

ANALYSIS OF A FOOD ASSESSMENT SURVEY FOR FOOD SECURITY AND FOOD
SOVEREIGNTY OF THE CHUGACH REGION

By

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A Project Submitted in Partial Fulfillment of the Requirements

for the Degree of

MASTER OF SCIENCE

in

Dietetics & Nutrition

University of Alaska Anchorage

August 2022

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Abstract

This project analyzed a food assessment questionnaire that was conducted amongst the Alutiiq and Eyak peoples in the Chugach region of Alaska in 2016-2017. This questionnaire, conducted by the Chugach Regional Resource Commission, garnered 87 responses from seven communities. The project used meaningful data analysis of the questionnaire results to discuss food security and food sovereignty in the Chugach region. Additionally, this project formulated recommendations based on recent findings and research in the area of food security and food sovereignty in rural Alaska. The questionnaire was split into six sections: Community Food Resources, Diet and Health, Culture, Organization and Governance, Food Resources, and Natural Resources and Environment. Overall, results showed that participants thought nutritious foods were hard to attain in their communities due to fuel and transportation costs, and that the use of traditional foods should be shared with younger generations. Questionnaire participants believed traditional knowledge should be shared via hands-on learning or classes rather than in recipe books. Results also showed that participants wanted leadership, both local and national, to make regulations better fit their community and to understand the high price of food. In terms of the environment, most participants were aware of climate change and warming but less aware of specifics, such as ocean acidity.

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Acknowledgements

This project would not have been possible without the help of Willow Hetrick from the Chugach Regional Resource Commission and the permission to use the collected questionnaire data in this project. Acknowledgement is also given to the people of the Chugach region in the communities of Chenega, Cordova, Nanwalek, Port Graham, Seward, Tatitlek, and Valdez who participated in the questionnaire.

I am also grateful for the guidance and patience of my committee members and committee chair, and appreciative that the University of Alaska Anchorage offers the opportunity to pursue a master's degree in Dietetics and Nutrition.

Introduction

The food systems of Indigenous peoples in Alaska vary greatly by region and have been impacted by modern issues of health, access, and environmental changes, yet an assessment of how these factors may impact food security and food sovereignty of the Native peoples occupying the Chugach region has not previously been conducted. The Chugach region encompasses the traditional lands of the Alutiiq and Eyak peoples and stretches across the present-day rural Alaskan communities of Seward, Nanwalek, Port Graham, Tatitlek, Chenega, Cordova, and Valdez.

In 2017, the Chugach Regional Resource Commission (CRRC) conducted a food assessment questionnaire in the region with funding from the First Nations Development Institute's Food Sovereignty Assessment Grant to assess the current food system in light of modern issues of health, access, and the environment and to produce a regional recipe book. The questionnaire was modeled after a tool developed by the First Nations Development Institute,¹ but included specific changes tailored to the Chugach regional foods and culture, such as questions that focus on different species of salmon. The main goal of the CRRC food assessment questionnaire was to draw conclusions and make recommendations surrounding food security and food sovereignty in the area, while also determining avenues for further research. The questionnaire was broken into six sections: Community Food Resources; Diet and Health; Culture; Organization and Governance; Food Resources; and Natural Resources and Environment. It consisted of a variety of questions, such as the importance of community food resources, perceptions of personal health, and thoughts on organizations and governance surrounding food and culture. The questions were multiple choice and Likert-based scales with an option for providing free response. A total of 87 people responded to the 2017 CRRC food

assessment questionnaire.

Background

In many rural areas of the United States food insecurity rates are high, and in rural Alaska they are even higher. There has been some research that shows that the food security in rural Alaska is being negatively affected by climate change, directly by impacting food resources and in the form of using permafrost for food storage.^{2,3} Food security means having, at all times, both physical and economic access to sufficient food to meet dietary needs for a productive and healthy life. The definition of food security as defined from the Inuit Food Security Conceptual Framework differs from the academic definition, to quote their summary report:

We are speaking about the entire Arctic ecosystem and the relationships between all components within; we are talking about how our language teaches us when, where and how to obtain, process, store and consume food; we are talking about the importance of dancing and potlucks to share foods and how our economic system is tied to this; we are talking about our rights to govern how we obtain, process, store and consume food; about our Indigenous Knowledge and how it will aid in illuminating the changes that are occurring. We are talking about what food security means to us, to our people, to our environment and how we see this environment; we are talking about our culture.⁴

Although exact numbers are unknown due to a lack of research, estimates of food insecurity prevalence among adults in rural Alaska are upwards of 20-25%, whereas estimates among adults from rural America, as a whole, are approximately 15%.^{2,5} Research has shown that traditional foods, those foods that are traditionally and historically included in the diet of a particular cultural group, improve food security and the overall nutrition quality of the diet for Indigenous peoples living in rural communities.⁶ The First Nations Development Institute, a nonprofit organization that offers economic development support to Native American tribes and communities, developed the Food Sovereignty Assessment Tool to examine traditional foods,

food security, and nutrition quality on a community level.¹ This tool assesses individuals on how they view food insecurity and food sovereignty in their communities and determines what systems are in place to pass on skills and knowledge to younger generations.

In 2015, the Inuit Circumpolar Council Alaska explored definitions of food security and food sovereignty for Indigenous populations and created the Alaskan Inuit Food Security Conceptual Framework.⁷ This framework offered a picture of food security and food sovereignty across much of western and northern Alaska and acknowledged varying cultural norms, food sources, and local governance systems. The framework illuminated that Indigenous Alaskans face challenges in managing and decision-making around food security issues due to current regulations and policy. However, there was also a focus on promoting Indigenous knowledge and languages, and developing educational programs that have an influence on protecting food security.

The six sections of the CRRC food assessment questionnaire align with the six sections of the framework. Visually, the framework can be viewed in the shape of a drum, with food security at the center, surrounded by the main components of food security: culture, availability, accessibility, health and wellness, stability, decision-making power and management, and food sovereignty (Appendix A)⁷. The concentric circles of the framework illustrate the interconnectedness of the various layers as well as their dependence on each other and serve to provide a multilayered definition of food sovereignty held together by the spirit of everything: Cillam Cua, Eslam Yuga, Iñua and Ellam Yua, which roughly translates to “the spirit of all within the arctic”.

The Alaskan Inuit Food Security Conceptual Framework focused on western and northern Alaska, but there is still a lack of literature about food security and insecurity in

southwestern Alaska. This project analyzed CRRC's Food Assessment Questionnaire (Appendix B) to understand local food sovereignty and food security among the Alutiiq and Eyak people in the Chugach region of Alaska. The findings can play an important role in improving health and determining sources of health inequities. Improved understanding of food security and insecurity in the region can lead to recommendations for program development and changes to address health inequities in areas that the communities deem important.

It is important to note that the CRRC food assessment questionnaire was conducted prior to the COVID-19 pandemic and since that time there have been significant global impacts and implications for food security and food sovereignty related to the pandemic. Researchers have examined how Native communities have been impacted by and adapted to COVID-19. One report revealed that despite the obvious challenges posed by COVID-19 on the availability of store-bought foods and interruptions in traditional harvesting, positive outcomes such as food sharing networks and traditional food programs gave Alaskan communities more local and sustainable sources of food.⁸ Other researchers looked at tribes across the country and concluded that the pandemic brought to light food and diet-related health issues in Indigenous populations. These issues, in combination with the pandemic, left these communities most exposed to unemployment, illness and death.⁹ Despite the changes wrought by the pandemic, the results of the CRRC food assessment questionnaire are still useful because they are currently the only tool to identify issues related to food insecurity in the Chugach region of Alaska. Perhaps an area of future research could investigate and compare new data post-pandemic to the 2017 pre-pandemic data.

Goal & Objectives

The goal of this project was to identify factors that impact food security and food sovereignty of the Alutiiq and Eyak people in the Chugach region of Alaska.

The objectives included:

- a) Analyze CRRC's Food Assessment Questionnaire data to determine factors that influence food security and food sovereignty.
- b) Provide recommendations to aid in improving food security and food sovereignty in the region.

Methods and Analysis

The Chugach Regional Resource Commission (CRRC) designed a questionnaire based on the First Nations Development Institute's Food Sovereignty Assessment Tool, and included region specific terms and food items. Alutiiq adults from seven different Chugach region communities were invited to complete the questionnaire through a combination of door-to-door outreach and via mail. The cross-sectional design of questionnaire recruitment ended with a sample size of 87 participants. CRRC then sought assistance to analyze data from the questionnaire.

The first step in the project was to review the 70-question questionnaire and identify those questions that were relevant specifically to the research objectives, which were designed to accommodate the limited scope of this research project. The graduate student and advisor determined relevancy based on whether responses provided substantial information to address the research objectives. The questions deemed less relevant to the research objectives were presented to the CRRC for approval to be excluded in the analysis.

The next step was to collate the responses from the remaining questions into separate Excel documents and assign each questionnaire question a number value. To adhere to the confidentiality requested by the communities and CRRC, each community was also assigned a number. Analysis was completed by using the built-in filter and sum functions of Excel. For example: for a yes or no question, yes was coded as a “1” and no was coded as a “0” in a single column, then the results were filtered to show only 1s or 0s and the sum was noted for each answer based on what was filtered out of the data. A similar process was completed for each question and filtering by community was also done in this manner.

The results were organized and sorted according to the questionnaire responses and by each community. The data were then analyzed with simple statistical analysis, including percentages and averages, as appropriate. Means were calculated for questions with ranks involved in the response. Percentages were calculated for multiple choice style questions and for Yes/No and True/False questions. Free text responses were analyzed for key themes, with each separate theme counted and totaled, and the top three to four themes for each question were identified and recorded.

The data were then visually represented using pie charts and bar graphs. Multiple choice and table-format questions were displayed in various types of graphs and charts. Free text responses were presented in a bar graph. For each graph the total number of respondents were noted to allow for sub-questions that were based on previous questions. Finally, it is important to note that questions toward the end of the questionnaire had fewer responses, likely due to survey fatigue.

After each question was analyzed, organized, and presented in graphs and charts, actionable responses were proposed based on prior research or examples in similar communities

and settings on related issues. After considering local issues and the region as a whole, recommendations for each of the questionnaire sections were made to address the most prominent issues.

Results

There were 50 questions and 20 sub-questions in the questionnaire, with 45 questions and 15 sub-questions analyzed for this study. Due to the large quantity of data, three to four representative questions from each section were identified for discussion in the results.

The questionnaire also collected basic demographic data, which included the community of each respondent. The demographics revealed a total of 87 respondents, with 43.7% male and 55.2% female and one respondent leaving gender unanswered. The average age of the respondents was 43.6 years. Average time spent living in their respective communities was 34.2 years.

Section 1: Community Food Resources

Following are brief discussions for each of the six sections from the questionnaire. The first section relates to Community Food Resources. Four questions from Section 1 and their results are noted below:

Question 1A: How important are the following sources of food for people in your community?

The most important source identified was hunting and gathering with 92% (n=87) respondents saying it was very important (Figure 1). The second, third, and fourth most important sources were sharing, grocery stores, and trade and barter, respectively. Additionally, gardens were noted to be important by some respondents. Of the four garden types (family, community, school, and tribal) community gardens were deemed the most important with 40% (n=87) of respondents listing them as very important. School and tribal gardens were reported to be non-existent or not

more important than the other garden types. Finally, food stamps (Supplemental Nutrition Assistance Program or SNAP) funds were deemed to be the least important of all the sources with 11.7% (n=10) of respondents stating they were not very important.

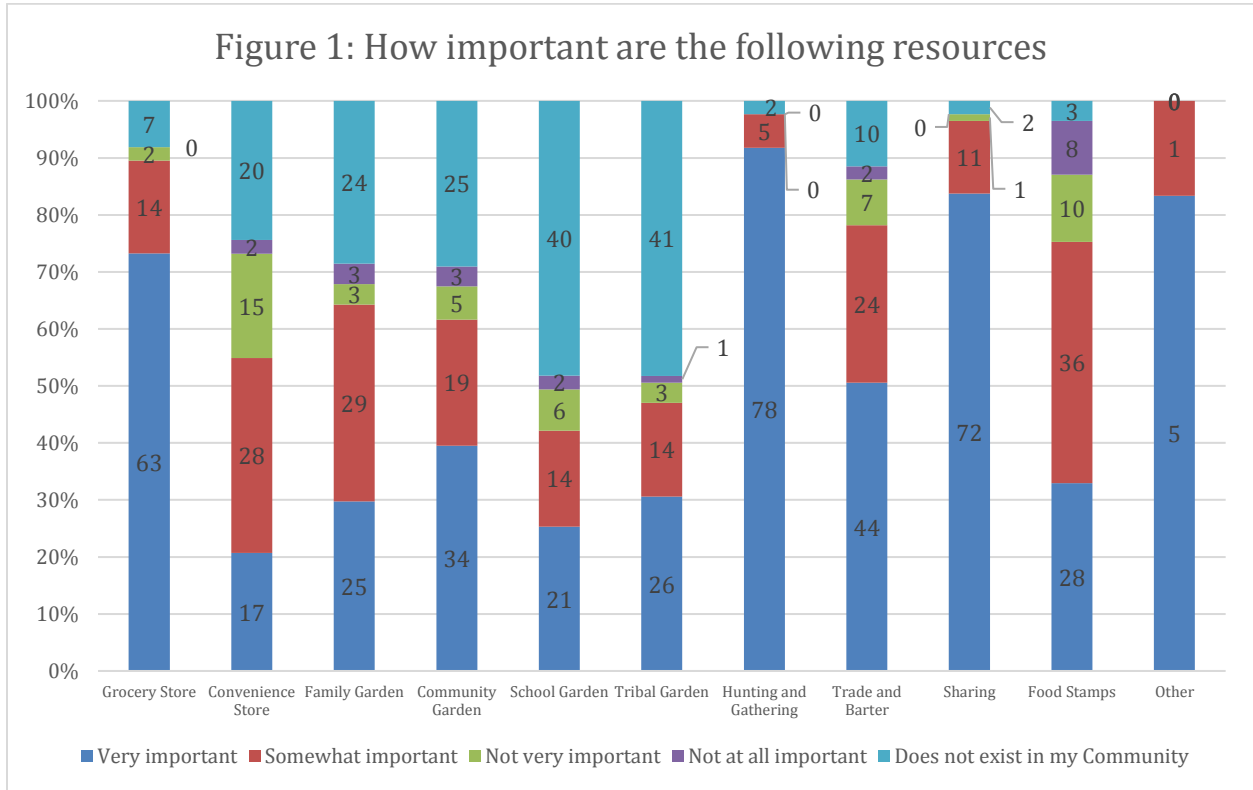


Figure 1: Questionnaire responses to the question “How important are the following sources of food for people in your community?”

Question 1B: Who do you consider to be the leaders in solving food problems in your community?

The top four leaders identified were Chugachmiut, a non-profit health and social services agency that serves the seven Native tribes of the Chugach Region, with 39.3% (n=33) of respondents, followed by tribal governments, community or nonprofits groups, and tribal or regional corporations (Figure 2).

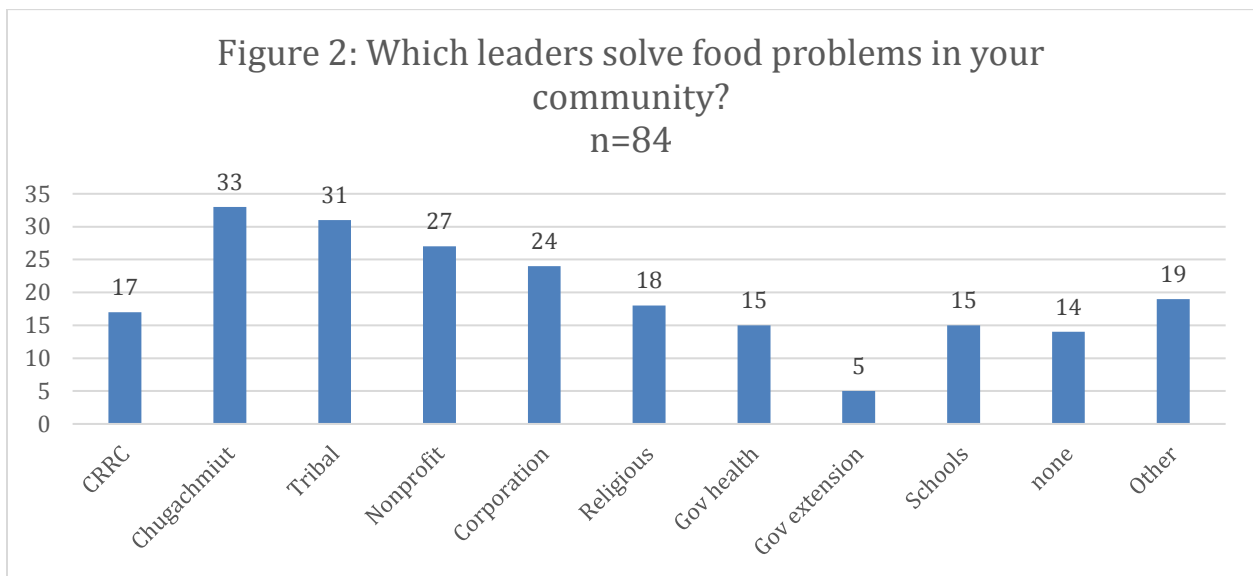


Figure 2: Questionnaire responses to the question “Who do you consider to be the leaders in solving food problems in your community?”

