Bering Strait Regional Food Security Workshop: How to Assess Food Security from an Inuit Perspective: Building a Conceptual Framework on How to Assess Food Security in the Alaskan Arctic. 2014

Inuit Circumpolar Council-Alaska





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On April 14th and 15th of 2014, Traditional Knowledge (TK) Delegates came together to evaluate and validate preliminary findings of the Inuit Circumpolar Council – Alaska's (ICC-AK) food security project, How to Assess Food Security from an Inuit Perspective: Building a Conceptual Framework on How to Assess Food Security in the Alaskan Arctic. The Bering Strait Regional Food Security Workshop is an important part of the overall project methodology, allowing for greater engagement of villages in the region and a preliminary validation process. TK delegates, identified by their respective Tribal Councils and peers, came together for two days to validate and evaluate the information that was previously documented through expert interviews and to offer further insight on drivers of food security and insecurity.

This report reviews the information discussed during the Bering Strait Regional Food Security Workshop, and information gleaned from our other project activities to date. This report will be one component of several that will contribute to the final product. Carolina Behe, the Traditional Knowledge/Science Advisor for ICC-AK, has prepared this report. This report should be cited as: Inuit Circumpolar Council -Alaska. 2014. Bering Strait Regional Food Security Workshop: How to Assess Food Security from an Inuit Perspective: Building a Conceptual Framework on How to Assess Food Security in the Alaskan Arctic. Anchorage, AK.



Bering Strait Regional Food Security Workshop Participants. April 15, 2014. Photo by Gay Sheffield

Inuit Circumpolar Council - Alaska. 2014. Bering Strait Regional Food Security Workshop: How to Assess Food Security from an Inuit Perspective: Building a Conceptual Framework on How to Assess Food Security in the Alaskan Arctic. Anchorage, AK.



Thank you!

The workshop was successful in large part due to the contributions of our membership organizations and people of the Bering Strait Region. Julie Raymond-Yakoubian, Frieda Moon-Kimoktoak, and Meghan Topkok took diligent notes throughout the workshop and facilitated break-out group discussions. Additionally, Oxie (Carol Oliver - one of the delegates) was very generous in sharing her notes. Thank you to Julie and Rose Fosdick of Kawerk Inc. for their invaluable contributions in logistical planning of the workshop. Kawerak Inc personnel continued to provide assistance throughout the workshop; such as providing multi-media equipment to assists in hearing each other.

The Norton Sound Economic Development Corporation provided for food and beverages throughout the workshop. This allowed for the participants to stay together throughout the workshop. Dawn Miller, with help from her family, planned and organized a wonderful potluck. Thank you to all that brought food for us to enjoy. Hanson Safeway, also contributed food for the workshop. The workshop was further made possible through financial contributions provided by Bering Air, ConocoPhillips Alaska and World Wildlife Fund for Nature.

And of course, thank you to all of the TK delegates. This project belongs to you and would not be possible without your expertise. Many of the meeting participants will further engage in the project as contributing authors of the assessment tool and report. This commitment to the project allows for a validation process of the information that has been gathered and will be contributing to making the final product creditable.

Thank you to the following people for reviewing and commenting on the draft version of this report: Julie Raymond-Yakoubian, Vera Metcalf, Andrew Milligrock, Sheldon Nagaruk, Jacob Ivanoff, Tommy Obruk, Jamie Ablowaluk, Iyaaka Apassingok, and Minnie Naylor.



Photo: Kelly Eningowuk

Inuit Circumpolar Council – Alaska. 2014. Bering Strait Regional Food Security Workshop: *How to Assess Food Security from an Inuit Perspective: Building a Conceptual Framework on How to Assess Food Security in the Alaskan Arctic*. Anchorage, AK.





Villages visited as part of the ICC-AK Food Security Project from 2013-2014.

