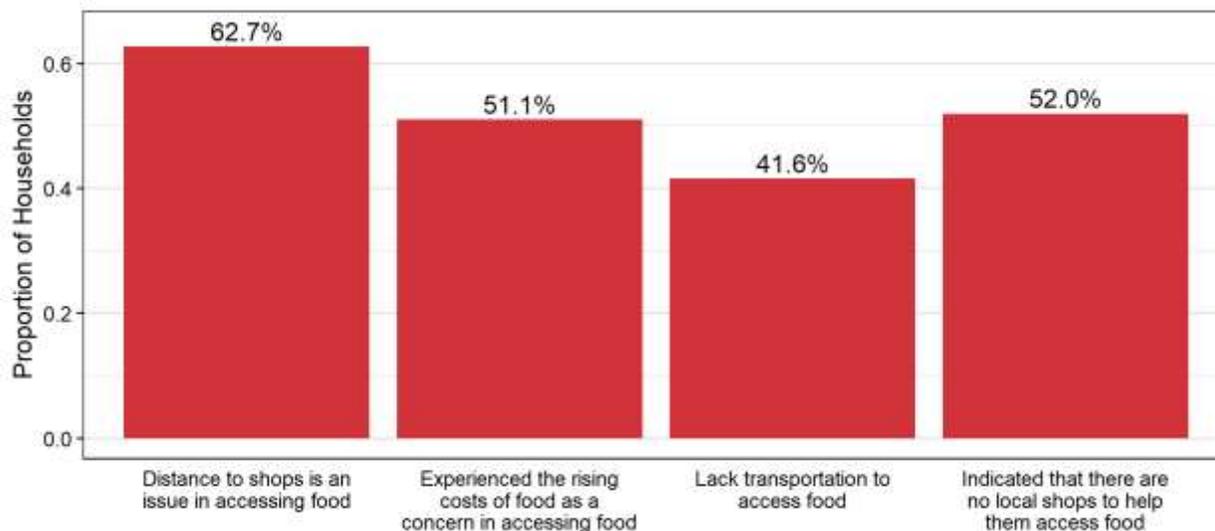
Over half (58.1%) of households in Nisga'a Villages find access to food in their community it is not easy, while the majority (83.1%) of households in Urban Local areas find it is easy to access



food in their community. Relative access to food in Nisga'a Villages may be more challenging than for households residing in Urban Local areas.

Nass Valley households and households in Urban Local areas also identified challenges they are facing in accessing food in their community. Of the 327 households in Nass Valley surveyed, the most prevalent of the four factors limiting food access was the distance to the nearest store (see Figure 12). 62.7% of Nass Valley households found that the distance to shops was an issue in accessing food, whereas only 41.6% found lack of transportation a challenge.

Figure 12: Challenges in Accessing Food, Proportion of Households, Nass Valley, 2018/2019

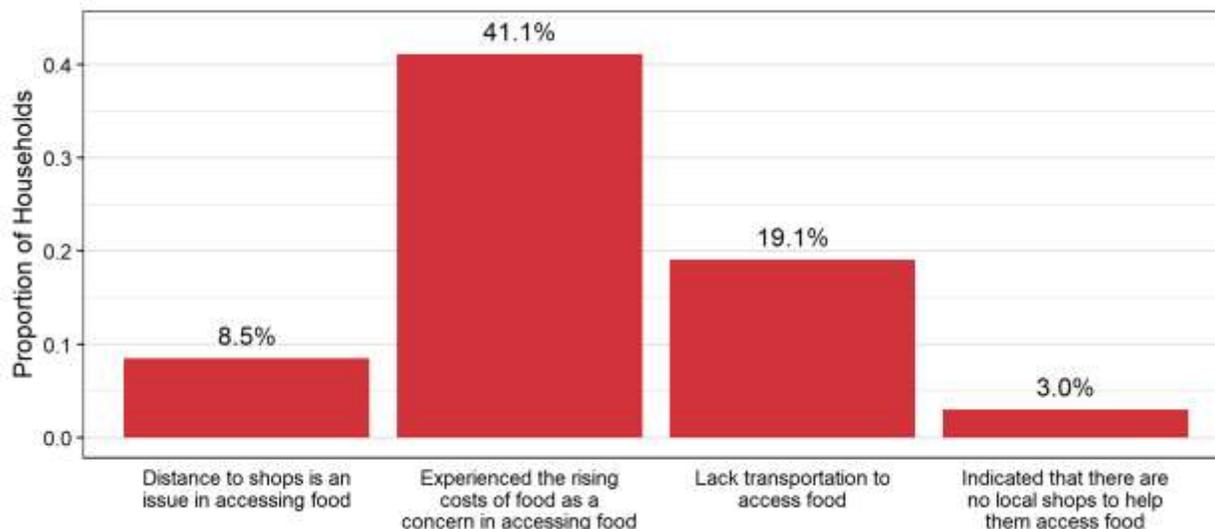


Source: Nisga'a Nation Household Survey 2018/2019. Sample size - 327, multiple responses per household

Of the 236 households in Urban Local areas (see Figure 13), the most prevalent factor limiting food access was the rising costs of food (41.1%), second to access to transportation (19.1%). Only 3.0% of households indicated that there are no local shops to help them find food. A larger relative share of households in the Nass Valley felt that each of these factors (distance to the shops, rising food costs, lack of transportation, and availability of local shops) presented a challenge in accessing food than the share households in Urban Local areas.