Question 1C: Are there certain foods that you need or would like to eat that are difficult to get, or are not available, in your community?

Of the 84 respondents, 64.3% (n=54) answered with a yes, that there were certain foods that were hard to get or not available (Figure 3). Following was the sub-question: *If yes, what are those foods – and why are they difficult to get or not available – and what can be done to get them?* Of the 54 people who completed the sub-question, 42.6% (n=23) mentioned that fresh fruit and vegetables were difficult to obtain. Two other notable responses were that people needed better access to traditional foods and that there needed to be classes on traditional foods.

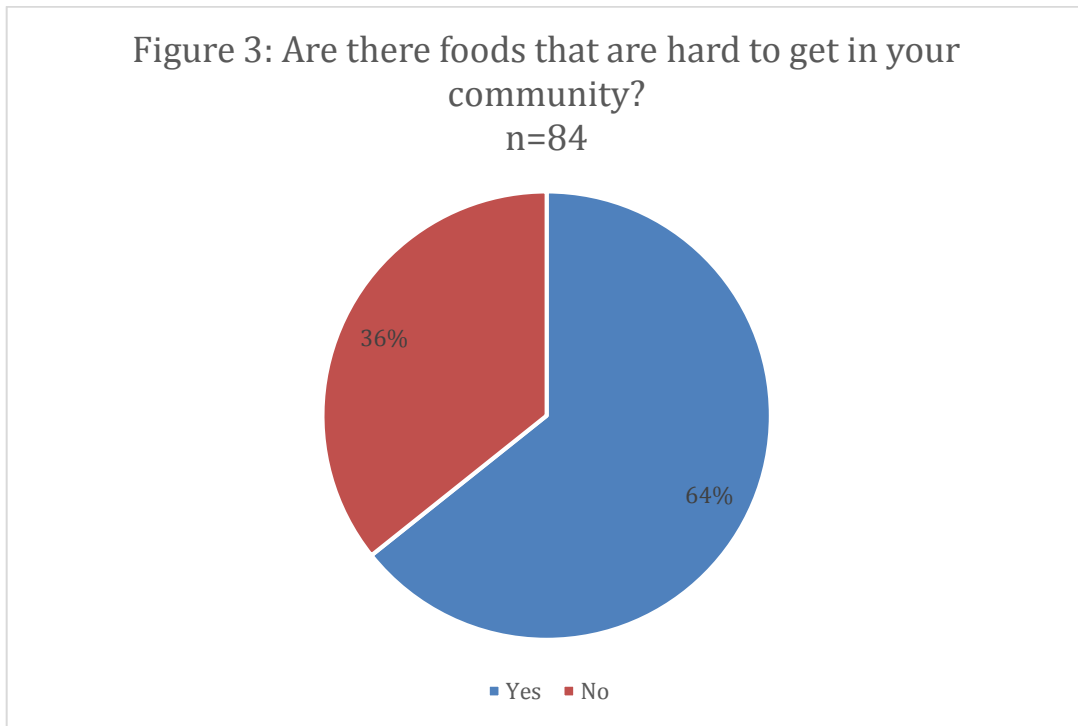


Figure 3: Questionnaire responses to the question “Are there certain foods that you need or would like to eat that are difficult to get, or are not available, in your community?”

Question 1E: Which of the following do you think are useful, or would be useful, in improving your food resources?

Figure 4 shows that three resources deemed to be the most useful and somewhat useful were recipes to make traditional foods, information for preparing traditional foods, and nutritional information for a variety of traditional foods. The resources that were seen as the least useful were information on government programs followed by budgeting help and information on gardening.

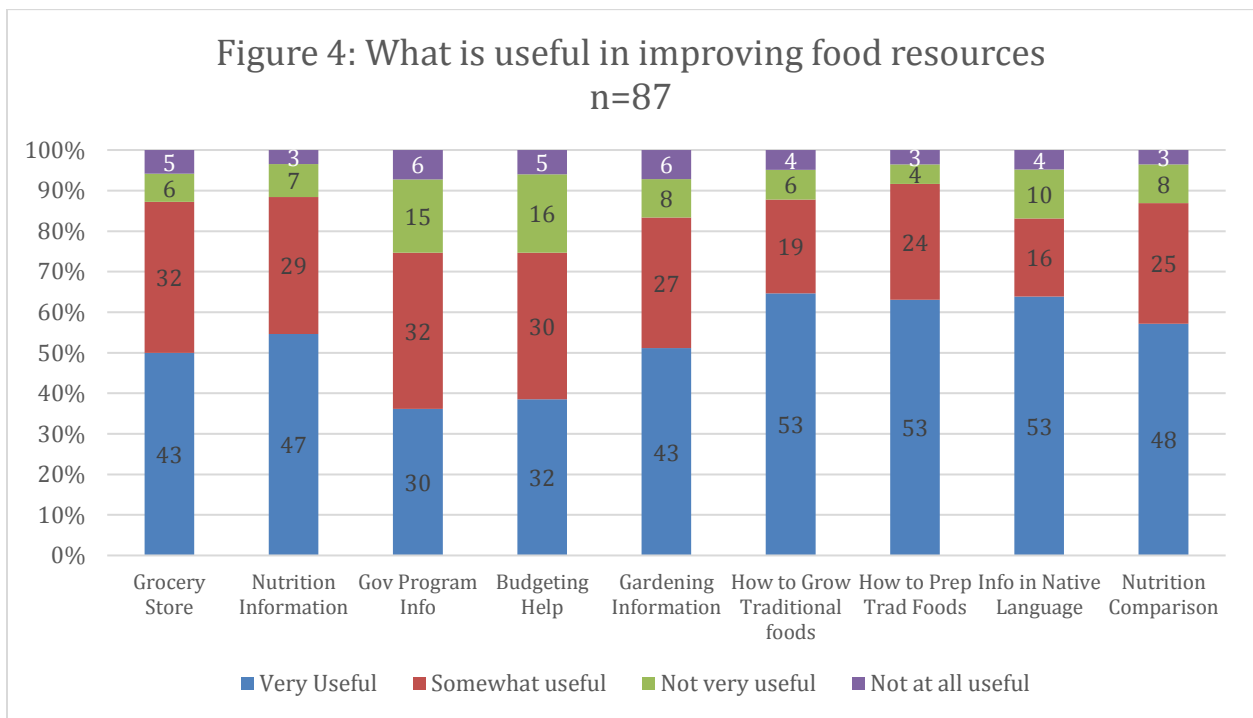


Figure 4: Questionnaire responses to the question “Which of the following do you think are useful, or would be useful, in improving your food resources?”

Section 2: Diet and Health

The questionnaire's second section focused on diet and health. Three questions from Section 2 and their results are noted below:

Question 2B: Would you say your health, in general, is:

A total of 67.4% of participants (n=58) rated their health as positive, while 5% rated their health as poor.

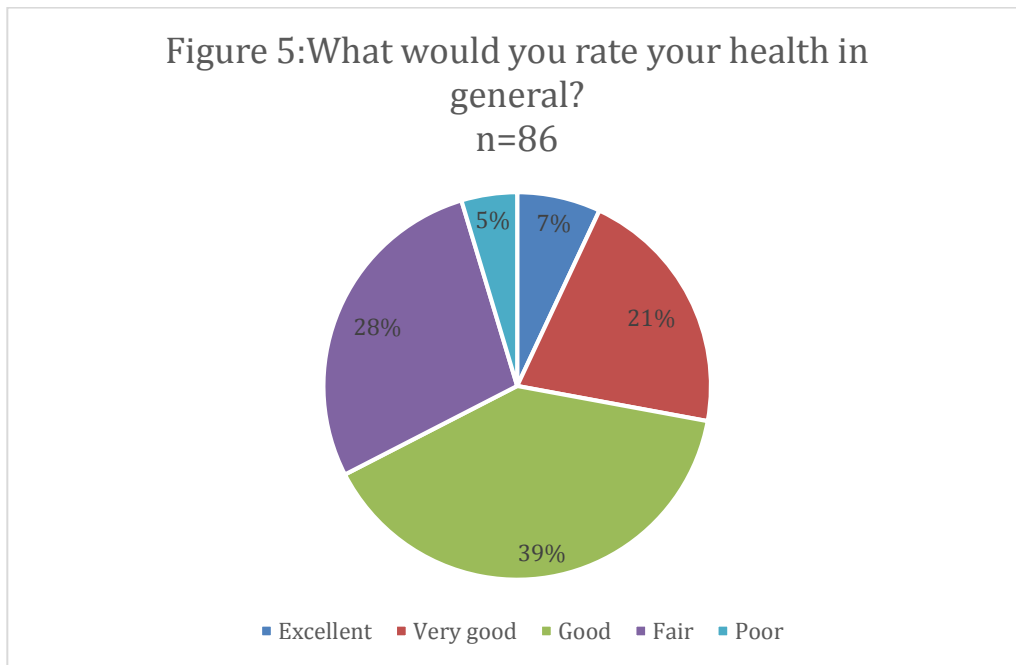


Figure 5: Questionnaire responses to the question "What would you rate your health in general?"

Question 2C: Is information about diet and nutrition available in your community? If yes, please list your two primary sources of information (nurse, family member, etc.).

Overwhelmingly, respondents identified clinic staff as the primary sources of nutrition information, with 46% (n=35) of respondents reporting this source, followed by family at 22.3% (n=17) (Figure 6). Registered dietitians were the least likely to be seen as the primary source of nutrition information with less than 1.3% (n=1) of respondents listing them as a source. None of the communities had a clinic employing a registered dietitian at the time of this questionnaire.

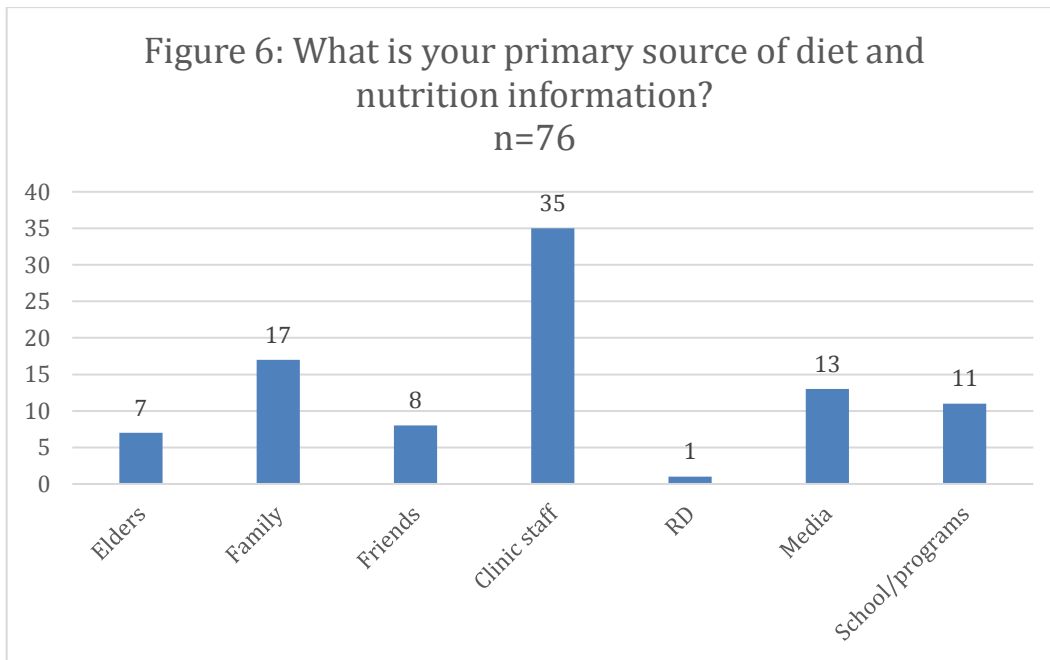


Figure 6: Questionnaire responses to the question “Is information about diet and nutrition available in your community? If yes, please list your two primary sources of information”

Question 2D: Are health problems in your community caused or exacerbated by lack of healthy, nutritious, traditional foods?

Nearly half of the participants, or 42.5% (n=37), of respondents answered “Yes” to the question of whether a lack of healthy, nutritious, and traditional foods was related to health problems, as shown in Figure 7. Further, 48.3% (n=42) of people were unsure, and only 9.2% (n=8) of respondents thought that health problems were not related to the lack of healthy and traditional food.

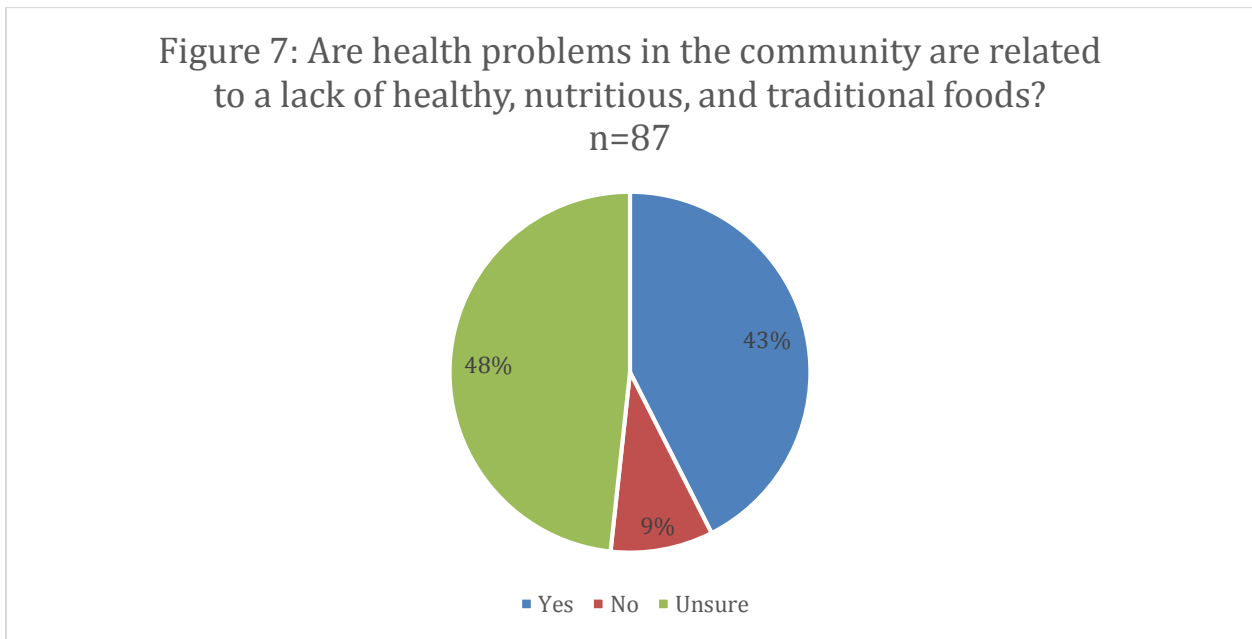


Figure 7: Questionnaire responses to the question “Are health problems in your community caused or exacerbated by lack of healthy, nutritious, traditional foods?”

Section 3: Culture

The third section addressed organization and governance. Results from four questions and additional sub-questions in this section are noted below:

Question 3E: Do you think that young people in your community are interested in food traditions? If not, why do you think this is so? Or if yes, please explain why you think young people are interested.

Of all participants, 41.3% (n=36) responded “No,” that young people in the community were not interested in food traditions. Of those who answered no, being distracted by technology and the lack of mentors were the two most cited reasons (Figure 8). Another 66.6% (n=58), responded with “Yes,” that they believed young people were interested in food traditions in their community (Figure 9). The main reason respondents gave was based on their beliefs that culture and traditional ways of life better connect them with family. Notably, several participants answered with both yes and no on this question, thus the percentage adds up to more than 100%.