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Since July of 2012 ICC-AK has visited fifteen Alaska Inuit villages to collect information and perspectives from TK holders on the topic of food security, through semi-directive interviews and community meetings. Within the Bering Strait region we have visited Wales, Stebbins, and Gambell. The information gathered is being aggregated and analyzed to obtain a greater understanding of an Inuit food security definition and to identify overarching drivers of food security and insecurity. Preliminary findings from these expert interviews were presented at the workshop. As stated above, the Bering Strait Regional Food Security Workshop was a validation process of the information that has been gathered through TK holder expert interviews. Twenty-three TK delegates (referred to as delegates within the report) attended the workshop. Village Tribal Councils and organizations active within the region chose the delegates. Several people joined the workshop as observers A full list of participants and observers is in Appendix 2. Below is a list of the workshop delegates and the project advisory committee members:

Elmer K. Seetot Jr. – Brevig Mission Andrew Milligrock - Diomede Sheldon Nagaruk - Elim Iyaaka (Anders) Apassingok - Gambell Carol Oliver - Golovin Sylvester Ayek – King Island Randall Dewey - Koyuk Jamie Ablowaluk – Mary's Igloo Brenna Ahmasuk - Nome Paul Rookok Sr. - Savoonga Tommy Obruk - Shishmaroff Axel Jackson - Shaktoolik John Lockwood – St. Michael Jacob Ivanoff - Unalakleet Raymond Seetook – Wales Debra Seetook - Wales Karl Ashenfelter – White Mountain Vera Metcalf - ICC-AK Vice President Brandon Ahmasuk - Kawerak Inc. Rose Fosdick - Kawerak Inc. Bivers Gologergen - Eskimo Walrus Commission Benjamin Payenna - Eskimo Walrus Commission Rhonda Sparks - Nanuuq Commission Julie Raymond-Yakoubian – Regional Food Security Advisory Committee Member Angela Nashalook – Regional Food Security Youth Advisory Committee Member



Photo: Carolina Behe



Similar regional workshops have taken place in Barrow, Kotzebue, and Bethel. The project is scheduled to be completed in April 2015. Though we have a lot more work to do, what we know so far is that an accumulation of stressors is causing food insecurity; that there is a need to look at the Arctic through a food security lens to gain a holistic understanding of the Arctic systems to create adaptive management structures. This understanding has brought to light the need to identify indicators (drivers), which may be used to assess both social and physical systems.

Workshop Objectives:

During the two-day workshop participants were asked to review the information that had been previously gathered; to contribute additional information where needed; to assist in the analysis of information through discussion and to address three objectives of the workshop:

Objectives:

1) Provide a consensus on concepts/terms to be included in a food security definition.

2) Evaluate food (in)/security drivers that have been identified and provide additional drivers of food (in)/security that have yet to be included.

3) Determine what needs to be assessed according to TK and discuss potential methodologies for doing such an assessment.



Photo: Brandon Ahmasuk



Defining Inuit Food Security:

This project shows a preliminary understanding that food security is synonymous with environmental health. An environment is considered healthy when all parts fit together. One elder explained that the Arctic environment is like a puzzle, with all pieces having a place and needed to make up the entire puzzle; this includes native languages, retention of TK, animal health, etc.

"We have to hunt; we have to subsist. It's tied to our culture, spirituality, and way of life that we've lived for thousands of years"- delegate of the Bering Strait Regional Food Security Workshop

The workshop participants agreed that the following **concepts** would need to be included in an Inuit definition of food security. Many of these concepts were also identified through expert interviews within the four Alaska Inuit regions.

- 1. Self-identity and cultural identity
- 2. Respect
- 3. Inter-connections within the food web
- 4. Inuit are part of the food web
- 5. 'Our lifestyle, using our traditional knowledge'
- 6. Sharing
- 7. Processing and storing food
- 8. Providing for family
- 9. "We are born of the land, sustained by the land and will go back to the land when we die"

- 10. Transfer of knowledge
- 11. Educating
- 12. Care taking, "...protecting the land, sea, air, animals"
- 13. Responsibility
- 14. Younger generations will have healthy food to harvest
- 15. Eating what has been gathered from last season
- 16. Being able to provide for your family
- 17. Teamwork
- 18. Trading