Figure 13: Challenges in Accessing Food, Proportion of Households, Urban Local Areas, 2018/2019

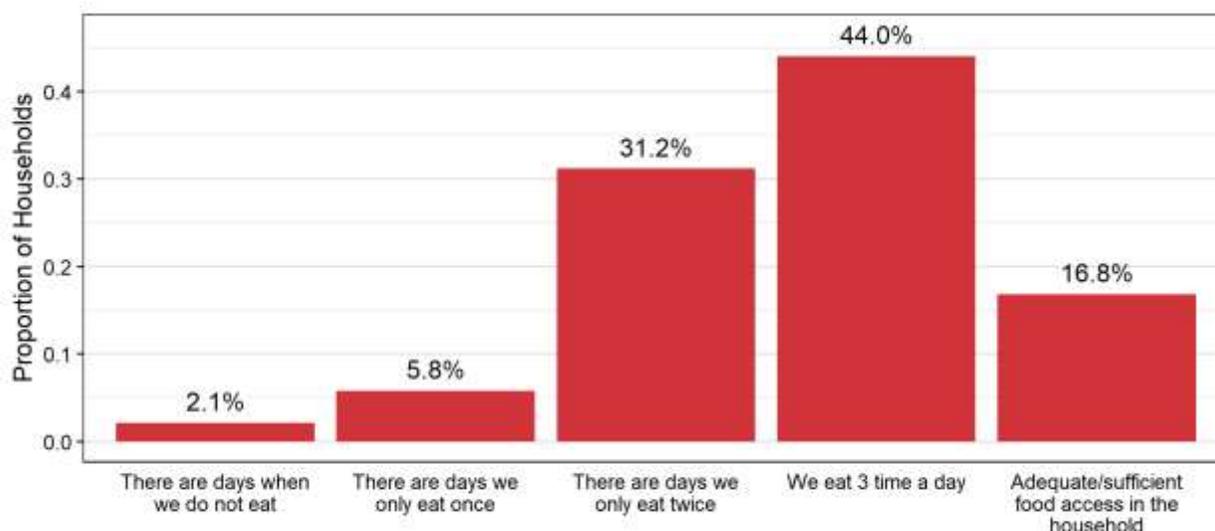


Source: Nisga'a Nation Household Survey 2018/2019. Sample size - 236, multiple responses per household

Figure 14 and 15 show the proportion of Nisga'a Village households in the Nass Valley and in Urban Local areas who face food insecurity by the frequency of food eaten in a day. The Nisga'a Nation Household Survey demonstrates some of the ways households' experiences in the Nass Valley and Urban Local areas differ. The majority of households in Nisga'a Villages find it difficult to access food, and this is reflected in a relatively low number of households (16.8%) who feel that they have adequate/sufficient access to food (see Figure 14). Although the majority of households in Urban Local areas find it easy to access food in their community, only 20.8% feel that they have sufficient/adequate access to food, merely 4 percentage points higher than those households in the Nass Valley suggesting that food security is an issue of concern for households in both areas (see Figure 15).



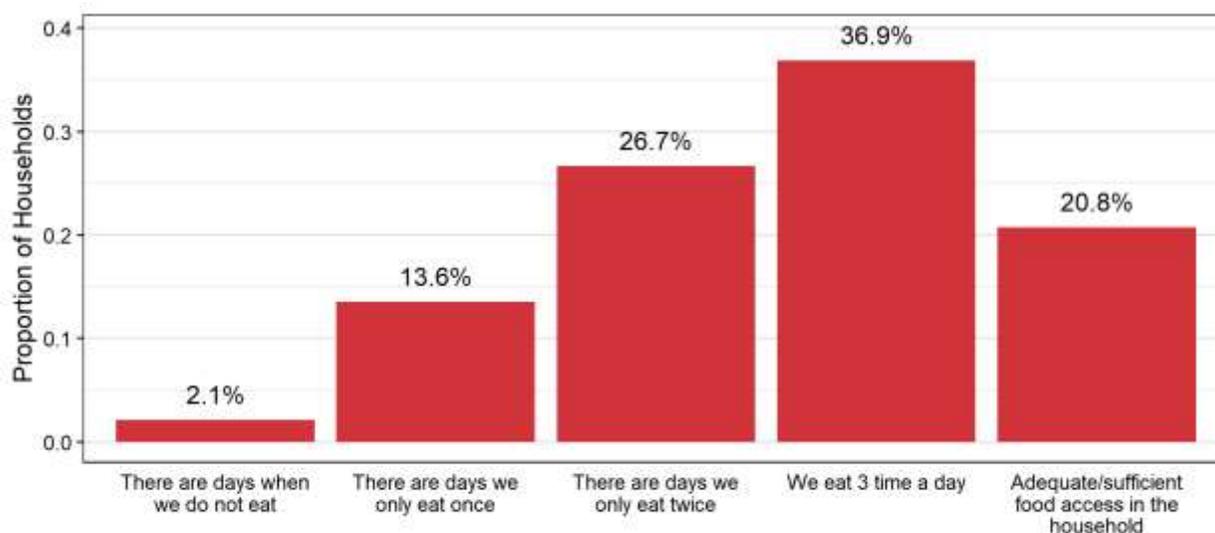
Figure 14: Food Security, Proportion of Households, Nass Valley, 2018/2019



Source: Nisga'a Nation Household Survey 2018/2019. Sample size - 327

In Nass Valley villages, 44.0% eat three times a day and 31.2% of households experience days where they only eat twice.