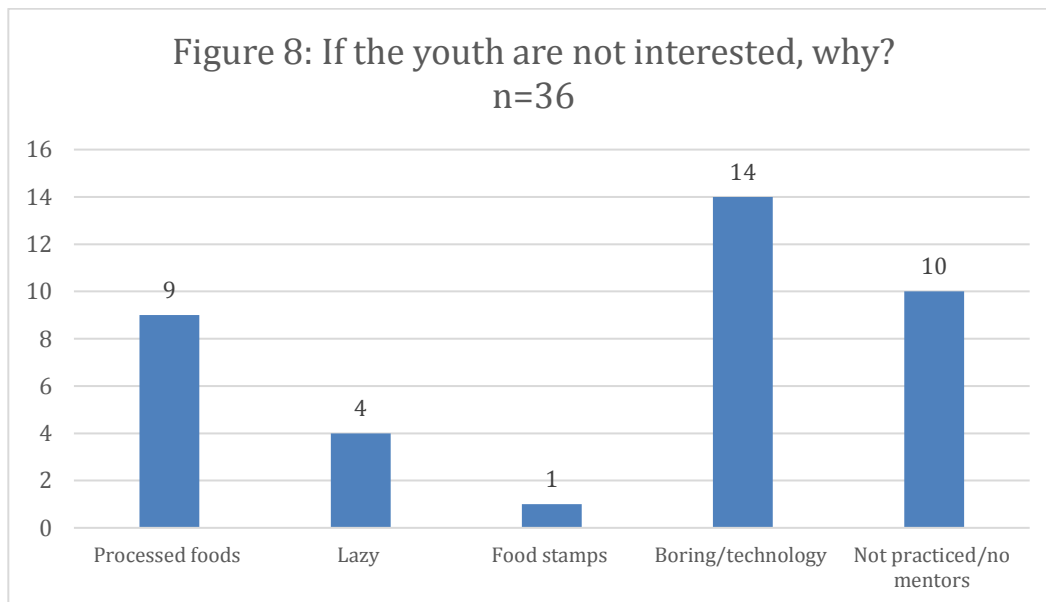


Figure 8: Questionnaire responses to the question “Do you think that young people in your community are interested in food traditions? If not, why do you think this is so?”

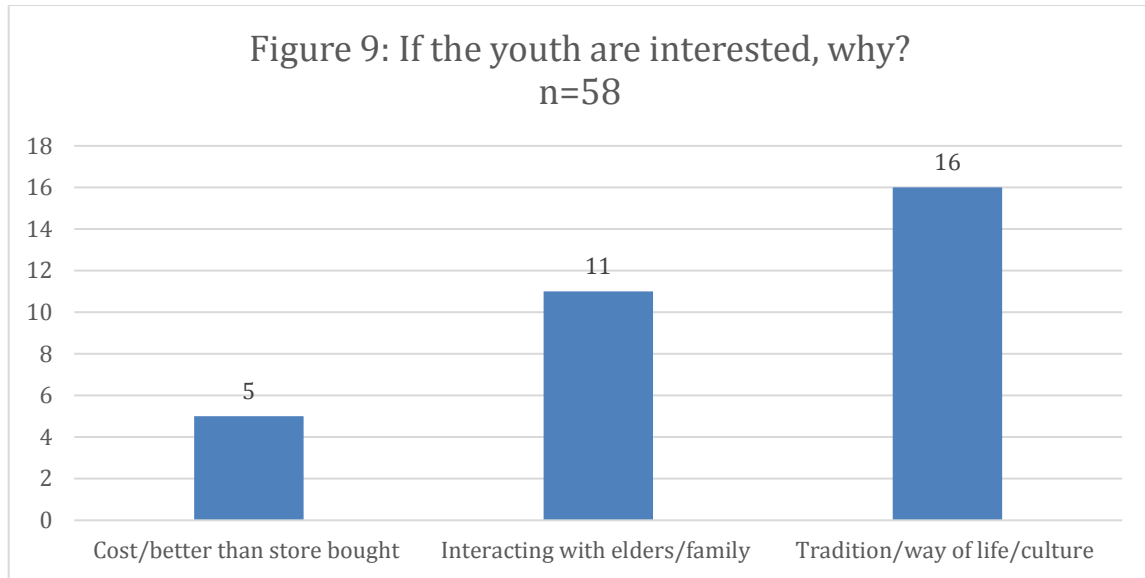


Figure 9: Questionnaire responses to the question “Do you think that young people in your community are interested in food traditions? If yes, please explain why you think young people are interested.”

Finally, within Question 3E, a follow-up set of questions asked: *Do you have suggestions about how to get young people interested? And if yes, what are they?*

The two most common themes identified by participants who answered this question were 1) the community should first involve and ask the youth what interests them when it comes to food traditions, and 2) create classes, programs, and/or groups about food traditions that involve younger people (Figure 10). An additional smaller group of respondents suggested catering to the interests of young people, such as utilizing technology to create content that pass down knowledge and traditions.

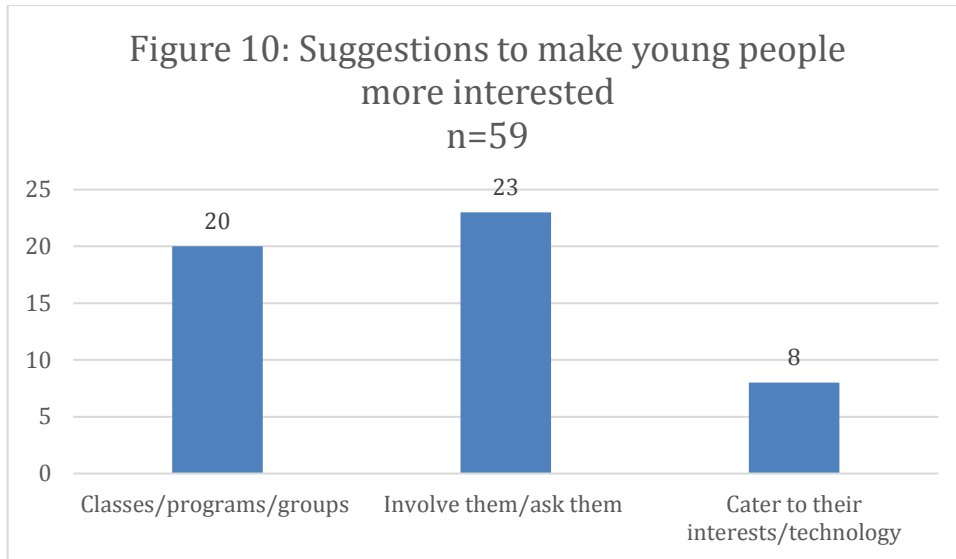


Figure 10: Questionnaire responses to the question “Do you have suggestions about how to get young people interested? And if yes, what are they?”

Question 3H: How do you think this information can be passed onto future generations?

Of the 86 responses to this question, 87.2% (n=75) of people chose family members as an option, followed by gatherings with 80.2% (n=69) of responses, and at home with 75.6% (n=65) of responses. Recipe books, with 51.1% (n=44), was the least chosen option (Figure 11).

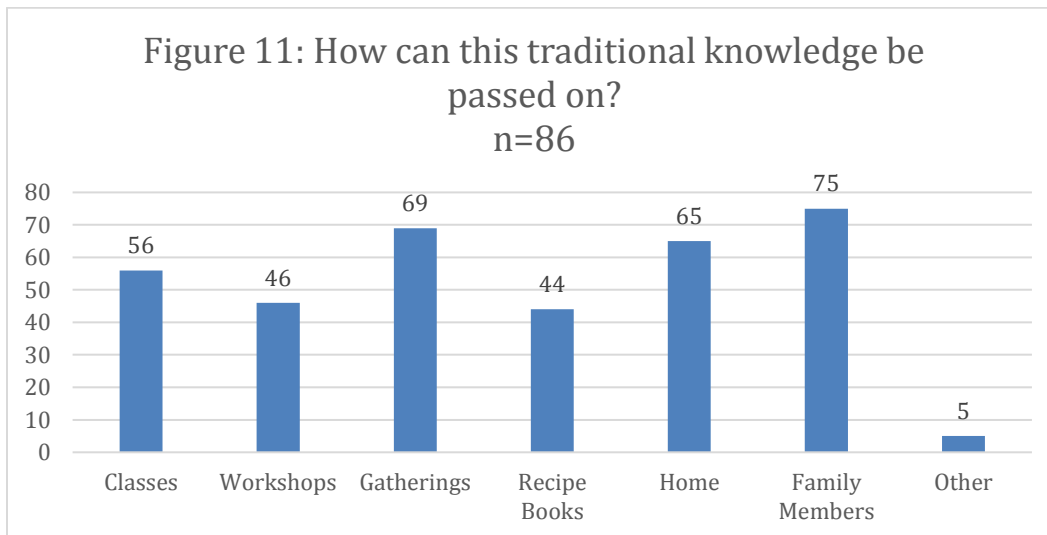


Figure 11: Questionnaire responses to the question “How do you think this information can be passed onto future generations?”

Question 3J: If you could tell your tribal leaders anything about food and hunger issues in your community, what would you tell them?

Of the 45 responses to this question, 26.7% (n=12) of participants thought additional food assistance programs were needed or that current programs should be promoted to bring more awareness of their availability (Figure 12). An additional 22.2% (n=10) of respondents said that better management of natural resources and the laws and policies surrounding them were needed in the community to protect traditional food sources. People also mentioned needing more info and awareness about food banks and nutrition information.

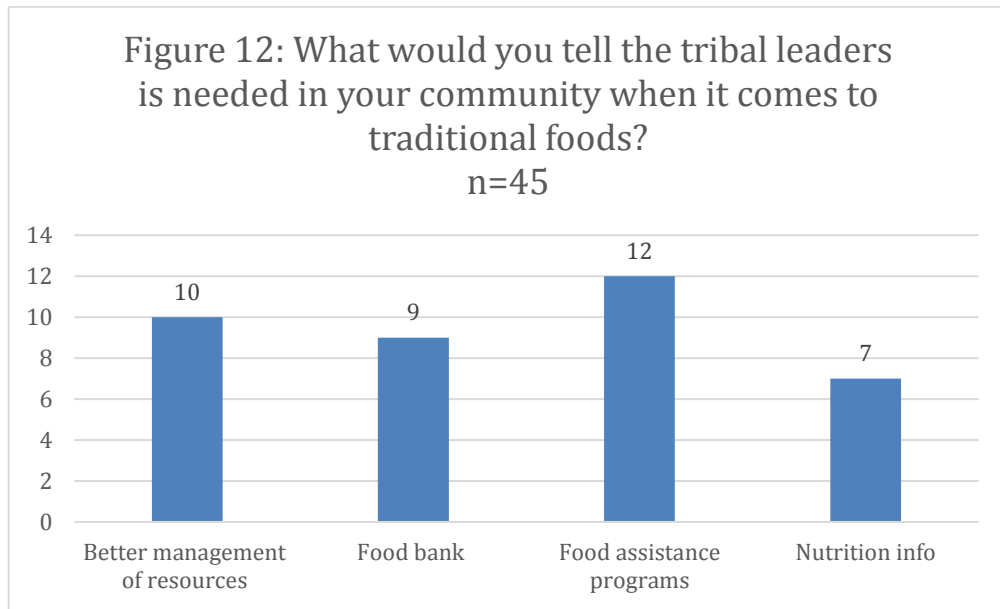


Figure 12: Questionnaire responses to the question “If you could tell your tribal leaders anything about food and hunger issues in your community, what would you tell them?”

Question 3K: If you could tell the federal government anything about food and hunger issues in your community, what would you tell them?

Of the 41 responses, 41.5% (n=17) highlighted the high prices of food and high cost of living in their communities (Figure 13). Another 24.4% (n=10) of respondents wanted the federal government to know that federal regulations did not fit the lifestyles and cultures of rural communities in Alaska. Lastly, 14.6% (n=6) wanted the federal government to support their local governments decisions on salmon use and harvesting.

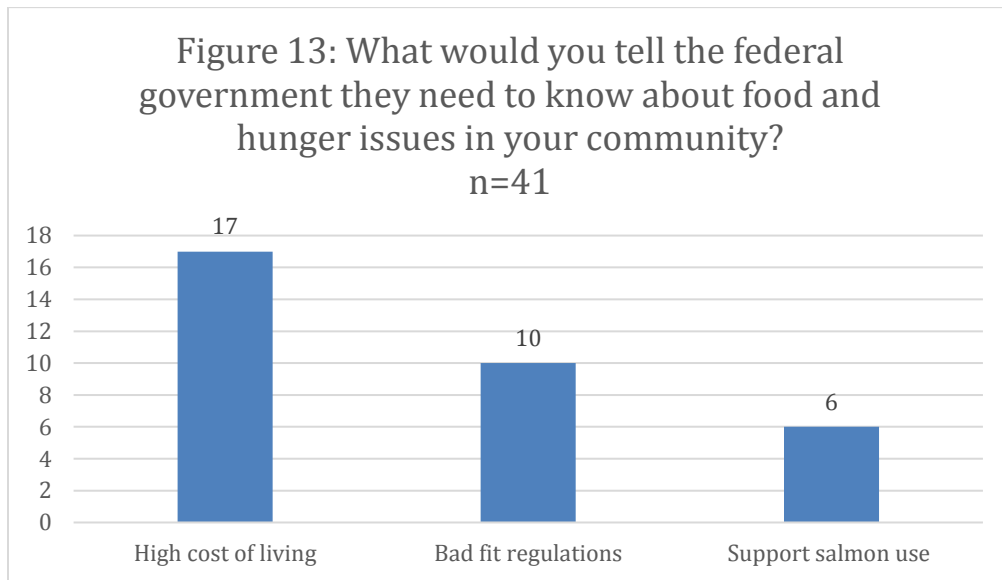


Figure 13: Questionnaire responses to the question “If you could tell the federal government anything about food and hunger issues in your community, what would you tell them?”

Section 4: Organizations and Governance

The fourth section addresses organizations and governance. Three questions from Section 4 and their results are noted below:

Question 4A: Does your community have active groups, including tribal government, federal, government or local organizations, working to solve food-related problems for community members?

A total of 66.7% (n=56) of responses were affirmative, whereas 33.3% (n=28) responded that there were not any active groups working to solve food-related problems in their communities (Figure 14).

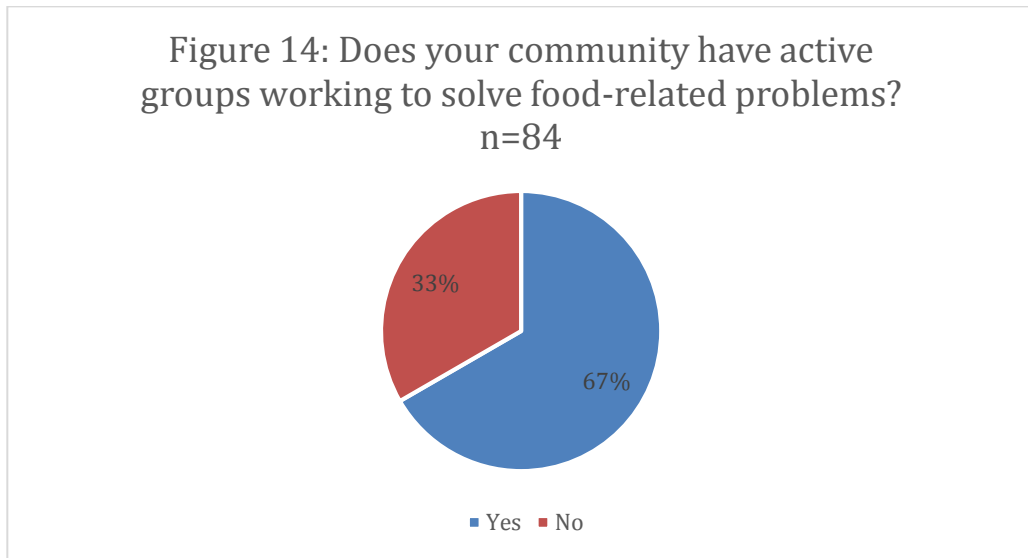


Figure 14: Questionnaire responses to the question “Does your community have active groups, including tribal government, federal, government or local organizations, working to solve food-related problems for community members?”

Question 4A1: If yes, who are these groups and what are they doing?

The most common responses were food banks at 55.2% (n=32) of responses and elder tea and food boxes with 15.5% (n=9) of responses.

Question 4A2: If not, do you need them?