The following **concepts** were identified as requirements of food security:

- 1. Food sovereignty
- 2. Inuit have authority, are heard, and respected as knowledge holders and teachers
- 3. "Working with us under our rules"
- 4. Equality of knowledge
- 5. Community leadership (finding solutions using both traditional and other ways)
- 6. Using the knowledge available today and adapt
- 7. Protection from pollutants

Drivers of food (in)/security:

Workshop participants were asked to discuss the drivers that have been identified through expert

interviews; to evaluate the drivers and to add drivers that may have been missed. Below is a list of drivers identified through expert interviews and discussed at the workshop.

1. Availability

2. Value of food

Photo: Minnie Naylor



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- 3. Health of wildlife
- 4. Mental health
- 5. Accessibility
- 6. Cash / subsistence economy
- 7. Language
- 8. Government subsidies
- 9. Education
- 10. Regulations
- 11. Change in sea ice
- 12. Sharing systems
- 13. Adaptations to changes
- 14. Increase competition
- 15. Decision making power
- 16. Diversity
- 17. Contaminants / pollution

- 18. Burden of conservation
- 19. Impact of a mixed diet
- 20. Change in food storage
- 21. Stability of ground / erosion
- 22. New species
- 23. Change in temperatures
- 24. Sanitation
- 25. Land fill systems
- 26. Increase in shipping activity
- 27. Increase in competition
- 28. Change in ocean currents
- 29. Change in weather
- 30. Respect for wildlife
- 31. Rate of change
- 32. Flooding



Photo: Kelly Eningowuk

Workshop participants agreed with the above drivers (identified through expert interviews), and offered detailed information and examples for many. They also provided the below additional **drivers**.

- 1. Noise
- 2. Storm surges
- 3. How research is conducted
- 4. Identification of rich habitat and stability
- 5. State and federal jurisdiction
- 6. Respect for Traditional Knowledge
- 7. Traditional management systems

- 8. Shipping noise and light pollution; lack of oil response, emergency preparedness
- 9. Self-regulating (power dynamics)
- 10. "Taxation without representation"
- 11. Representation that holds low understanding of the Inuit culture and/or the Bering Strait ecosystem



Workshop participants were very solution oriented and mentioned numerous steps that could be taken to address some of the drivers of food insecurity –

- 1. Strengthen co-management practices
- 2. Documentation of Traditional Management practices; use St. Lawrence Walrus Management Ordinances as an example
- 3. Re-establish the Elim, Shaktoolik, Koyuk (ESK) Management Coalition. ESK was a beluga management system; elders from the three villages came together to discuss the past season and all factors that influence the health and well-being of belugas and to guide hunting practices.
- 4. Develop partnership with universities and/or ANTHC to begin studies on the pathway of pollutants through animals to humans.
- 5. Documentation of traditional recipes and preparation processes. Participants noted that this documentation could not replace being taught by TK holders and/or actively 'doing' to learn, but would be used as a tool.
- 6. Documentation of medicinal plants; establish community programs for passing this knowledge and to encourage use. Documentation of changes in medicinal plants
- 7. Research activities to understand changes occurring should be conducted throughout the food chain TK stresses the importance of looking at the connections within the food chain.
- 8. Send to State and Federal government officials a regional resolution describing the concerns and the need for government to support stronger co-management and food sovereignty
- 9. Participants expressed the need to evaluate their own strengths in addressing issues such as food security; to move beyond conversations; to be organized; to depend on strong leadership; to take action in implementing solutions to the problems
- 10. Participants expressed the need to address concerns by uncovering the reason for the problem. For example, if children are not going out hunting, ask what is preventing them from going out?
- 11. Address questions and solutions associated with pollution what are the possible solutions; whether it is addressing global concerns like climate change or more local pollution sources

The below section describes points raised and a general overview of discussions held throughout the workshop. Though this section is broken into main headings, all headings are interlinked with each other.