Figure 15: Food Security, Proportion of Households, Urban Local Areas, 2018/2019



Source: Nisga'a Nation Household Survey 2018/2019. Sample size - 236

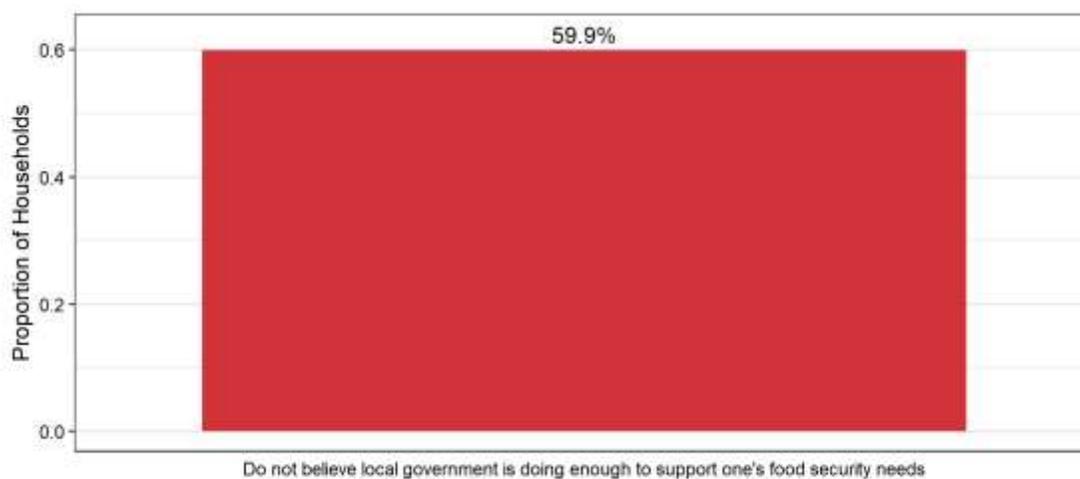
In Urban Local areas, 36.9% of households eat three times per day, and 26.7% of households experience days where they only eat twice per day. Notably, a higher proportion of households in Urban Local areas (13.6%) had days where they ate only once relative to households in the Nisga'a Villages of the Nass Valley (5.8%).



NLG constructs food security indicators using a different questionnaire than those used to construct HSDA level indicators. Direct comparisons should be interpreted with caution, but it is notable that the proportion of food secure households in the Nass Valley and Urban Local areas is far below the proportion at Northwest HSDA (93.1%). Household data on skipping meals, or not eating for an entire day, is collected through select questions in the HFSSM. With detailed data from the Public Use Microdata File for the CCHS and HFSSM from Statistics Canada, more direct comparisons between having food security as measured through NLG data could be made with the HFSSM.

Figure 16 and 17 show the proportion of households who do not believe that local governments are doing enough to support their food security needs in the Nass Valley and Urban Local areas.

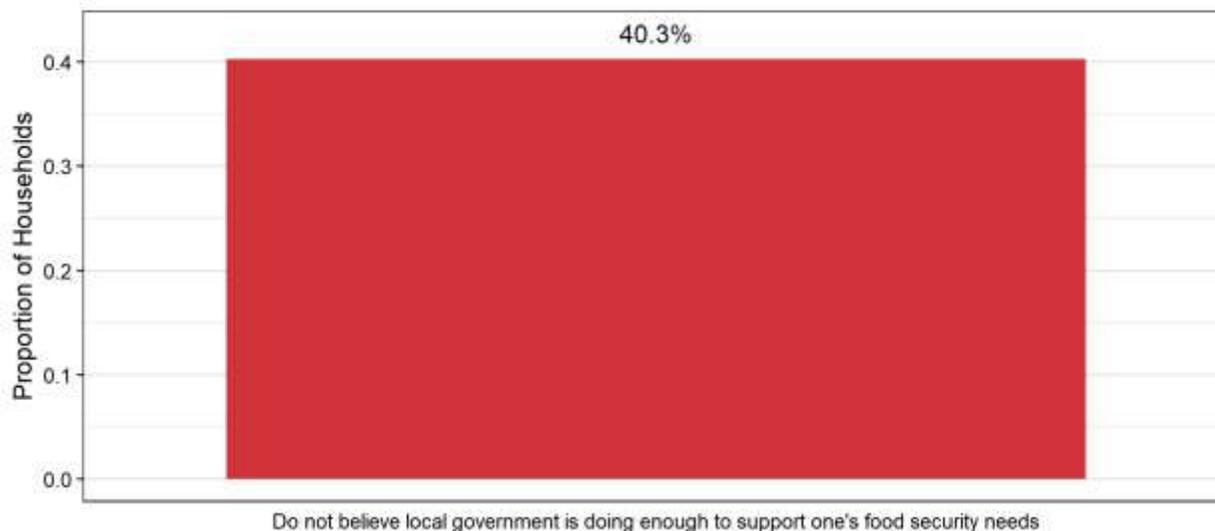
Figure 16: Supports from Local Government, Proportion of Households, Nass Valley, 2018/2019