Of the 35 people who responded that there were not any groups solving food-related problems, 82.9% (n=29) said that they were needed (Figure 15).

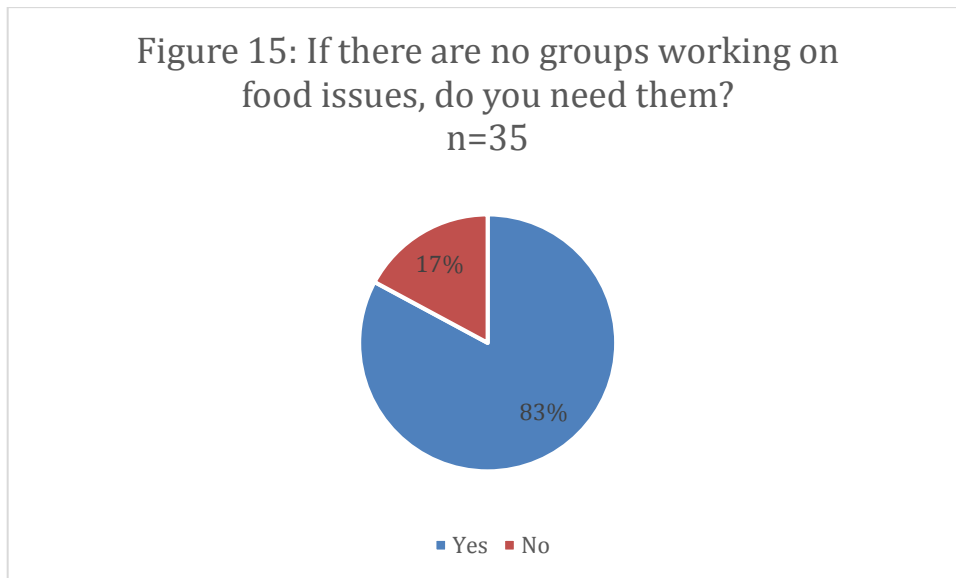


Figure 15: Questionnaire responses to the question “If there are no groups working on food issues, do you need them?”

Question 4A3: Do these groups effectively coordinate efforts with each other in your community?

Fifty-nine percent (n=37) of respondents agreed that the groups were coordinating with each other effectively (Figure 16).

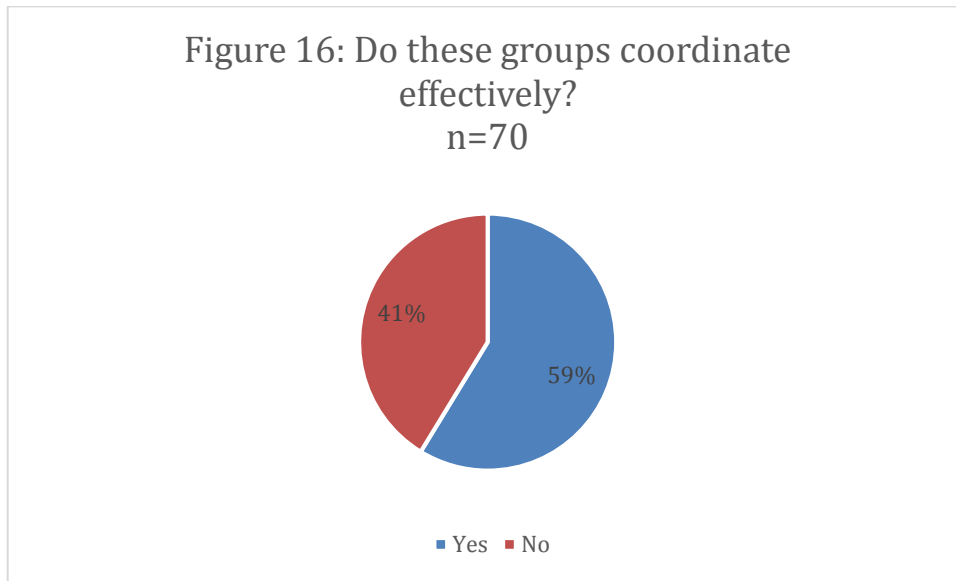


Figure 16: Questionnaire responses to the question “Do these groups coordinate effectively?”

Question 4A3a: If not, how could they be more effective? Please explain:

Of the 41.4% (n=29) of respondents who said that the groups were not communicating effectively, six people were not sure how that could improve and five people said that they should communicate better with the community.

Question 4B: What support is provided by tribal/government policies and/or services traditional for food education and harvesting in your community?

The top three responses were “none” with 55.4% (n=41), “financial” with 21.6% (n=16), and “transportation” with 20.3% (n=15) (Figure 17). Other answers included technical assistance, purchasing or permit preference, land donation, buy local policies, and donation of water rights.

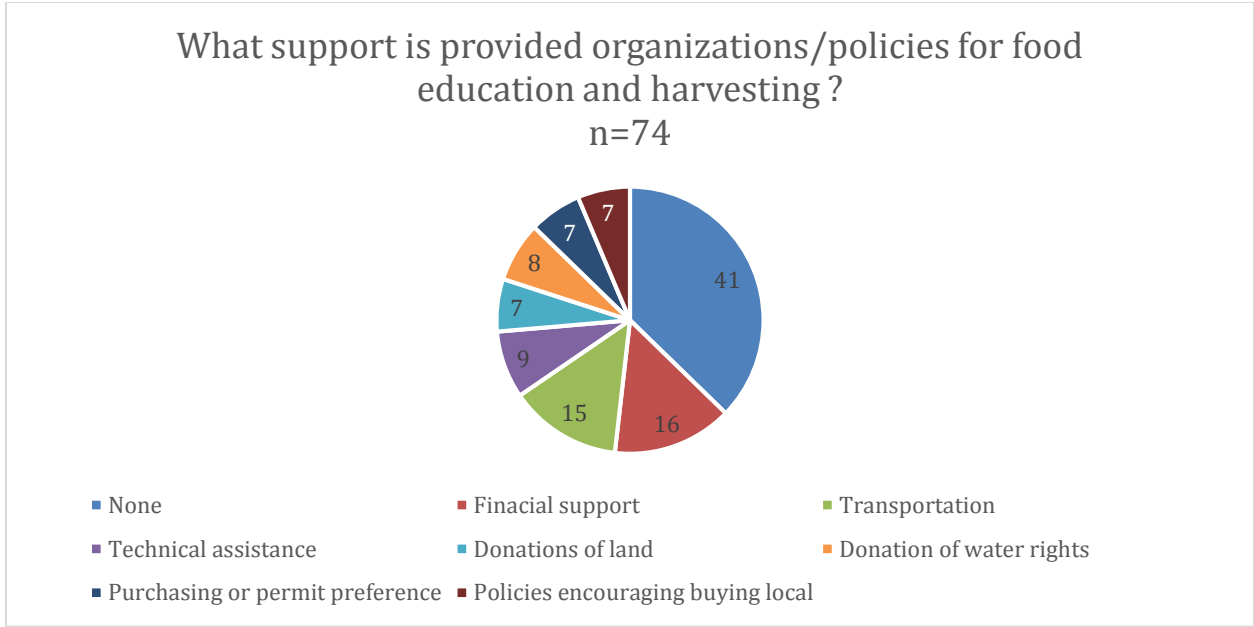


Figure 17: Questionnaire responses to the question “What support is provided by tribal/government policies and/or services traditional for food education and harvesting in your community?”

Question 4C: Are there school programs that encourage the usage of traditional foods?

A majority of people, 64.7% (n=44), responded that there were not any school programs that encouraged traditional food use (Figure 18).

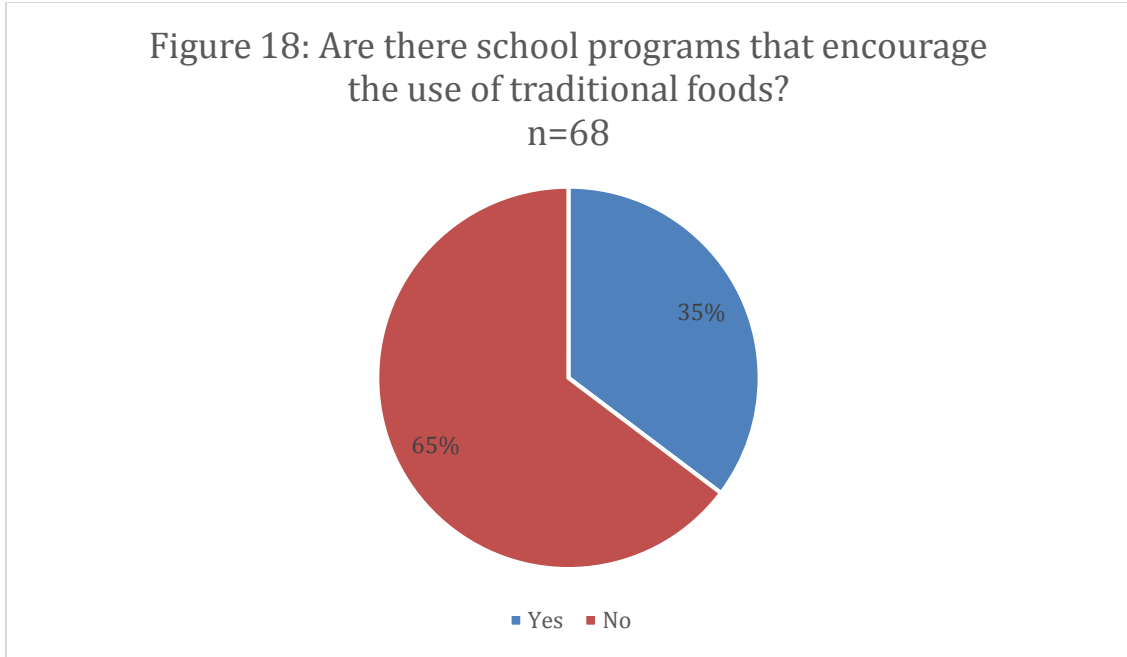


Figure 18: Questionnaire responses to the question “Are there school programs that encourage the usage of traditional foods?”

Question 4C1: If yes, please list them and give a brief description

Of the 24 responses that said that there were school programs that encouraged traditional food uses, six cited “Sea Week” (learning about the sea and sea life) and three cited summer youth and bilingual classes. Other responses discussed serving fish in the schools or were unsure if there was a program.

Section 5: Food Resources

Six questions from Section 5 on food resources and their results are described below:

Question 5A: Use the table below to record how often you or your household consumed each of the following traditional foods within the past 12 months.

The foods with the highest frequency of consumption included salmon, bidarkees, and berries (Figure 19). The foods that were consumed moderately (ten times or less per year) include: moose, shrimp, crab, clams, and herring eggs. The foods consumed the least, and that had the most “never consumed” responses, included: scallops, beach asparagus, porcupine, goat, deer, sea cucumbers, sea otter, sea lion, mushrooms, hare, beaver, birds, and garden vegetables.

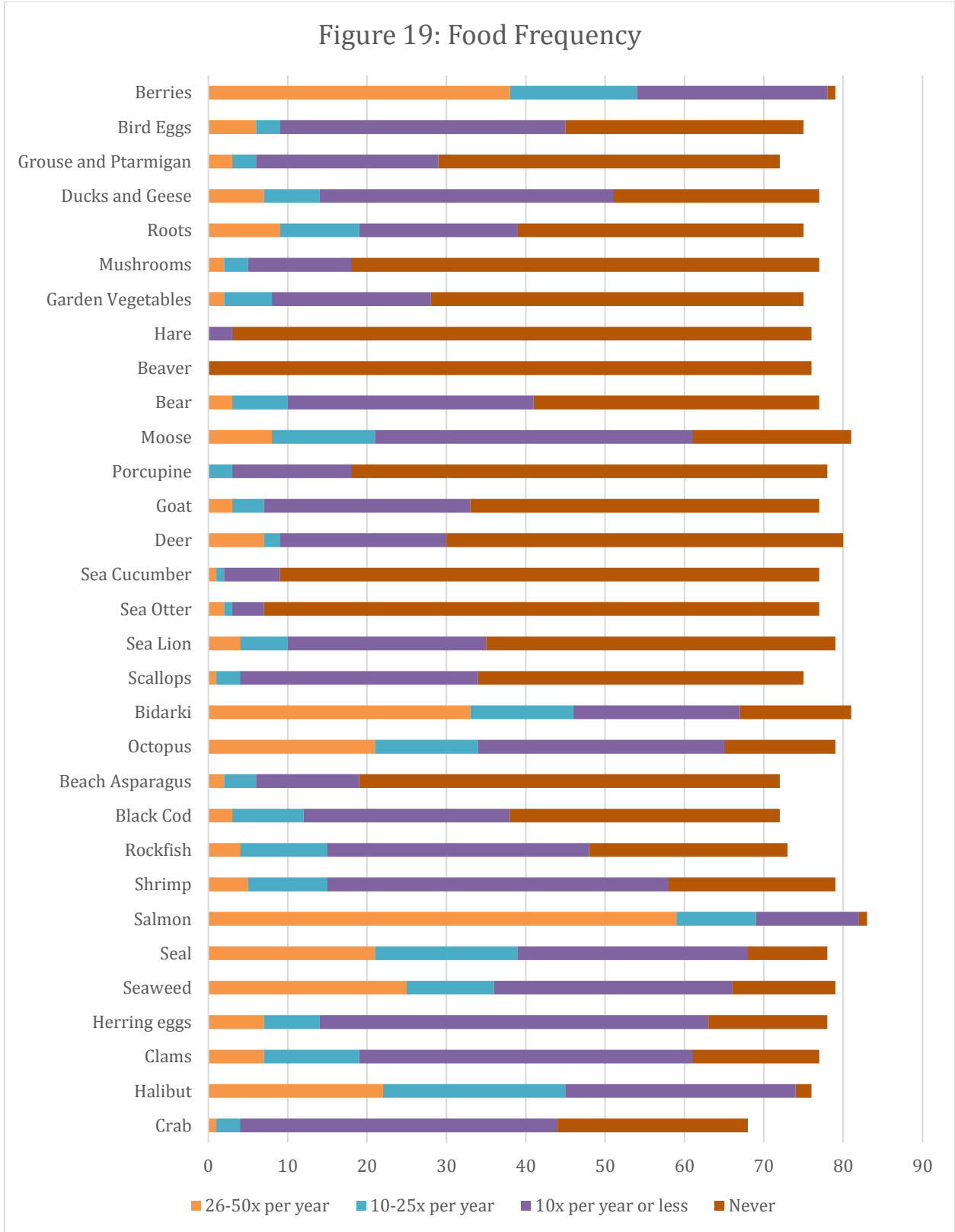


Figure 19: Questionnaire responses to a food frequency table

Question 5D: What are three primary traditional foods harvested in your community?

The most common food listed was fish/salmon with 79.7% (n=63) of participants responding affirmatively (Figure 20). The second most common food was seal with consumption by 40.5% (n=32) of participants. Some respondents also noted berries/plants and land mammals as primary foods.

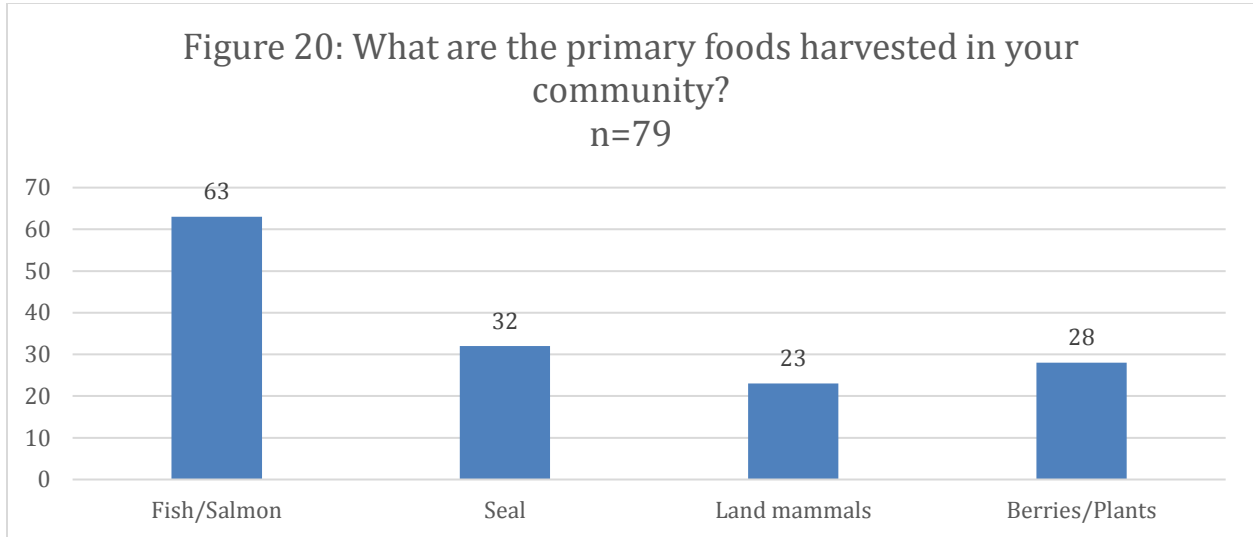


Figure 20: Questionnaire responses to the question “What are three primary traditional foods harvested in your community?”