For example, many of the themes highlighted below are directly connected to a lack of decision-making power; consider that one cannot speak about access and availability without also considering physical and mental health, education, changes in weather and climate, etc.



Photo: Minnie Naylor



On Lack of Decision Making Power - The participants often voiced frustration in a perceived disregard for their knowledge and culture from decision makers; particularly decisions made that directly impacts the Bering Strait ecosystem. Participants feel that Western science and management is ignorant of traditional knowledge and prioritizes western values over indigenous values These concerns were expressed through expert interviews in the villages visited within the region.

Within many of the concerns and drivers of food security discussed, participants expressed frustration over their lack of authority to do something about the drivers. In some cases, the need to make decisions are at a local level, such as being able to use traditional management practices for hunting walrus or deciding what children are to learn daily (hunting and education are drivers of food security). In other cases, the food security driver is on a global scale, such as the distribution of pollutants. Pollutants generated through global practices have a direct impact on the Bering Strait ecosystem. Inuit of the Bering Strait are left to suffer the consequences of decisions made by distant agencies and individual, bear the burden of conservation, and a disregard of their own value systems and knowledge.



Photo by Meghan Topkok



Photo: Carolina Behe

One participant pointed out that Inuit do have a seat at the table through co-management bodies, stressing that the question is how strong that voice is. In fact, many participants and experts from villages expressed the need to strengthen co-management practices to allow for the use of traditional management practices, the use of TK in decision-making, and for a stronger voice in care taking of the environment.

Though participants expressed a deep frustration over a lack of decision-making power. They also expressed that Inuit have the knowledge necessary to understand the changes that are occurring and a responsibility to continue to take care of the environment, regardless of the lack of decision-making power. For example, it was expressed that it is their responsibility to respect the land and animals; to teach this respect to younger generations and to be part of the ecosystem.



On the Value of food - The value of food is central to how food security is defined – it is all that 'food' provides. Throughout this project contributing authors and the workshop participants have explained that 'food' provides much more than nutrients and calories. The value of food within a 'Western culture' appears to be more rooted in caloric and nutrient intake. This difference in 'value' of food does not make one better than the other, but it is a large cultural difference in how to consider food security and food sovereignty.

Participants shared that the value of traditional foods is interlinked with self and cultural-identity. They further explained that obtaining traditional foods is rooted in family-oriented activities, gets people outside and connected to their environment, builds patience, teaches one how to be, builds bridges between generations through the passing of knowledge; encourages respect for life and the environment; teaches traditional management practices, teaches the importance of safeguarding the ecosystem; teaches the interconnections between all parts of an ecosystem; teaches how to monitor and what questions to ask of the environment. All of this is rooted in the 'value' of traditional foods.



Photo: Brandon Ahmasuk

Food is deeply tied to self and cultural identity. Participants noted numerous times that without an animal, the sea, the land, they would be "nothing". For example, one participant questioned who they would be if they are not able to fish, while another asked what they would be if there were no seals. Food within the Inuit culture holds a deep physical and spiritual meaning. Often, participants and project contributing authors explain the feelings of missing something when they have not had a traditional food for some time. The 'missing' refers to this physical and spiritual connection.



Photo: Carolina Behe

Still a shift has been occurring in the value of food and identity. For example, the term Iñupiaq Umialik means 'someone who owns a boat'; today the word is taking on the meaning of a 'rich person'. This shift in the meaning of the word indicates to the participants a shift in the value of food and asks the question of how and why this shift is occurring. To some this described shift and change in word definition may seem to have an easy explanation, as Inuit communities today rely on a cash/subsistence economy. However, the questions and explanations are much more complex and require an Inuit understanding of how all is interconnected. To further illustrate this point one



may consider what impedes accessibility. Accessibility to the environment may be impeded by multiple factors that inadvertently degrade social integrity, cause a shift in defining terms and value of food. For example, as animals move further away from villages, hunters are required to utilize more fuel and require more time to hunt. If time and fuel are not available, accessibility is decreased. This coupled with additional drivers that decrease accessibility, such as regulations that may further impede accessibility to animals through restrictive harvest windows; rapid changes in the environment due to climate change, such as shifts in sand bars and erosion, an education system that is perceived to place higher value on a 'western education system'. All of these accumulative drivers decrease the transfer of knowledge and lead to a change in how terms are defined.