Source: Nisga'a Nation Household Survey 2018/2019. Sample size - 327



Figure 17: Supports from Local Government, Proportion of Households, Urban Local Areas, 2018/2019

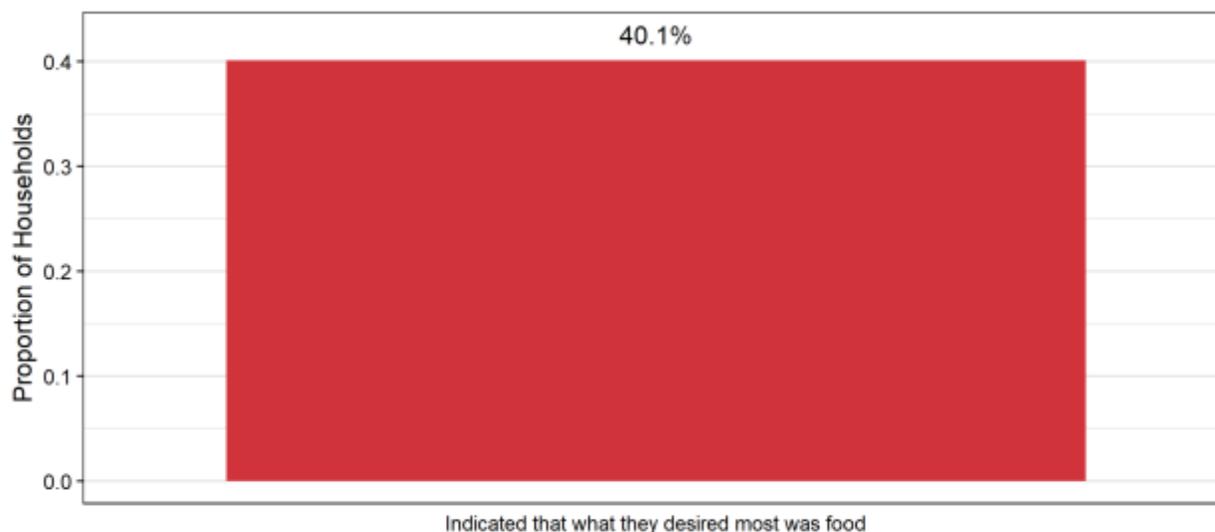


Source: Nisga'a Nation Household Survey 2018/2019. Sample size - 236

Comparing responses from both geographies suggests that a higher proportion of households in the Nass Valley (59.9%) feel that local government could do more to support the food security needs of households than in Urban Local areas (40.3%). This difference is likely a function of what local government is already doing to support food security, the relative prevalence of food insecurity among households, and the prioritization of food security as an issue among both households in both locations. Comparing responses from figures 10 through 15 suggests that food security may present a larger challenge for households in Nisga'a Villages of the Nass Valley, relative to Urban Local areas.

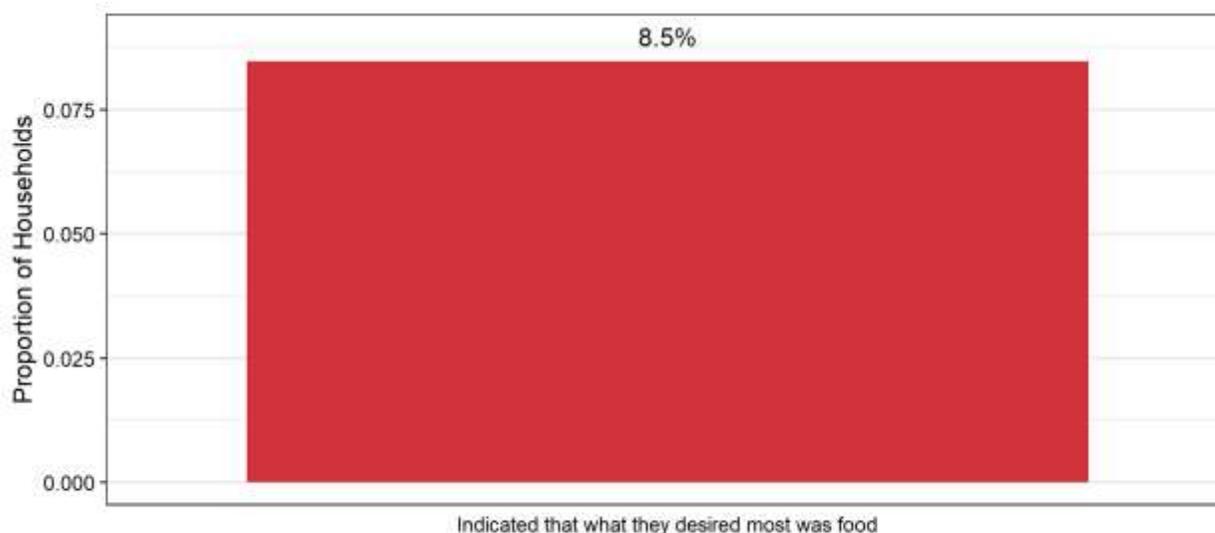


Figure 18: Need Food the Most, Proportion of Households, Nass Valley, 2018/2019



Source: Nisga'a Nation Household Survey 2018/2019. Sample size - 327

Figure 19: Need Food the Most, Proportion of Households, Urban Local Areas, 2018/2019