Question 5G: List one way we can protect traditional foods.

Respondents answered this question in a variety of ways (Figure 21). However, 29% (n=18) of people responded that they needed to educate their communities on proper harvesting management and avoiding overuse of traditional foods. An additional 20.9% (n=13) noted that protecting the environment and nearby waters was important to safeguarding traditional foods.

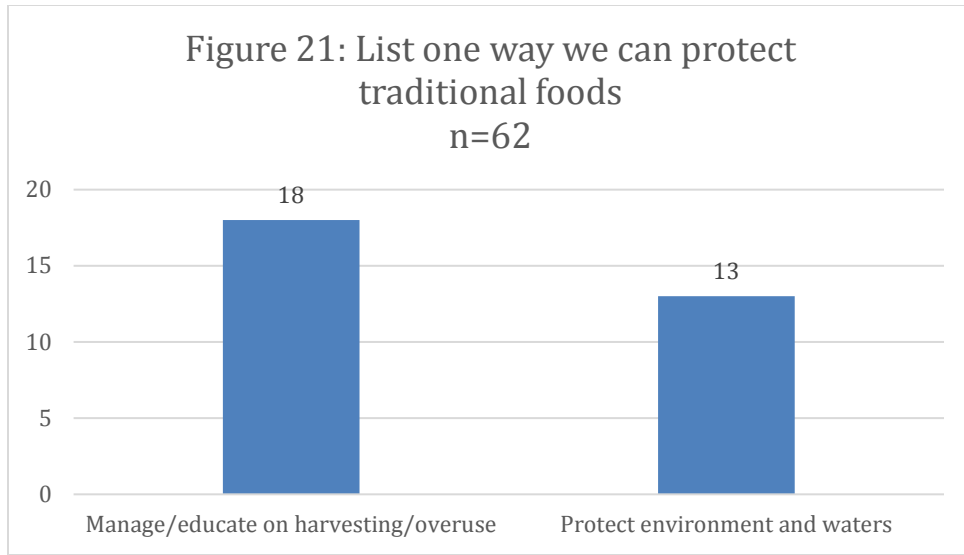


Figure 21: Questionnaire responses to the question “List one way we can protect traditional foods”

Question 5L: Of all the traditional food that you eat in a year, approximately how much (in %) do you get from:

Seventy-nine respondents selected themselves and family members as a source and, on average, they got 65% of their traditional foods from that source (Figure 22). The second most selected option was friends, with 64 participants reporting approximately 25% of their traditional foods from this category. Respondents also identified ceremonies and gatherings as times when they ate traditional foods. Figure 22 shows the total number of respondents for each source.

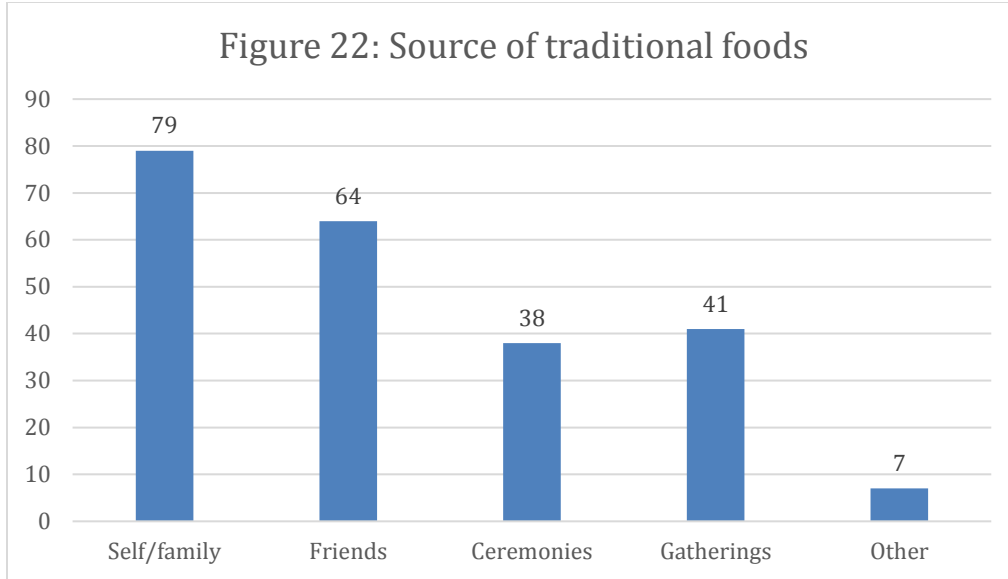


Figure 22: Questionnaire responses to the question “Of all the traditional food that you eat in a year, approximately how much (in %) do you get from the following?”

Question 5N: Is there anything limiting you from accessing traditional foods?

The top three factors that limited participants from accessing traditional foods were fuel with 53.3% (n=40) of responses, transportation at 44% (n=33), and time at 28% (n=21) (Figure 23). Skill, knowledge, desire, and physical ability were each reported in fewer than 20% of responses. Time opportunity in this question means that the time spent could have been used for something else.

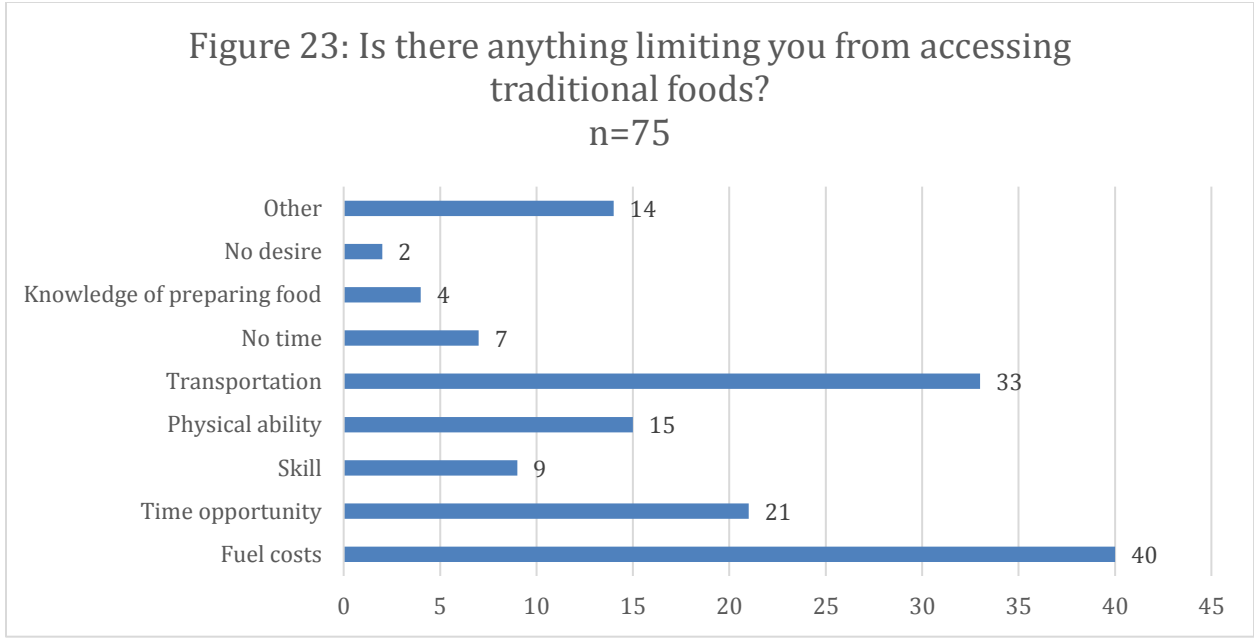


Figure 23: Questionnaire responses to the question “Is there anything limiting you from accessing traditional foods?”

Question 50: Is your family able to eat as much traditional foods as they would like?

In total, 49.4% of the 41 respondents answered that they can get as much traditional foods as they would like (Figure 24). However, 16.8% (n=14) of the respondents answered no, and the rest were unsure.

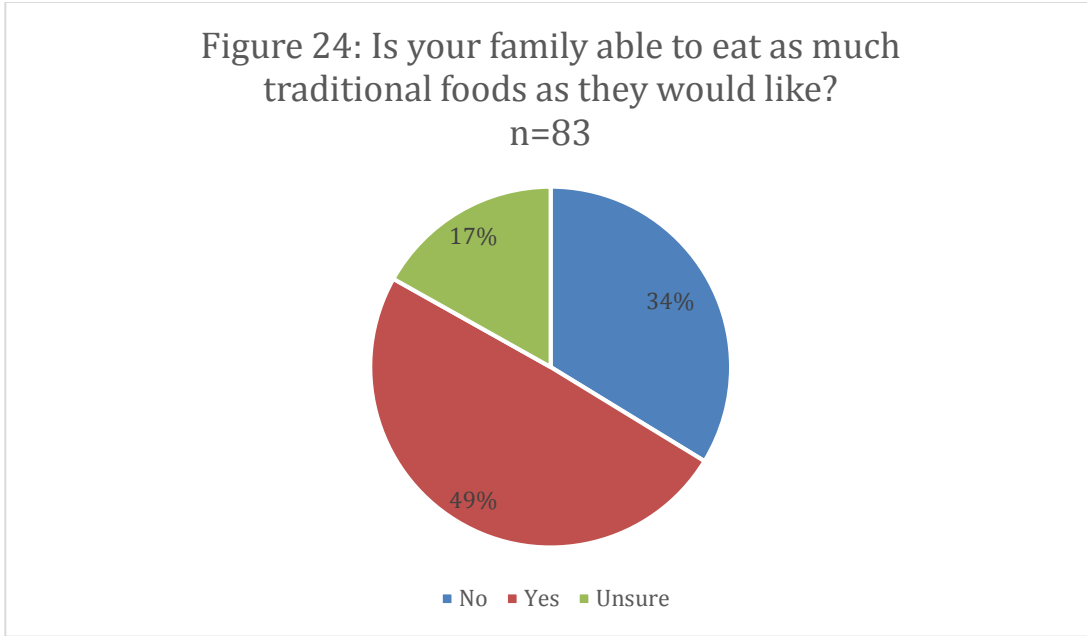


Figure 24: Questionnaire responses to the question “Is your family able to eat as much traditional food as they would like?”

Section 6: Natural Resources and the Environment

The sixth section of the questionnaire focused on natural resources and the environment.

Three questions from Section 6 and their results are noted below:

Question 6A: Does your tribe/community have a land use plan?

Of 83 respondents, 62.6% (n=52) were unsure if there was a land use plan and an additional 27.7% (n=23) of respondents answered that there was not a land use plan (Figure 25). Of the participants who answered yes, 62.5% (n=15) were unsure if there was a section about sustaining traditional foods in the land use plan (Figure 26). Similarly, of the participants who said yes, 62.1% (n=41) were also unsure if there was a section that plans for the community food supply (Figure 27).

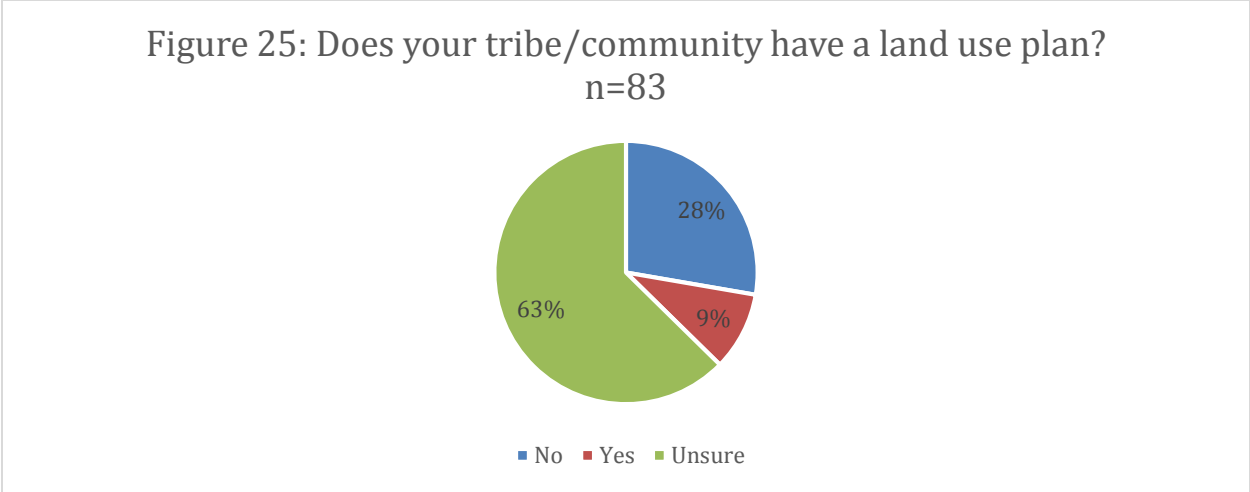


Figure 25: Questionnaire responses to the question “Does your tribe/community have a land use plan?”

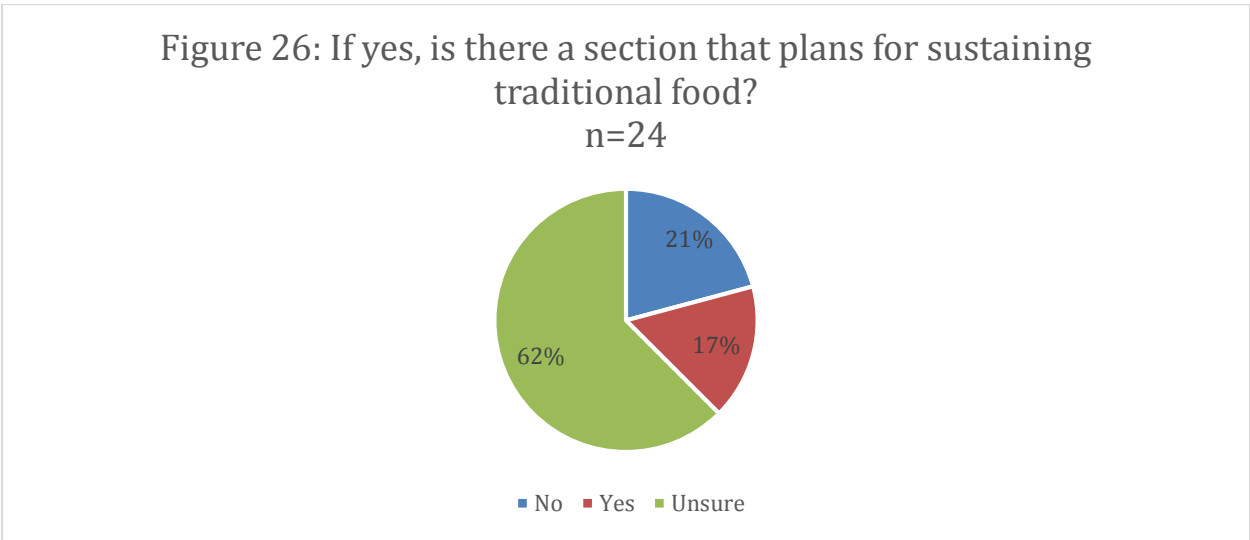


Figure 26: Questionnaire responses to the question “If yes, is there a section that plans for sustaining traditional food?”