On Education – Education has been listed as a driver of both food security and insecurity within all four Alaska Inuit regions. The expert interviews within the Bering Strait Region frequently highlighted the connection between food security and education; from the transfer of knowledge to working within a 'western' education system.

There is a concern that education is only thought of as 'western' education; that schools offer courses to learn other languages, such as Spanish, but not Iñupiag or St. Lawrence Island Yupik; that the food served at school is low in nutritional value compared to traditional foods and that children loose a taste for their traditional foods; that some bicultural classes are only 20 minutes long and the idea that education can only be gained within the wall of a school building. The process of educating children is different within a school system as opposed to outside and within the Inuit culture. For example, within the Inuit culture, children begin their education by



Photo: Julie Raymon-Yakoubian

watching and doing, by being with many adults as they gather food from a young age. As one participant shared, children have five teachers when they go to gather food, in the classroom twenty children have to share one teacher.

The challenges associated with mixing two systems of education systems are a driver of food insecurity when less respect and value is given to the Inuit culture and education system. A participant provided an example when explaining that the U.S. 'Leave No Child Behind' campaign inadvertently "...left behind our children". As the U.S. campaign endeavored to improve student preparedness, some villages saw a decrease in the amount of days that youth were excused from school to hunt, pick berries, or prepare food. This further marginalizes traditional educational practices and Inuit values. The participant went on



to explain that this marginalization of Inuit values and education practices leads to further loss of self-identity and poor performance within the 'western' education system, resulting in the limited number of children graduating from high school and an even fewer number of students going onto college. The end result are youth unprepared for either environment.

Knowledge Transfer – The transfer of Traditional knowledge is a driver of food security. Participants discussed frequently the importance of teaching their children from a young age. For example, the spring was described as a reawakening of all, a time for young to learn, to go outside after being cooped up. Throughout many conversations the importance of allowing children to learn the tools they will need, to learn how to be within their environment, how to not fear it, and other themes were stressed.

Food security and overall survival is attributed to what has been learned from elders. The participants spoke of the importance of storing and preparation process as learned from



Photo: Minnie Naylor



Photo: Julie Raymon-Yakoubian

elders. The learning of how to prepare and store food cannot be confined to a book and adjusts depending on any given situation. For example, food is prepared and stored though aging, drying, brinning, storing in seal oil, etc. and occurs when temperatures are conducive to the process.

There is a high concern over the loss of transfer of knowledge. All involved in this project have identified the loss of knowledge as a driver of food insecurity. Participants discussed that this loss of knowledge began when people were forced to go away to

boarding schools. The loss of knowledge is connected to a loss of self-identity, impacts social integrity, the understanding of how to be within the environment. These described losses lead further to a loss of knowledge of how to hunt, what hunting means, of weather, ocean currents, and so on. For example, it is



thought that less people rely on and have lost a taste for fermented food because they have lost the knowledge of how to prepare it. What is being described are accumulative impacts derived from multiple drivers.

Participants provided examples of efforts to encourage knowledge transfer. For example there are many culture camps held in villages, such as Shaktoolik. These camps provide an opportunity for children who have limited accessibility to learn within their own homes. These camps strengthen social integrity, build of self-and cultural - identity, and respect for all. They also provide youth with the opportunity to gain



Photo: Brandon Ahmasuk



Photo: Kelly Eningowuk

confidence in learning through other means than textbooks or laptops. This addresses concerns that youth are loosing necessary skills, such as patience and listening when they only learn from books.

Social integrity is maintained through knowledge transfer and food gathering practices. For example, a whaling captain explained that teamwork is the first thing to learn. When whale hunting, the crew comes together, all the crews come together and then the entire village comes together to obtain the whale and to process the whale. Children are there to learn at every point. Children begin to learn this when they are about four feet tall. They begin going out on the boat, watching

the teamwork, preparing and putting away the whale with everyone; to witness the food being shared throughout the region. This type of sharing system maintains food security.