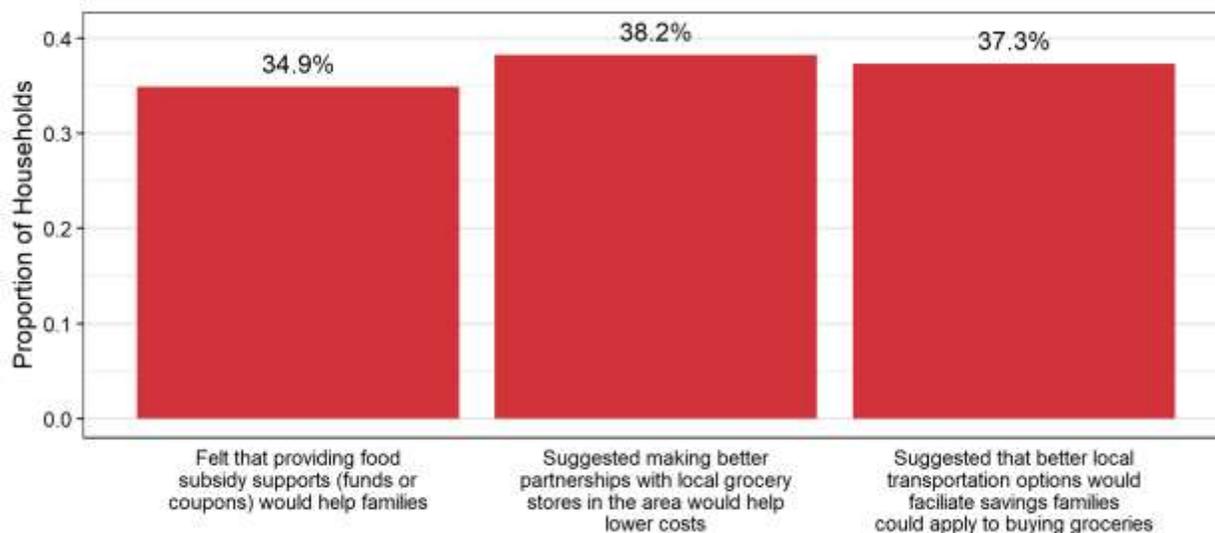
Source: Nisga'a Nation Household Survey 2018/2019. Sample size - 236

Figures 18 and 19 also suggest that food security is a bigger priority for households in the Nass Valley. When asked what their household needs most, 40.1% of respondents from Nisga'a Villages in the Nass Valley identified food, while only 8.5% of households in Urban Local areas indicated that food is what their household needs the most suggesting different local government responses may be needed in each location.



When asked which supports would be useful to address food security, households from the four Nisga'a Villages most frequently identified improving partnerships with local grocers aimed at lowering costs as a useful support to help address food security issues in the Nass Valley (see Figure 20). Notably, each intervention type received support from a similar proportion of households, which is consistent with Figure 12, where Nass Valley households indicated a wide range of factors contributing to food insecurity.

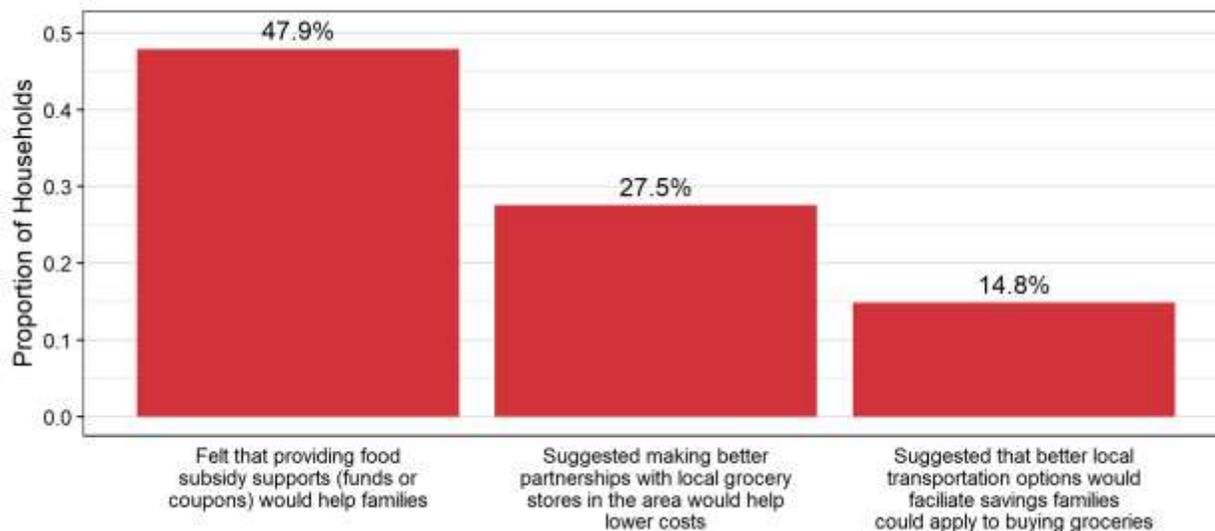
Figure 20: Ideas on Food Security Support, Proportion of Households, Nass Valley, 2018/2019



Source: Nisga'a Nation Household Survey 2018/2019. Sample size - 327, households could select all that apply



Figure 21: Ideas on Food Security Support, Proportion of Households, Urban Local Areas, 2018/2019



Source: Nisga'a Nation Household Survey 2018/2019. Sample size - 236, households could select all that apply

Households in Urban Local areas felt that food subsidies would be of most use to families in accessing food (see Figure 21). The desire for subsidies in Urban Local areas is consistent with the findings in Figure 13, where urban households identified rising food costs as the primary challenge in accessing food.