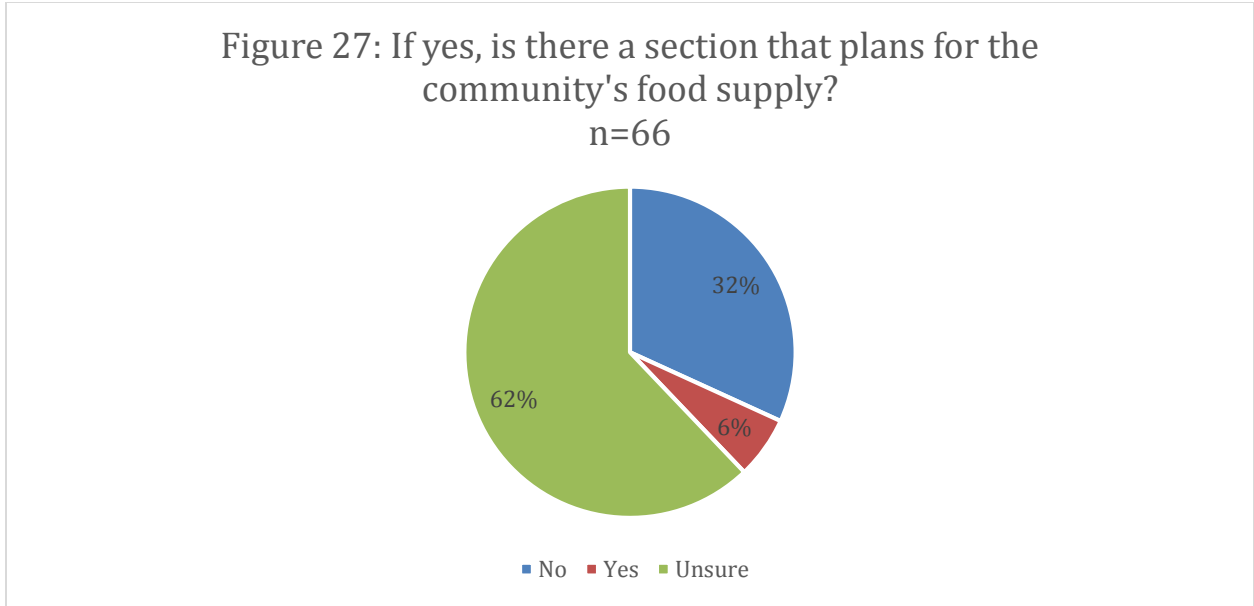


Figure 27: Questionnaire responses to the question “If yes, is there a section that plans for the community's food supply?”

Question 6B: What environmental changes have affected your local food system? How?

Two main changes were identified by the 45 people who answered this question: 40% (n=18) named warming related to climate change and 13.3% (n=6) identified contamination (ex. Fukushima, oil spills, and pollution) (Figure 28). Seventy-one percent (n=55) of respondents reported that they had not heard of the term ocean acidification, whereas 60% (n=48) of respondents answered that they were aware of rising ocean temperature (Figure 29, Figure 30).

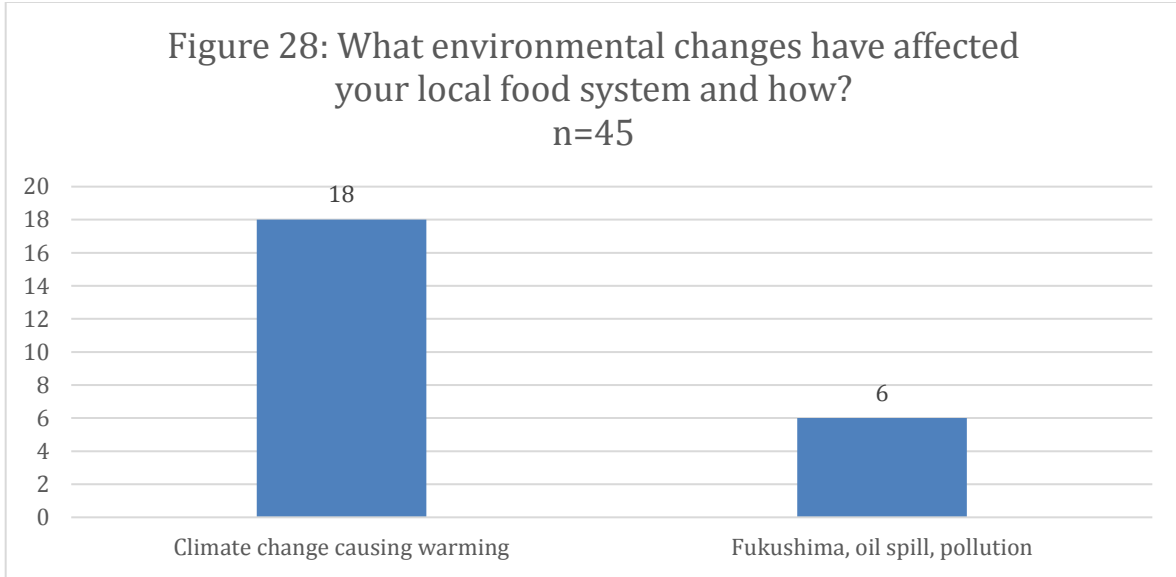


Figure 28: Questionnaire responses to the question “What environmental changes have affected your local food system and how?”

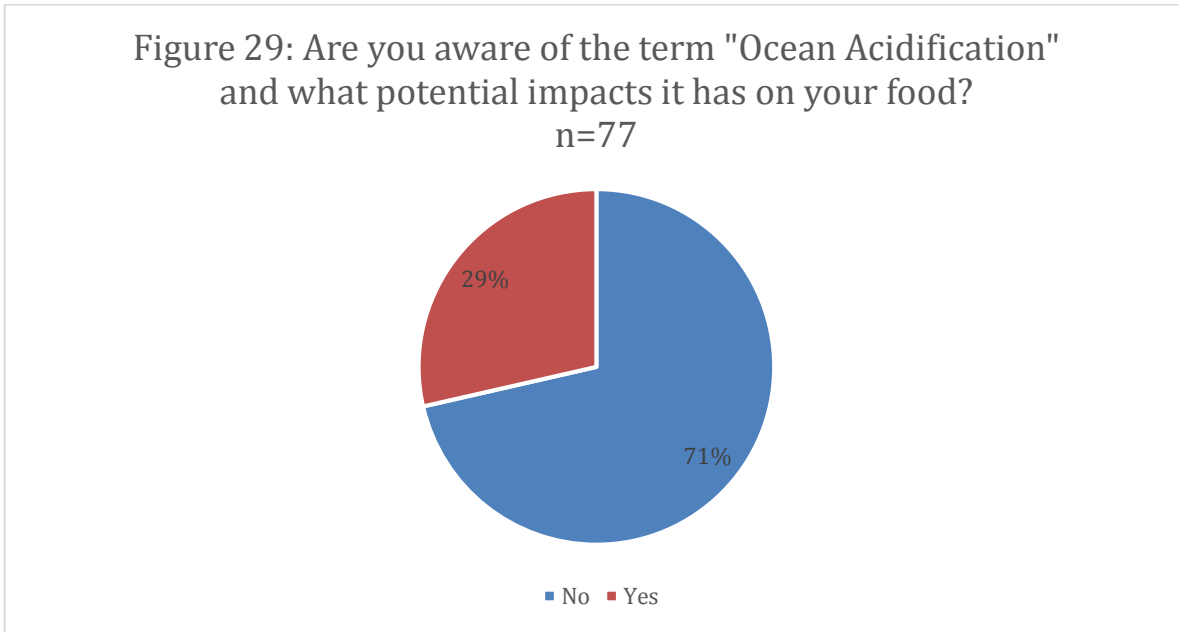


Figure 29: Questionnaire responses to the question “Are you aware of the term "Ocean Acidification" and what potential impacts it has on your food?”

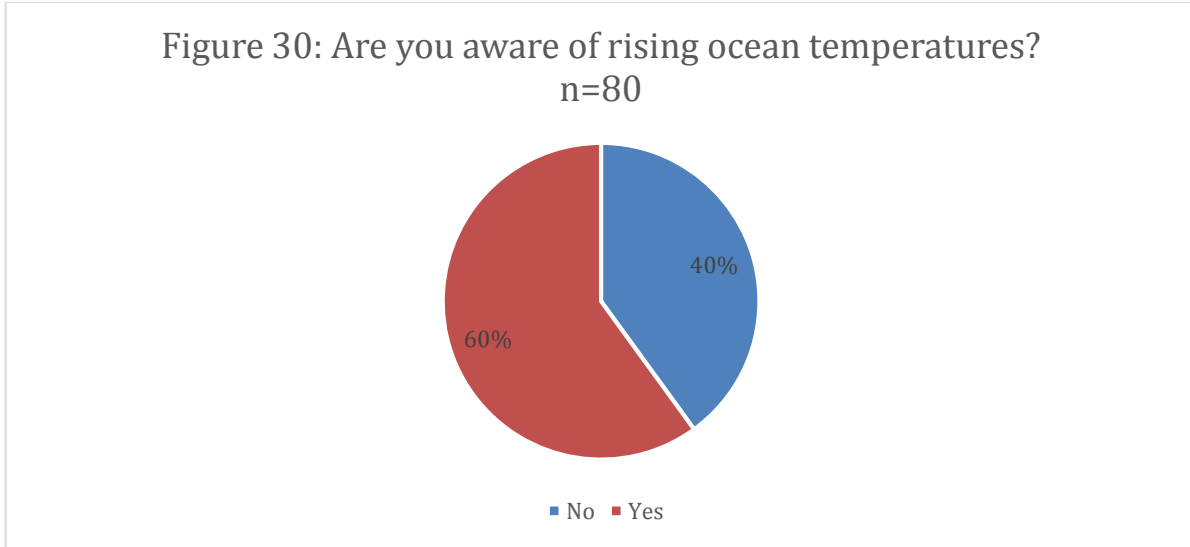


Figure 30: Questionnaire responses to the question “Are you aware of rising ocean temperatures?”

Question 6C: What food resource do you think is the most vulnerable to climate change?

Fifty-seven percent (n=44) of participants thought that salmon/fish were the most vulnerable to climate change (Figure 31). The next most common response was the whole food chain with 23.4% (n=18) of answers. A smaller number of respondents, 9.1% (n=7), said berries and plants were most vulnerable.

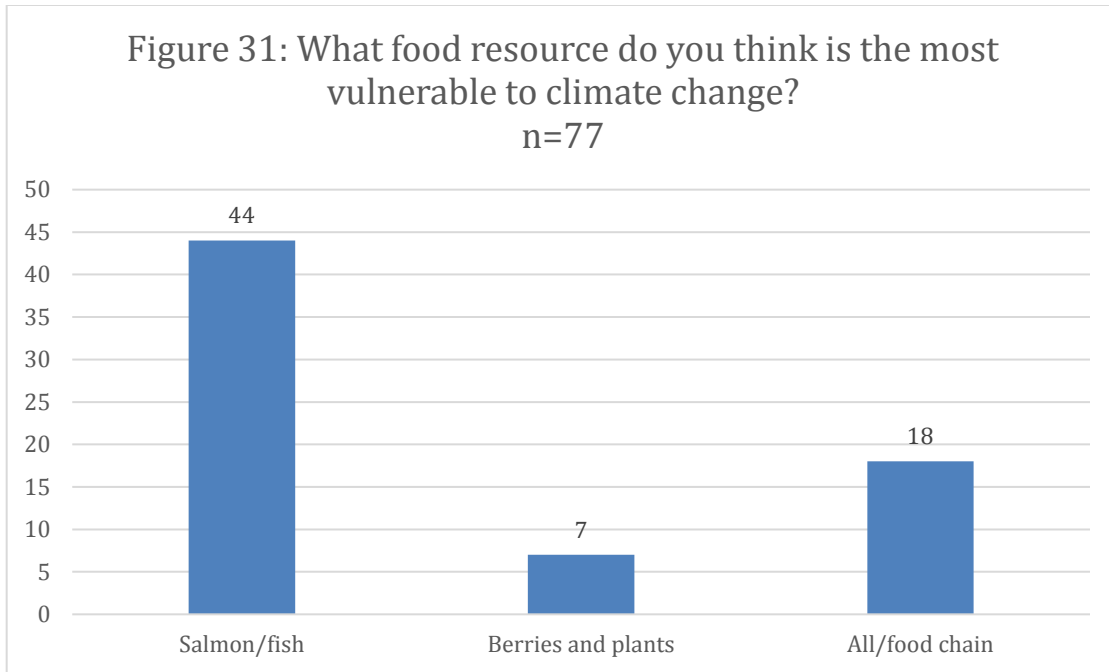


Figure 31: Questionnaire responses to the question “What food resource do you think is the most vulnerable to climate change?”

Discussion and Recommendations

The discussion section focuses on the six sections of the questionnaire. These sections include community food resources (section 1), diet and health (section 2), culture (section 3), organization and governance (section 4), food resources (section 5), and natural resources and environment (section 6). Each section also offers actionable recommendations and avenues for future research.

Section 1: Community Food Resources

For question 1A (how important are the following sources of food for people in your community?) one interesting finding was that food stamps (i.e., SNAP) were deemed to be the least important food source. This could be due to cultural norms of having a negative association attached to food stamps. A negative association with food assistance has been reported in

interviews in other rural communities in Alaska due to the belief that food assistance programs may negatively impact younger people's motivation or the need for traditional methods of getting food.¹⁰ Additionally, it was found that there were no school or tribal gardens in the communities, although other types of community gardens were deemed important. Tribal and school organizations could explore garden-related grant opportunities. Therefore, outreach and education would be beneficial to both increase the availability of and access to healthy foods and help to decrease the stigma against SNAP funds, which can potentially be used for gardening items.

Although Question 1C (Are there certain foods that you need or would like to eat that are difficult to get, or are not available, in your community?) does not directly ask about food insecurity, it indicates that a majority (64%) of participants agreed that access to specific foods is limited in their communities, particularly fresh fruits and vegetables. Considering that an estimated 20-25% of rural Alaskans are food insecure,² this topic warrants further study in the Chugach region, especially in the wake of the COVID-19 pandemic.

Recipes and information on preparing and growing traditional foods were identified as the most useful strategies for improving food resources in Question 1E (Which of the following do you think are useful, or would be useful, in improving your food resources?). The Alaska Native Tribal Health Consortium (ANTHC) has gathered traditional food recipes that included nutrition information,¹¹ however, these included some traditional foods from across Alaska that may not be useful for food preparation in the Chugach area. In 2018 the CRRC completed a project that ran parallel to this questionnaire in the form of a regional recipe book. They collected recipes from the Chugach region and included nutritional information on a traditional food in each recipe.

Section 1 Recommendations

One recommendation that came out of the Section 1 questionnaire results would be to further assess the different communities on their knowledge of and access to food assistance programs. Communities could be educated on how to use SNAP benefits to purchase hunting, fishing, and gardening supplies. In a recent study, fewer than 10% of rural Alaskans used their SNAP benefits in that manner.¹²

The food assessment questionnaire did not mention the Food Distribution Program on Indian Reservations (FDPIR) program, which in some cases can result in better access to adequate amounts of food than the typical SNAP benefits offer. FDPIR offers a set amount of assistance per month regardless of local prices, which can make it more beneficial in rural areas. Currently, Eyak is the only Chugach area community that participates in the program and hosts a distribution center. Port Graham had begun the initial stages of application for the program but never completed it. Getting information from these two communities on what worked and what did not would be essential to assessing feasibility for this program in the region.

The key difference between the FDPIR program and SNAP is that the FDPIR program distributes a set amount of food regardless of local price due to it coming from national distribution centers. On the other hand, the SNAP program allows each participant a certain amount of funds each month to purchase approved items at approved retailers. The pros to the FDPIR program are that participants may receive more food depending on how high the cost of food is in the village stores and that the income eligibility limits are less strict than the SNAP program. However, the SNAP program has the benefits of being used in many retail stores and community stores across the region, with the exception of Chenega and Tatitlek where there are

no participating stores. Another key difference is the approach each program has to providing culturally significant food, SNAP currently allows funds to be used to purchase subsistence supplies/items, while FDPIR is currently looking to including more culturally appropriate foods dependent on region.

One of the cons of the FDPIR program is that the community would need to have trained staff and a location to store food and track orders for participants. Another possible limitation to using this program would be the limited shipping and delivery options to the communities. The FDPIR program could be implemented on a per community basis or perhaps it would be possible to use Chugachmiut or another organization's structure to implement a region-wide program to decrease staff requirements and workloads for each community. In some instances, divisions or behavior health programs have been involved in running the FDPIR program in other communities.¹³ It is also notable that the FDPIR program in Alaska is in part organized and managed regionally by ANTHC and reaching out to them for more details would be a good starting point.

Section 2: Diet and Health

When comparing the results of question 2A to 2B (questions rating the quality of the respondents' diet and health) more participants viewed their diet quality to be fair (fair is the medium quality ranking) than those who viewed their health as fair. Overall, a greater number of participants viewed their health as positive (positive in this context includes the range of the top three choices: excellent, very good, and good) than those who viewed their diet quality as positive. Also, a greater number of participants rated their diet quality as excellent (top positive rank choice) as compared to their health. The results of this question may indicate that people perceived their diets as not very important to their health, or at least not the main factor in health,

but no conclusion can be drawn without asking additional questions. These questions and their answers demonstrate the need for further study on how people in the Chugach region frame their health and diet.