The sharing system and value of food is further taught through the tradition of a young person giving away their first catch. One participant described when their father first took them to get tomcod. After catching the tomcod, there was so much pride; they then had to give the tomcod away, as the first catch. This fundamental lesson and transfer of being one provided for to one of a provider establishes Inuit self-identity and supports social cohesion.



On change in weather, precipitation, erosion, temperature, sea ice coverage –

The multitude of rapid changes occurring within the environment are drivers of food insecurity, particularly when coupled with other drivers. Many workshop participant conversations concentrated on the change in salt water lines, freshwater flooding, changes in vegetation, increase in large storms resulting in more dangerous situations, change in location of berries and the amount of berries, dried up lakes due to melting perma-frost, loss of camps due to erosion, new dangers in storing food due to melting permafrost, irregular temperatures and shifts in seasons, etc. For example,



Photo: Brandon Ahmasuk

in some locations ice use to freeze up to ten feet thick, but today it is only five feet thick; where once freeze-up occurred by October, it is now occurring around November; limiting transportation, fishing, and hunting. Overall, winter is shorter.

As participants broke into groups to discuss their observations of changes over the last twenty years, there was a lot of concern about the impact that these changes are having on obtaining food and the wellness of the ecosystem. For example, when there is bad weather or bad ice conditions hunting/ gathering will be limited. As the thicker ice moves further out, marine mammals that use this ice for haul out move further out with the ice, requiring hunters to go further out to hunt; traveling further out requires more fuel and time.

In addition to a decrease in sea ice coverage there is an increase in wind. The wind can push ice together into pressure ridges that pile up and many result in limiting accessibility to traditional food sources. For example, a village in 2012 was unable to reach a large stock of tomcod. Another village in 2013 was unable to reach walrus, and in the same year the village of Elim was completely closed off by ice. In 2014 Savoonga was unable to reach walrus due to pressure ridges and change in direction of predominant winds.

While the ice moves up in some areas, other areas are left open resulting in choppier waters that accelerates spring break-up and increase in weather variability. Participants also discussed how the increased variability in weather leaves them with shorter hunting windows. In the past people once could depend on calm weather for ten to fifteen days at a time, but in recent times the weather often does not stay calm for more than eight to twelve hours. Hunters are finding that they need to spend more time preparing to account for changes in the environment, animal locations, and weather patterns such as increase in storm variability, and short time periods allowed for hunting. With early break-up occurring, hunters are finding that they only have approximately half the time to do spring hunt (because of



dangerous conditions and the seals and walrus they are hunting move further north earlier). Similarly, as the ice forms latter in the year, people have to wait to travel across the land or ice on snow machines for hunting, etc.

On Food Preparation and Storage - Participants discussed the processing and storage of traditional foods frequently throughout the workshop. There is a concern about the loss of knowledge regarding how to prepare and store foods. Within these conversations participants explained the connection between the loss of knowledge and the loss of taste for traditional foods. For example, some meat is aged to get the most flavors out of it. When the meat is simply put into the freezer, the meat becomes tough because it was not given time to rest and the flavor is lost.



Photo: Carolina Behe

The proper preparation and storage of food is determined by the best time to obtain food. This may be dependent on when the food will be most nutrientrich and flavorful, the safest time to obtain the food sources, and/or during a time that will allow for the long process of preparing and storing the food sources. For example, obtaining adult oogruk occurs in the spring to allow for the animal to hang outside and for the meat to be prepared in time for drying when the summer temperatures are high enough. With the abundant changes occurring, people are facing a need to adapt their methods for how to put away and store food.

For example, with an increases in rainy weather it is becoming harder to dry fish and/or blackmeat from oogruk. People are finding that the meat is becoming moldy before it is able to dry. Some people are finding alternative ways to dry fish, such as bringing it inside, using fans, or using dehydrators rather than fish racks.