4. Discussion of Data Limitations and Future Data Sources

There are various limitations for existing food security data in Canada. CCHS core content and survey design have varied over time, making data inconsistent and challenging to compare across years (see Appendix I). PROOF's report *Household Food Insecurity in Canada: A Guide to Measurement and Interpretation* outlines methods for properly interpreting and analyzing CCHS data on household food security. The report highlights: estimating household-level prevalence; estimating individual-level prevalence; generalizability to vulnerable populations who are generally omitted from the CCHS; compatibility to other classification systems and instruments; and common data reporting errors (PROOF, 2018b) and is a valuable resource for implementing local level data collection that would be comparable to other geographies in Canada.

The BC Ministry of Health produced two quality improvement tools to support its public health core program for food security: the *CORE Public Health Functions for BC Model Core Program Paper: Food Security* (2014) and the *CORE Public Health Functions for BC Evidence Review: Food Security* (2013). The model core program paper outlines the key structural elements for implementing the Province's food security core program, including the six indicators developed by the PHSA for monitoring food security in BC. The report also highlights the lack of evidence and best practices in assessing and monitoring food security, and discusses the required collaboration across all levels of stakeholders (BC Ministry of Health, 2014). The lack of data available to implement the indicators framework has been highlighted by multiple provincial organizations.

Although not publicly available, food bank data for British Columbia and Canada has been compiled by Food Banks Canada's Hungercount 2018 concerning food bank visitation, income, household composition and other characteristics. Data on food bank visitation over time may provide insight into food security in the province and potentially the local region.

Creating consistent, reliable, and accessible data on food security would result in better-informed food security policies and initiatives across all geographies. For example, Dietitians of Canada, who also contribute to data compilation for average nutritious food basket cost, have recommended the Government of Canada have mandatory annual monitoring and reporting of the prevalence and severity of household food insecurity in each province and territory, including among vulnerable populations, and recommend various data collection methods (Dietitians of Canada, 2016).

Near Prince Rupert, the Northwest Food Action Network recently formed and could offer potential future collaboration to collect food insecurity data.

In the future, additional data may become available related to food security given Employment and Social Development Canada's 2018 strategy *Opportunity for All - Canada's First Poverty*



Reduction Strategy. This strategy includes food security as an indicator for poverty in Canada, making it a potential source for providing up to date data on monitoring household food security through an online platform (PROOF, 2018b).

Overall, publically available data on food security and its indicators is limited for local geographies and require custom data requests. Additional local indicators could be constructed, with custom data requested from:

- Public Use Microdata File (PUMF) for the CCHS from Statistics Canada. This microdata file will provide data for health regions and combinations of health regions across Canada (Statistics Canada, 2019). This data can be used to assess food insecurity measures at more local geographies (PUMF orders sent through <https://www150.statcan.gc.ca/n1/en/catalogue/82M0013X>);
- detailed 2017 data from BCCDC on average monthly cost of the nutritious food basket for British Columbians (requests can be sent through <http://www.bccdc.ca/about/accountability/data-access-requests>);
- detailed Hungercount 2018 data for British Columbia from Food Banks Canada at the regional level if available; and,
- detailed data from Dietitians of Canada on average nutritious food basket costs for British Columbia.

In addition, data collection efforts locally could align with the questions in the HFSSM of the CCHS. This would enable more direct comparisons between datasets, and the capacity to construct local indicators of nationally recognized food security categorizations. Administrative data, and requested public data could also be combined to replicate the indicators in the PHSA provincial indicators framework for the Prince Rupert and Nass Valley areas.



Appendix I: Canadian Community Health Survey (CCHS) Data Collection Caveats

The Canadian Community Health Survey (CCHS) began collecting data in 2001, and was conducted every two years until 2005. The survey cycle began to be collected annually in 2007, and was redesigned in 2015. Microfile data is produced annually and a file combining two years of data is also released to provide reasonable estimates at the health region level. It should be noted that combining cycles of the data from 2004, or before and after the CCHS redesign is not recommended (Government of Canada, 2017).

CCHS content is either core content (required from all respondents) or optional content (required from respondents depending if their province or territory has opted in to include the module). The Household Food Security Survey Module (HFSSM) was first included in the CCHS in 2004, and has been included in subsequent CCHS cycles since, becoming mandatory in core components of the CCHS in 2007-2008 and 2011-2012. In other years, the HFSSM has been optional content, with some provinces and territories opting not to monitor food insecurity. In 2013 and 2014, Yukon, British Columbia, Manitoba, and Newfoundland and Labrador, chose not to monitor food insecurity. As a result, there are no national or provincial estimates for those years (Tarasuk, Mitchell, & Dachner, 2016). The HFSSM again became core content of the CCHS in 2017-2018.