For the results of question 2C (Is information about diet and nutrition available in your community?) it is important to note that a registered dietitian was hired by Chugachmiut in 2017 and has since been providing nutrition education to most of the region. Nutrition information was considered important in question 1E (Which of the following do you think are useful, or would be useful, in improving your food resources?) and registered dietitians are highly qualified to provide nutrition education and information,¹⁴ so it is hoped that increased access to nutrition education will have a positive impact on community health.

Question 2D (Are health problems in your community caused or exacerbated by lack of healthy, nutritious, traditional foods?) is also closely related to food insecurity and the negative implications it has for health.¹⁵ Participants agreed that a lack of access to nutritious foods and traditional foods contributed to health problems. Several participants noted that there is a dependence on sugar or low nutritional quality foods in the free text responses. Future research should address perspectives on the perceived abundance of nutrient-poor foods, such as sugary beverages.

Section 2 Recommendations

One recommendation that came out of this project, to increase nutrition education, has already been partially addressed with the addition of a registered dietitian to the region's health care team. However, the registered dietitian is limited to primarily focusing on sharing diabetes-related education through the Special Diabetes Program for Indians (SDPI) grant. A component of the FDPIR program is nutrition education, this could be facilitated with help from the

expanding Chugachmiut clinic in Seward and support staff for the region. Perhaps additional qualified staff could provide nutrition education and further investigate nutrition security in the region to answer questions that were raised by the respondents. Competitive grants are also available for nutrition education programs involved with FDPIR.¹⁶

Section 3: Culture

Question 3E (Do you think that young people in your community are interested in food traditions?) asked if participants thought that young people in their communities were interested in traditional foods. Most respondents perceived that young people were interested, and many offered suggestions as to what could be done to make the youth more interested in traditional foods. In addition, several respondents suggested that it would be a good idea to ask the youth the best way to involve them and adapt to their changing cultural attitudes.

Recipe books were the least chosen option for passing on information about how to gather and prepare food to future generations in Question 3H (How do you think this information can be passed on to future generations?). This finding contrasts with the answers to Question 1E (Which of the following do you think are useful, or would be useful, in improving your food resources?), and perhaps shows that people see youth as not interested in traditional cookbooks. It also may play into the perception shown in Question 3E (Do you think that young people in your community are interested in food traditions?) that youth are highly interested in technology. Respondents overwhelmingly chose “family,” “gatherings,” and “at home” for passing down this information.

A common theme in Questions 3J and 3K (focused on telling tribal and federal leaders about local concerns) was making government and tribal leaders aware that regulations and management policies from the country or state may not fit the lifestyles of people in rural

communities. As seen in the Inuit Food Security Conceptual Framework, this same topic area is a priority for other communities of Alaska as well.⁷ One concern that respondents wanted tribal leaders to understand was the desire for better implementation and awareness of food assistance programs. A lack of awareness could relate to the possible negative perception of food assistance programs seen in question 1A.¹⁵ Additionally, participants wanted the federal government to understand the magnitude of their high cost of living and high cost of everyday items. It has been reported that food deserts have a negative impact on body mass index and related health conditions.¹⁷ This is relevant because several of the communities in this region could meet a definition of a food desert when considering store-bought foods, which is defined as an area in which it is difficult to buy affordable or good-quality fresh food.¹⁸

Section 3 Recommendations

Suggestions include involving youth in traditional food gathering and preparation. Youth in the Chugach region should also participate in brainstorming and problem-solving food-related issues. One recommendation would be to implement a survey or focus group targeting youth. The current questionnaire did not have any respondents under the age of 18, and any planning around youth involvement would benefit from their input. It may also be worth including young adults, between 20-30 years of age, in developing traditional food education and programming as well, as they are the future leaders and decision makers of these communities.

Respondents highlighted the need for better education about food assistance programs in the region. Providing education may address this need at the community level. People also asked their tribal leaders for better implementation of food assistance programs. Efforts could be undertaken to evaluate existing programs. Additionally, one of the key points that respondents wanted federal leadership to understand was the high cost of living in their communities. The

FDPIR program could help some community members mitigate the high food costs. Also, the potential for garden-related development and grants to help ease the burden of the high cost of produce would be another option to pursue.

The COVID-19 pandemic has shown to negatively impact many areas of food security in the 2021 Arctic Report Card. Two areas that stood out were supply chain issues negatively impacting access to store bought foods and quarantine restrictions limiting access to harvesting areas.⁸ To address these issues one village in Alaska led a court case to authorize emergency hunts and provide food for their community. It is recommended for other communities to create a plan if something similar would be needed in the future for this area to avoid any regulatory or legal process bottlenecks.^{19, 20}

Section 4: Organization and Governance

In question 4A (Does your community have active groups working to solve food-related problems for community members?) most respondents stated they knew of organizations working to solve food-related problems, with the most common answer being food banks. Considering that a significant number of respondents were not aware of any groups helping solve food-related problems, and that people want more education on food assistance programs, these programs could be discussed more within communities to help decrease the negative stigma that surrounds the use of food assistance programs.

The most common response to question 4B (What support is provided by tribal/government policies and/or services traditional for food education and harvesting in your community) was “none,” with financial and transportation being the next two most common answers. When looking at question 5N (Is there anything limiting you from accessing traditional foods?) it was noted that fuel and transportation were the highest-ranked limiting factors that

prevented people from accessing traditional foods. There is currently limited support for these issues. In Cordova, there is a tribal sponsored boat that can take members out to fish/gather and also provides harvested food to elders and members of the community.

Question 4C (Are there school programs that encourage the usage of traditional foods?) revealed that most respondents thought there were no school programs that encouraged the use of traditional foods. However, respondents mentioned brief events or summer programs that were at least partially focused on the topic, notably Sea Week and bilingual classes. No standalone programs focused on food preparation. In 2019 the Chugachmiut Heritage Preservation program released a Traditional Food Heritage Kit/Lesson Plan that is available for teachers or programs to loan/checkout, it has different curriculums based on the targeted group's age range. Currently there is not set schedule for these lessons and it is up to the teachers to implement them.

Section 4 Recommendations

One key recommendation is to increase the awareness of food assistance programs such as SNAP (i.e., Food Stamps) and FDPIR. Along with awareness of these programs, it is imperative to provide education on possible benefits of these programs outside of providing funding for food. Another recommendation is to investigate ways to help community members pay for fuel and transportation costs related to harvesting and hunting traditional food sources. One option would be to consult with the Eyak tribe and perhaps model programs on their tribally-funded hunting boat. A final recommendation to come from this section is to expand school programming that teaches youth about traditional food use. One type of program would be a fish to school program, research in southwestern Alaska have shown that this style of program has increased the diet quality of the students.²¹⁻²² In the past, in Cordova (including the Eyak tribe), there has been a fish to school event that has focused more on the economics and

jobs provided by salmon. It would also be beneficial to advertise or bring awareness to the Traditional foods Heritage kits/lesson plans available through Chugachmiut and find ways to help and support teachers that want to implement the lesson plans.

Section 5: Food Resources

Question 5A (question focused on food frequency) indicates potential resource-specific focus areas for educational purposes or future classes, especially when compared with other data sets about the population counts of different species. For example, if one of the lesser used food sources, such as ducks, have a high population count in the area, then a class on hunting and processing/preparing them would be popular. The results of this question also align with other findings in the questionnaire such as that garden vegetables were not very popular and gardens were not seen as a very important food resource.

Fish and seal were the most harvested foods in answers to Question 5D (What are three primary traditional foods harvested in your community?) and thus may be the foods that most people already have knowledge about harvesting and preparing. This is the case in other areas of Alaska as well. In Western Alaska, researchers have found that up to 40% of energy in older adults' diets came from fish, and that this number is decreasing among youth, possibly due to less interest or desire to learn the skills needed to harvest and prepare traditional foods.²¹⁻²³

Question 5G (List one way we can protect traditional foods) shows the most common recommendations were to manage and educate on the topics of overharvesting and overuse. This result is meaningful considering that people also wanted government officials to understand that not all resource management policies fit for rural communities. The Inuit Food Security Conceptual Framework also showed that this is an important issue. ANTHC sponsors regional symposiums focused on Plants as Food and Medicine, and at this time one has not been held in

this region; this could be a potential option in the future. These symposiums also discuss ethical harvesting, which was looked at recently in research that highlighted two different frameworks for food security that included holistic perspectives on harvesting.²⁴

Most respondents to Question 5L (Of all the traditional food that you eat in a year, approximately how much do you get from each source) and their families provided their own traditional foods. This was found in other research across the state as well, including one study showing that 66% of Native Alaskan women enrolled in the Women, Infant and Children (WIC) assistance program received traditional foods from family or friends.²⁵ Another study noted a similar rate of traditional food harvesting/hunting between genders, but that men were more likely to hunt and fish, while women were more likely to gather greens and pick berries.²⁶ This indicates a tendency to share foods and share responsibilities for gathering traditional foods between family members.

The main barrier and limiting factor reported in question 5N (Is there anything limiting you from accessing traditional foods?) was fuel cost followed by transportation and time. This follows the traditional statistics of food security being tied to income and access to transportation, even if for different reasons than are typical in an urban setting.²⁷ Fuel costs have been shown to be linked to the numbers of trips and distance of trips that rural Alaskans take for subsistence activities in a negative manner.²⁸ Conversely, knowledge and skill were seen as less significant barriers.

Question 5O (Is your family able to eat as much traditional foods as they would like?) relates directly to food sovereignty and revealed that less than half of respondents were able to get as much traditional foods as they would like. Better access to traditional foods is needed based on desire and to assist in improving the health of communities. Access was found as a

limiting factor to food sovereignty in the recent Arctic Report Card 2021 publication.⁸

Section 5 Recommendations

The food resources table offers a look at what is consumed and harvested most in each community. It is recommended that this data be compared with data sources that provide population counts on animals and sea life in the area, which will help identify if any potential food resources are not being used effectively or sustainably. This could help increase food sovereignty and perhaps alleviate some of the economic pressure caused by the high cost of purchasing food.

Furthermore, information on food usage and frequency could be used to determine topics for food preparation/traditional knowledge classes in the future. For example, it may be more beneficial to have a class on preparing or preserving fish than to have a class on preparing beaver meat. This would also be paired well with any data on population counts of harvestable animals in the region.

The ANTHC Alaska Plants as Food and Medicine symposiums may be another option to help bring more discussion to sustainable and ethical harvesting in the region. This could be done by hosting one of the symposiums in the region or by advertising the symposiums that happen in other regions in the communities for people to attend by traveling or virtually.

Another key takeaway from this section is that fuel and transportation were the most cited barriers to obtaining traditional foods. Communities could consider ways to help with those costs directly, such as through grants or other community resources. One avenue that communities could explore is the Alaska Department of Commerce, Community, and Economic Development revolving loan fund that helps communities of 2,000 or fewer people buy bulk fuel. Another

example is a tribal sponsored boat and program in Cordova that provides subsistence foods to elder tribal members.

Two more resources that could help alleviate the high cost of food and facilitate garden programs would be the Alaska Villages Initiative, a nonprofit that is focused on rural Alaskan farming, and the Alaska Region Intertribal Agriculture Council.

Section 6: Natural Resources and Environment

Most respondents were unsure if their community had a land use plan. Communities would benefit from education on land use plans and to make sure that those plans address sustainable foods uses, or at the very least involve more community members in the planning processes.

Respondents who were aware of environmental changes attributed them to climate change and warming. Most respondents had not heard of ocean acidification, but were aware of rising ocean temperatures. This finding shows that most people are somewhat aware of issues that can have an effect on their food supply and resources. The CRRC has been making efforts to educate people of the region on climate change related issues, and, in the future, there may be a dedicated section on their website available as a resource for the region. As of the completion of this project the section on the CRCC website is listed as coming soon.

Similarly, most respondents thought that sea life was the most vulnerable to environmental changes. This finding could nudge community members to get more involved with land use and sustainability planning to help protect their resources. People may be inclined to participate in future planning for changing sea levels and the impact on resource gathering. Research indicates that traditional knowledge on this subject is just as valuable as scientific knowledge.²⁹

Section 6 Recommendations

One recommendation is for each Chugach region community to review or update food and land use plans, specifically addressing sustainability of resources. Community planning that included a land use plan to addresses food security was completed in communities of the Tanana Chiefs Conference region during 2019 and it may be worthwhile to look at their Community Planning Resource guide.³⁰ It would be appropriate for the communities to include a section in the land use plan on salmon and other marine life and plans to protect the resources and, if necessary, how to adapt to possible scenarios. Creating a plan that specifically addresses emergencies would also be recommended, to help alleviate issues that have been shown to arise with the recent pandemic.

Conclusion

The 2017 CRRC food assessment questionnaire in the Chugach region revealed that nutritious foods are difficult to acquire in rural Alaska communities; that the use of traditional foods should be passed on to younger generations; and that traditional foods should be consumed as a sustainable food source. Respondents thought that traditional knowledge should be passed on through hands-on learning or classes rather than books, however, there is also interest in using technology to pass on information to the younger generations. Respondents thought they may be lacking in quality nutrition education, which could be alleviated by education from a nutrition expert. Results also show that respondents wanted leadership, both local and national, to help design regulations that were a better fit for their community needs. Many respondents in the Chugach region communities were not aware of all the assistance programs available, although they thought the most important assistance would be with fuel and transportation. Due to the many barriers noted, less than half of the respondents felt they could harvest as much traditional

food as they wanted. Finally, in terms of the environment, most respondents were aware of climate change and warming but less aware of specifics, such as ocean acidity. Overall, most were worried about accessible and renewable traditional food sources.

Strengths and Limitations

The limitations of this project include the number of questions and the amount of data requiring analysis. Fewer and more focused questionnaire questions could provide more detailed information. Another limitation of this project is the data quality. The length of the questionnaire caused some questions towards the end to receive relatively brief answers and fewer responses, thus impacting the integrity of the results. A final limitation is that the questionnaire results are now over five years old and a shift in the communities due to the COVID-19 pandemic may have impacted the participants' answers. More focused surveys could determine consistency or a change in viewpoints.

One of the strengths of this project was that the questionnaire was altered by the CRRC to be more culturally relevant to the region. Cultural relevance is important because it allows people to answer the questions accurately and shows participants that the surveyors understand and respect the subject matter. Another strength of this project was that the questionnaire was broken into sections that fit previously established models of food sovereignty, which made comparing the results of other regions easier.

Dietetics and Nutrition Practice Implications

This is the first questionnaire of its kind performed in the Chugach region of Alaska. The analysis of this data can help inform programs, practice, and further research in remote Alaska Native communities. For this region in particular, the diabetes and nutrition program within Chugachmiut can use this data to establish and advocate for programs or grants that align with

the recommendations provided here. Furthermore, additional regions and organizations could build off the questionnaire or results of this project for their own needs.

This project also builds a set of baseline data to compare to in the future if a similar data set is collected in the future. For example, this would allow for insights into the impact of the pandemic on food security and food sovereignty in the region.

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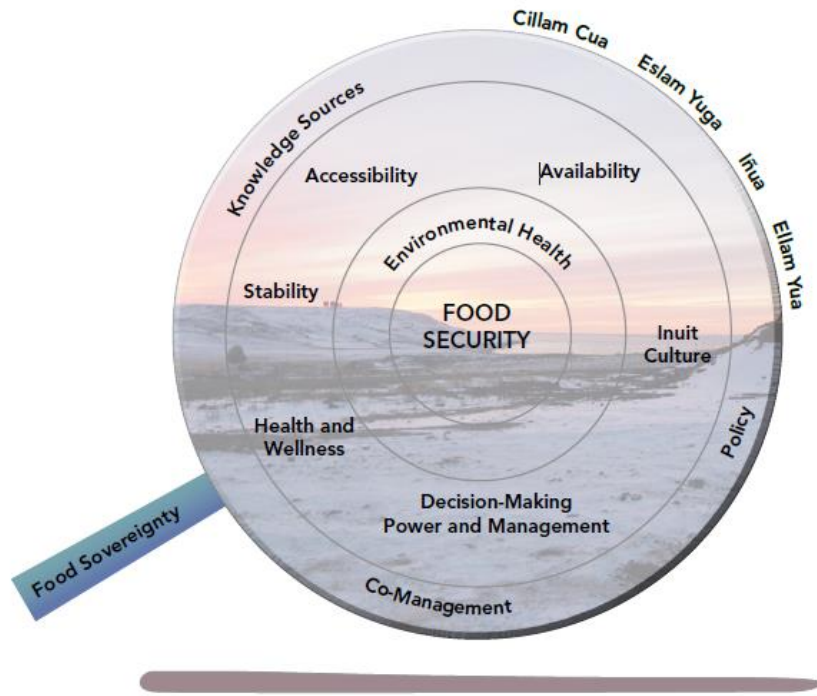
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Appendix A Food Security Framework Drum



Appendix B
Chugach Regional Resources Commission Food Assessment Questionnaire

**2016/2017 Chugach Regional Resources Commission Food Assessment
Questionnaire Form**



Thank you for taking the time to complete the CRRC questionnaire. The goal of this assessment is to collect information from individuals to help develop and/or expand on opportunities in your community. Your completed assessment will be full anonymous, if you so choose.