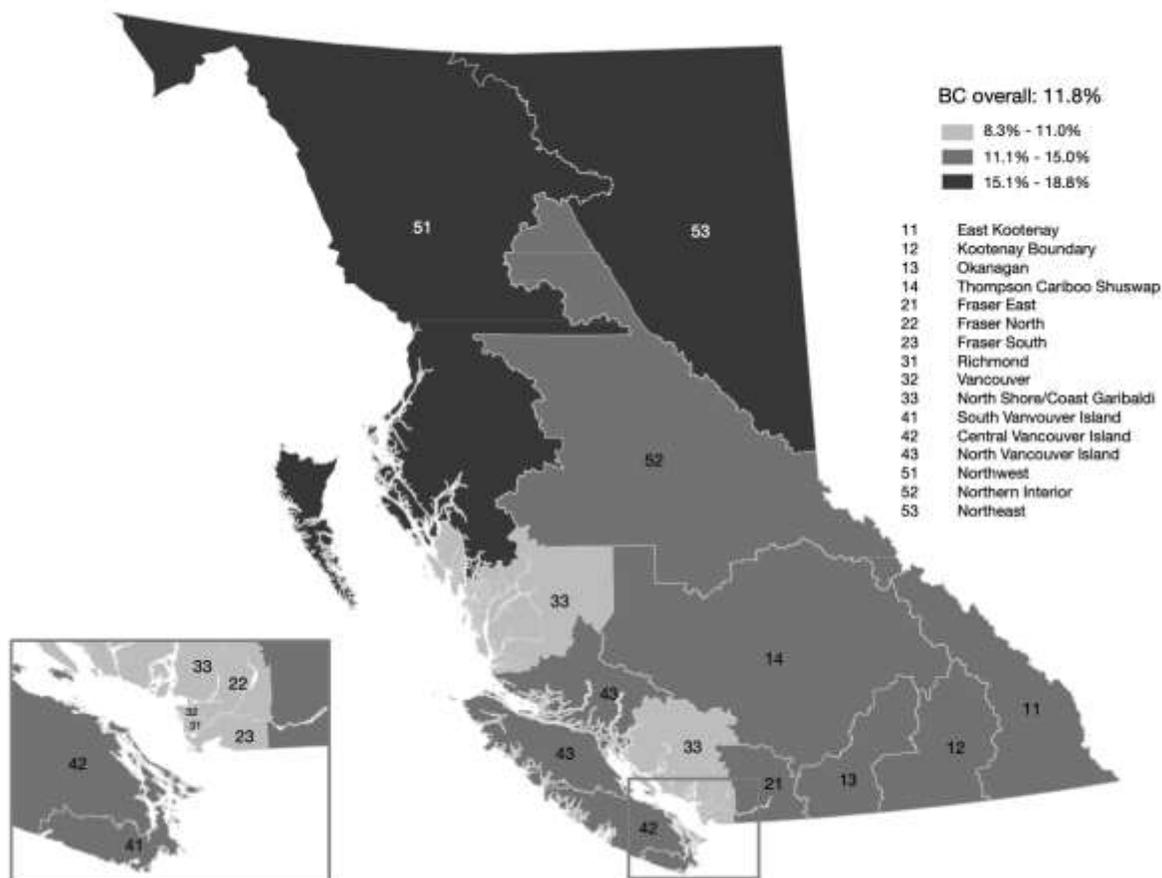
A summary of the years the CCHS and HFSSM were collected is provided below:

Year of CCHS	Inclusion of HFSSM
2001, 2003	N/A
2004-2005	Optional content (first implementation of HFSSM module, BC included in survey)
2007-2008 (First year of annual survey collection)	Core content (required for BC)
2009-2010	Optional content (BC included in survey)
2011-2012	Core content (required for BC)
2013-2014	Optional content (BC opted out of HFSSM)
2015-2016 (Implementation of CCHS redesign)	Optional content (BC included in survey)
2017-2018	Core content (required for BC)



Appendix II: Prevalence of Food Insecurity across BC HSDAs

Figure A.1: Prevalence of household food insecurity in BC, across HSDAs, 2011-12



Retrieved from: PHSA & PROOF, 2016

Data Source: CCHS, 2011-12

Note: The prevalence of food insecurity for East Kootenay, Kootenay Boundary, Fraser East, Richmond, North Shore/Coast Garibaldi, Northwest, and Northern Interior should be interpreted with caution due to their high variability.



Appendix III: National and Provincial Entities and Reports on Food Security

BC Centre for Disease Control (BCCDC)

The BCCDC's Population and Public Health programs works to produce a variety of resources and reports on food security in the province including food costing and priority health equity indicators for BC households.

Northern Health

One of Northern Health's key health topics is food security, calling for safe, secure, and reliable food for northern and rural populations. Northern Health collaborates with other provincial authorities on food security issues.

BC Ministry of Health

Food security is one of the BC Ministry of Health's core public health programs. The Ministry supports this program with two key tools: the Food Security Model Core Program Paper and the Food Security Evidence Review.

BC Food Security Gateway

BC Food Security Gateway is an online resource providing food security information and resources for BC communities. The gateway provides lists of food security networks, policy councils, and agencies, in addition to a catalogue of food security resources from across BC and Canada.

Public Health Agency of Canada

Food security is one of the focus public health topics for the Public Health Agency of Canada. The Public Health Agency of Canada provides links to federal and provincial reports and data sources, government strategies, and guidance documents.

Public Health Association of BC (PHABC)

The PHABC promotes health, well-being, and equity for British Columbians through advocacy, engagement activities, education, and research. Food security is one of the focuses of PHABC. In collaboration with the Provincial Health Services Authority, the Public Health Association of BC manages the BC Food Security Gateway.



Statistics Canada and Health Canada

Statistics Canada and Health Canada are federal entities which provide a variety of data relevant for monitoring food security, such as the CCHS and HFSSM, and other data for calculating the suggested food security indicators, including data on income, food cost, nutrition, and population demographics.



Appendix IV: The Household Food Security Survey Model (HFSSM) Questions

1. Which of the following statements best describes the food eaten in your household in the past 12 months, that is since [current month] of last year? (Note: Question 1 is not used directly in determining household food security status).
 - You and other household members always had enough of the kinds of foods you wanted to eat.
 - You and other household members had enough to eat, but not always the kinds of food you wanted.
 - Sometimes you and other household members did not have enough to eat.
 - Often you and other household members didn't have enough to eat.
 - Don't know / refuse to answer (Go to end of module)
2. The first statement is: you and other household members worried that food would run out before you got money to buy more. Was that often true, sometimes true, or never true in the past 12 months?
 - Often true
 - Sometimes true
 - Never true
 - Don't know / refuse to answer
3. The food that you and other household members bought just didn't last, and there wasn't any money to get more. Was that often true, sometimes true, or never true in the past 12 months?
 - Often true
 - Sometimes true
 - Never true
 - Don't know / refuse to answer
4. You and other household members couldn't afford to eat balanced meals. In the past 12 months was that often true, sometimes true, or never true?
 - Often true
 - Sometimes true
 - Never true
 - Don't know / refuse to answer

IF CHILDREN UNDER 18 IN HOUSEHOLD, ASK Q5 AND Q6; OTHERWISE, SKIP TO FIRST LEVEL SCREEN.

5. You or other adults in your household relied on only a few kinds of low-cost food to feed the child(ren) because you were running out of money to buy food. Was that often true, sometimes true, or never true in the past 12 months?
 - Often true
 - Sometimes true



- Never true
 - Don't know / refuse to answer
6. You or other adults in your household couldn't feed the child(ren) a balanced meal, because you couldn't afford it. Was that often true, sometimes true, or never true in the past 12 months?
- Often true
 - Sometimes true
 - Never true
 - Don't know / refuse to answer

FIRST LEVEL SCREEN (screener for Stage 2): If AFFIRMATIVE RESPONSE to ANY ONE of Q2-Q6 (i.e., "often true" or "sometimes true") OR response [3] or [4] to Q1, then continue to STAGE 2; otherwise, skip to end.

STAGE 2: Questions 7-11 - ask households passing the First Level Screen

7. The child(ren) were not eating enough because you and other adult members of the household just couldn't afford enough food. Was that often, sometimes or never true in the past 12 months?
- Often true
 - Sometimes true
 - Never true
 - Don't know / refuse to answer
8. In the past 12 months, since last [current month] did you or other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food?
- Yes
 - No (Go to Q9)
 - Don't know / refuse to answer
- 8b. How often did this happen?
- Almost every month
 - Some months but not every month
 - Only 1 or 2 months
 - Don't know / refuse to answer
9. In the past 12 months, did you (personally) ever eat less than you felt you should because there wasn't enough money to buy food?
- Yes
 - No
 - Don't know / refuse to answer
10. In the past 12 months, were you (personally) ever hungry but didn't eat because you couldn't afford enough food?
- Yes
 - No
 - Don't know / refuse to answer



11. In the past 12 months, did you (personally) lose weight because you didn't have enough money for food?
- Yes
 - No
 - Don't know / refuse to answer

SECOND LEVEL SCREEN (screener for Stage 3): If AFFIRMATIVE RESPONSE to ANY ONE of Q7-Q11, then continue to STAGE 3; otherwise, skip to end.

STAGE 3: Questions 12-16 - ask households passing the Second Level Screen

12. In the past 12 months, did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food?
- Yes
 - No (IF CHILDREN UNDER 18 IN HOUSEHOLD, ASK Q13; OTHERWISE SKIP TO END)
 - Don't know / refuse to answer
- 12b. How often did this happen?
- Almost every month
 - Some months but not every month
 - Only 1 or 2 months
 - Don't know / refuse to answer

IF CHILDREN UNDER 18 IN HOUSEHOLD, ASK Q13-16; OTHERWISE SKIP TO END

13. In the past 12 months, did you or other adults in your household ever cut the size of any of the children's meals because there wasn't enough money for food?
- Yes
 - No
 - Don't know / refuse to answer
14. In the past 12 months, did any of the children ever skip meals because there wasn't enough money for food?
- Yes
 - No
 - Don't know / refuse to answer
- 14b. How often did this happen?
- Almost every month
 - Some months but not every month
 - Only 1 or 2 months
 - Don't know / refuse to answer
15. In the past 12 months, were any of the children ever hungry but you just couldn't afford more food?
- Yes
 - No



- Don't know / refuse to answer
16. In the past 12 months, did any of the children ever not eat for a whole day because there wasn't enough money for food?
- Yes
 - No
 - Don't know / refuse to answer



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