Background Information

We ask for your birthday so that we can understand the age of respondents to better understand generational differences in answers.

Date	Year: _____

Village: _____

How long have you lived in your Village? _____

Sex:

Male Female

57



InstaPot

Optional Prize Drawing: If you wish to be entered for a drawing, please provide your contact information below.

Name: _____

Phone Number: _____

Email: _____



FitBit

Food represents culture. Food is an intimate personal choice that is influenced by historical patterns, environmental considerations and, most importantly, cultural norms

Section 1 - Community Food Resources

A. How important are the following sources of food for people in your community? That is, how much does your community rely on them as a main source of food? Please use a check mark to indicate whether it is "very important," "somewhat important," "not very important," or "not at all important." If a source does not exist in your community, please check that column.

Source	Very Important	Somewhat Important	Not Very Important	Not at All Important	Does Not Exist in My Community
1. Grocery Store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Convenience Store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Family Garden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Community Garden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. School Garden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Tribal Garden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Hunting/Gathering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Trade/Barter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Sharing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Food Stamps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Others: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B. Who do you consider to be the leaders in solving food problems in your community? Check all that apply.

- Chugach Regional Resources Commission
- Chugachmiut
- Tribal government
- Community or nonprofit group(s)
- Tribal or Regional Corporation
- Religious groups
- Federal or state health agency staff
- Federal or state cooperative extension staff
- Schools
- None
- Others/Comments:

C. Are there certain foods that you need or would like to eat that are difficult to get, or are not available, in your community?

- No Yes

If yes, what are those foods – and why are they difficult to get or not available – and what can be done to get them?

D. Which of the following equipment or methods for food storage and preparation do you use in your home (check all that apply)?

<input type="checkbox"/> gas/electric stove	<input type="checkbox"/> gas/electric oven
<input type="checkbox"/> wood stove	<input type="checkbox"/> open fire
<input type="checkbox"/> microwave	<input type="checkbox"/> freezer
<input type="checkbox"/> refrigerator	<input type="checkbox"/> food canning
<input type="checkbox"/> food drying/dehydrator	<input type="checkbox"/> ice house
<input type="checkbox"/> root cellar	<input type="checkbox"/> Not applicable

Other: _____

E. Which of the following do you think are useful, or would be useful, in improving your food resources? Please use a check mark to indicate whether it is "very useful," "somewhat useful," "not very useful," or "not at all useful."

Resources	Very Useful	Somewhat Useful	Not Very Useful	Not At All Useful
Tips on getting the most for my money at the grocery store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information on nutrition and healthful eating and cooking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information about government programs for which I might qualify	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help with budgeting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information on how to grow a garden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information on how to grow traditional foods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recipes and information for preparing traditional foods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information in my native language	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information on diet comparisons between store-bought and traditional foods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 2- Diet and Health

A. How would you rate the nutritional quality of your diet?

- Excellent
- Very good
- Good

- Fair
- Poor

B. Would you say your health, in general, is:

- Excellent
- Very good
- Good
- Fair
- Poor

C. Is information about diet and nutrition available in your community? If yes, please list your two primary sources of information (nurse, family member, etc.).

- 1. _____
- 2. _____

D. Are health problems in your community caused or exacerbated by lack of healthy, nutritious, traditional foods?

- Yes No I don't know

E. Do people in your community receive adequate food on a daily basis?

- Yes No I don't know

Section 3 – Culture

A. Please share a traditional food gathering memory. What did you learn?

B. Do you want to preserve your cultural food traditions?

- Yes No

C. Who has the knowledge of these traditions?

- An elder
- Another relative
- Nurses/Doctors
- AK Department of Fish and Game
- Other

D. How many people do you know in your community who are skilled in traditional hunting, and/or the collection and uses of traditional foods? _____

E. Do you think that young people in your community are interested in food traditions?
If not, why do you think this is so?

1. If yes, please explain why you think young people are interested.

2. Do you have suggestions about how to get young people interested? If yes, what are they?

F. What traditional food-related practices, if any, continue to be used in your community today? Please describe:

1. How many members of your community participate in these activities? _____

2. How are these skills being passed on to others?

G. Where did you learn how to get and prepare food?

- From an Elder
- From another relative
- In school
- From a dietitian/nutritionist
- Parents
- Other

H. How do you think this information can be passed on to future generations (check all that apply)?

- Classes
- Workshops
- Gatherings
- Recipe books
- In the Home
- Family Members
- Other

1. Is there someone in the community teaching courses on culture or food?

- Yes No

a. If yes, please explain the course.

I. Does your community continue to celebrate traditional ceremonies, Native culture, Native heritage?

- No Yes

1. If yes, what ceremonies are practiced and what food are typically required for those ceremonies still available in your community?

2. If not, please explain why.

J. If you could tell your tribal leaders anything about food and hunger issues in your community, what would you tell them?

K. If you could tell the federal government anything about food and hunger issues in your community, what would you tell them?

Section 4 - Organizations and Governance

A. Does your community have active groups, including tribal government, federal; government or local organizations (i.e. senior center or food bank), working to solve food-related problems for community members?

No Yes

1. If yes, who are these groups and what are they doing?

2. If no, do you need them?

No Yes

3. Do these groups effectively coordinate efforts with each other in your community?

No Yes

a. If no, how could they be more effective? Please explain.

B. What support is provided by tribal/government policies and/or services traditional for food education and harvesting in your community (check all that apply)?

- None
- Financial support (grants, loans, etc.)
- Transportation
- Technical assistance (harvest locations, food preparation, etc.)
- Donations of land, or the use of land
- Donations of water rights, or the use of water
- Purchasing or permit preferences
- Policies encouraging schools and/or other institutions buy local food if possible

C. Are there school programs that encourage the usage of traditional foods?

- No Yes

1. If yes, please list them and give a brief description.

Section 5 - Food Resources

A. Use this table below to record how often you or your household consumed each of the following traditional foods within the past 12 months. In the last column to the right, please rank your household's top 5 most important foods with #1 being the most important, #2 the second most important and so on, up to 5 by circling the number.

Traditional Food	Never	10 times per Year or less	10-25 times per Year	26-50 times per Year	Don't Know	RANK
Marine Foods						
Crab	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Halibut	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Clams/Cockles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Herring Eggs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Seaweed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Seal (Meat or Oil)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5

Salmon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Shrimp	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Rockfish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Black Cod	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Beach Asparagus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Octopus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Bidarki	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Scallops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Sea Lion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Sea Otter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Sea Cucumbers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Terrestrial Mammals						
Deer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Mountain Goat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Porcupine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Moose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Black or Brown Bear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Porcupine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5

Traditional Food	Never	10 times per Year or less	10-25 times per Year	26-50 times per Year	Don't Know	RANK
Beaver (tail)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Snowshoe Hare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Terrestrial Plants						
Berries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Mushrooms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Roots and Other Plants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Migratory Bird Food						
Ducks/Geese/Other Birds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Grouse/Ptarmigan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Bird Eggs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5
Other						
Vegetables from a home garden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5

B. What typically happens to your hunted/gathered foods? Check all that apply.

- Given to community members
- Bartered within the community
- Kept within my family
- Other (describe below):

C. Do you have the ability and/or facilities to store food in your community?

- No Yes

D. What are the three primary traditional foods harvested in your community? If they are not, just write "N/A"

1. _____
2. _____
3. _____

E. Does your community focus on traditional foods?

- No Yes

1. If yes, please list what foods those are:

F. What are some of the foods that we need to gain better access to?

1. How can we make that happen?

G. List one way we can protect traditional foods _____

I. Do you believe your traditional food is nutritious?

No Yes

1. If no, why?

H. Do you believe your traditional foods are safe?

No Yes

1. If no, why?

I. During which months of the year would you say you eat the most traditional foods (check all that apply)?

<input type="checkbox"/> January	<input type="checkbox"/> September
<input type="checkbox"/> February	<input type="checkbox"/> October
<input type="checkbox"/> March	<input type="checkbox"/> November
<input type="checkbox"/> April	<input type="checkbox"/> December
<input type="checkbox"/> May	<input type="checkbox"/> All months the same
<input type="checkbox"/> June	<input type="checkbox"/> Never/rarely eat traditional foods
<input type="checkbox"/> July	<input type="checkbox"/> Unknown
<input type="checkbox"/> August	

J. During the months you indicated you eat the most traditional foods, how many meals of traditional food do you eat on a weekly basis?

Average # of traditional food meals weekly: _____ (two highest months)

K. About how far from home do you usually travel to hunt or gather food?

<input type="checkbox"/> 0-5 miles	<input type="checkbox"/> 21-25 miles
<input type="checkbox"/> 6-10 miles	<input type="checkbox"/> 26-50 miles
<input type="checkbox"/> 11-15 miles	<input type="checkbox"/> 51-75 miles

<input type="checkbox"/> 16-20 miles	<input type="checkbox"/> 76-100 miles
	<input type="checkbox"/> more than 100 miles

L. Of all the traditional food that you eat in a year, approximately how much (in %) do you get from:

	Percent (%)
Food hunted/gathered by yourself or family members	_____
Friends	_____
Ceremonies	_____
Gatherings	_____
Other (list)	_____
_____	_____
_____	_____
	100%

M. On average, throughout the year, how often do you attend ceremonies or other community events and how often do you eat traditional foods at these ceremonies?

How often do you attend ceremonies/events?	How often do you eat traditional foods at ceremonies/events?
<input type="checkbox"/> never	<input type="checkbox"/> rarely/never
<input type="checkbox"/> less than 1 time per month	<input type="checkbox"/> less than ½ of the ceremonies or events
<input type="checkbox"/> 1-3 times per month	<input type="checkbox"/> at about ½ of the ceremonies or events
<input type="checkbox"/> 4-6 times per month	<input type="checkbox"/> at nearly all of the ceremonies or events
<input type="checkbox"/> more than 6 times per month	

N. Is there anything limiting you from accessing traditional foods?

<input type="checkbox"/> Fuel costs	<input type="checkbox"/> No time to gather/hunt/fish/garden
<input type="checkbox"/> Time opportunity	<input type="checkbox"/> Knowledge/skill of preparing traditional foods
<input type="checkbox"/> Knowledge/skill about traditional foods harvesting	<input type="checkbox"/> No desire to eat traditional foods

<input type="checkbox"/> Physical ability to gather/hunt/fish/garden	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Transportation	

O. Is your family able to eat as much traditional foods as they would like?

No Yes I don't know

P. Has your family shared traditional foods with members of the community outside of your household in the last 12 months?

No Yes I don't know

Q. Do you or members of your household usually fish for salmon?

No Yes I don't know

R. What kind of salmon is most available in your community? Please rate using numbers 1-5 with 5 being the most available and one being the least.

Species	Rating (1-5)
Chinook (King) Salmon	_____
Chum (Dog) Salmon	_____
Sockeye (Red) Salmon	_____
Pink Salmon (Humpies)	_____
Coho Salmon (Silvers)	_____

S. What kind of salmon do you prefer? Please rate using numbers 1-5 with 5 being the most preferable and one being the least.

Species	Rating (1-5)
Chinook (King) Salmon	_____

Chum (Dog) Salmon	_____
Sockeye (Red) Salmon	_____
Pink Salmon (Humpies)	_____
Coho Salmon (Silvers)	_____

T. How would you describe the impact on your household of not getting enough salmon to eat?

- Low Impact
- Moderate
- Moderately Severe
- Severe

U. Do you or members of your family usually hunt for ducks?

- No Yes I don't know

1. If yes, please check which ones below:

Species	Hunt (yes/no)	Species	Hunt (yes/no)	Species	Hunt (yes/no)
Wigeon	<input type="checkbox"/> No <input type="checkbox"/> Yes	Swans	<input type="checkbox"/> No <input type="checkbox"/> Yes	Other Ducks	<input type="checkbox"/> No <input type="checkbox"/> Yes
Teal	<input type="checkbox"/> No <input type="checkbox"/> Yes	Bufflehead	<input type="checkbox"/> No <input type="checkbox"/> Yes	Black Brant	<input type="checkbox"/> No <input type="checkbox"/> Yes
Mallard	<input type="checkbox"/> No <input type="checkbox"/> Yes	Goldeneye	<input type="checkbox"/> No <input type="checkbox"/> Yes	Snow Goose	<input type="checkbox"/> No <input type="checkbox"/> Yes
Northern Pintail	<input type="checkbox"/> No <input type="checkbox"/> Yes	Scaup	<input type="checkbox"/> No <input type="checkbox"/> Yes	Tule Goose	<input type="checkbox"/> No <input type="checkbox"/> Yes
Shoveler	<input type="checkbox"/> No <input type="checkbox"/> Yes	Loons	<input type="checkbox"/> No <input type="checkbox"/> Yes	Canada Goose	<input type="checkbox"/> No <input type="checkbox"/> Yes
Scoter	<input type="checkbox"/> No <input type="checkbox"/> Yes	Harlequin Duck	<input type="checkbox"/> No <input type="checkbox"/> Yes	White-fronted Goose	<input type="checkbox"/> No <input type="checkbox"/> Yes
Long-tailed Duck	<input type="checkbox"/> No <input type="checkbox"/> Yes	Merganser	<input type="checkbox"/> No <input type="checkbox"/> Yes	Terns	<input type="checkbox"/> No <input type="checkbox"/> Yes
Swans	<input type="checkbox"/> No <input type="checkbox"/> Yes	Shorebirds	<input type="checkbox"/> No <input type="checkbox"/> Yes	Swans	<input type="checkbox"/> No <input type="checkbox"/> Yes

V. Do you or members of your family usually hunt for other birds?

- No Yes I don't know

1. If yes, please check which ones below:

Species	Hunt (yes/no)
Crane	<input type="checkbox"/> No <input type="checkbox"/> Yes
Grouse	<input type="checkbox"/> No <input type="checkbox"/> Yes
Cormorants	<input type="checkbox"/> No <input type="checkbox"/> Yes
Murre	<input type="checkbox"/> No <input type="checkbox"/> Yes
Puffin	<input type="checkbox"/> No <input type="checkbox"/> Yes
Gulls (any species)	<input type="checkbox"/> No <input type="checkbox"/> Yes

Black Legged Kittiwake	<input type="checkbox"/> No <input type="checkbox"/> Yes
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W. Do you or members of your family usually try to harvest bird eggs?

No Yes I don't know

1. If yes, please check which ones below:

Species	Hunt (yes/no)
Duck eggs (any species)	<input type="checkbox"/> No <input type="checkbox"/> Yes
Goose eggs (any species)	<input type="checkbox"/> No <input type="checkbox"/> Yes
Gull eggs (any species)	<input type="checkbox"/> No <input type="checkbox"/> Yes
Tern eggs (any species)	<input type="checkbox"/> No <input type="checkbox"/> Yes
Black oystercatcher eggs	<input type="checkbox"/> No <input type="checkbox"/> Yes
Other (list)	<input type="checkbox"/> No <input type="checkbox"/> Yes
_____	<input type="checkbox"/> No <input type="checkbox"/> Yes
_____	<input type="checkbox"/> No <input type="checkbox"/> Yes
_____	<input type="checkbox"/> No <input type="checkbox"/> Yes

Section 6 - Natural Resources and Environment

A. Does your tribe/community have a land use plan?

No Yes I don't know

1. If yes, is there a section that plans for sustaining traditional food?

No Yes I don't know

a. If yes, please describe:

2. Is there a section that plans for the community's food supply?

No Yes I don't know

a. If yes, please describe:

B. What environmental changes have affected your local food system? How?

1. Are you aware of the term **ocean acidification** and what potential impacts it has to your food?

No Yes

a. If yes, please describe:

2. Are you aware of rising ocean temperatures?

No Yes

a. If yes, please describe:

C. What food resource do you think is the most vulnerable to climate change?