Adjusting to changes in the environment becomes more complicated if regulations do not account for the full process involved in obtaining food. TK teaches that salmon fishing should occur during a specific times that are determined by multiple factors. One of those factors is weather that will allow for the proper



Photo: Brandon Ahmasuk



storing of the food; with an increase in precipitation the timing of fishing and processing needs to adjust. This is not always possible due to fishing regulations.

On Regulations – The ways in which traditional food sources are obtained and managed is a driver of food (in)/security, through both direct and accumulative impacts. Participants stressed that Inuit have had their own management systems for thousands of years. There is a need for outside cultures and government agencies to work with Inuit through recognition and respect of Inuit TK, traditional management systems, and the importance of self-governance.



Photo: Kelly Eningowuk

For thousands of years Inuit have monitored their environment as a means of survival and have built a systematic knowledge system that has resulted in contemporary Inuit possessing a unique and intimate knowledge of the "…land we live off of". This knowledge, which is encompassed within Inuit culture, aids Inuit in their role as caretakers of the Bering Strait. There is a high level of concern about government representatives, decision makers, and government agencies who do not understand food security. As one participant stated, "…our way of life - they can't make the best decisions for us or this environment if they don't listen".

Historically, some villages began to write down regulations many years ago. Savoonga passed made a resolution in 1930 to decrease walrus take based off of their TK. With this example and others, participants stressed that TK teaches to take care of what is made available and not to cause additional stress. Many Inuit concerns today revolve around current regulations and have resulted from miss-management of human activities and a desire to over control and alter the environment.

The impacts of creating laws and regulations without including TK are decreases in animal health, more simplistic understandings of system interconnections and accumulative impacts, decreases in social cohesion

through interruption of practices that bring villages together and passing of knowledge, etc. Participants voiced concern that current resource management regulations of today have become so embedded in everyday life that youth are relying on the regulations to tell them what to do as oppose to relying on their TK and consolation with their elders. For example, TK teaches that seasons are determined by weather, animal migrations, changing plants, and activities to gather food, but harvest windows for species like salmon *are* regulated by resource management agency calendars.

Inuit seasons are defined by activities to obtain, process and prepare food. As one participant explained, "When caribou come, we go hunting. When the fish come, we go fishing...". Participants further



explained that the timing of when to obtain food is more complex. As explained above, gathering fish should occur during a time that weather ideally allows for drying. Additionally, traditional management derived from TK teaches to obtain some animals during times of least stress. For example, after an animal has been feeding, not while they are feeding. Timing set by TK is systematic and far from arbitrary. Participants expressed frustration about regulations set by government agencies that contradict a management system (Inuit TK) that is based on an intimate knowledge of the environment and which has the objective of maintaining ecosystem health. In fact, in applying a food security lens to the environment allows for quick adaptive management with an inherent ecosystem approach to management.

"There are so many [regulations] up here and we all have our [own] regulations and to come in here [with disregard], they need to work with us under our laws and our culture. We have our own



Photo: Meghan Topkok



Photo: Kelly Eningowuk

regulations. When outside agencies don't work with us, they are breaking our rules/laws. Our traditions and way of life pre-dates them." As participants of the workshop made these statements, there was also discussion of the need for stronger co-management agreements within Alaska in order to maintain food security.

Participants provided many examples of traditional regulations. For example, when an animal is unhealthy the hunter must let the animal sink so that its body will feed back through the food web; when one fish species is low or an animal population is low it is important to not add more stress to the animal and to seek different food sources; the seas and waters must be protected and in good health to protect the animals and so that they will come back; protect important areas such as haul out areas, breeding grounds, and animal food sources; teach children from a young age how to be within their environment and how to respect it; don't harvest birds with young; and never take more than you need.



"Never take more then you need". There is a lot of meaning and direction behind these words. One hunter explained that he never allows his sons to take more than 20 birds because his freezer will only hold 20 birds. "More then you need" refers to how much can be processed, how much can be stored, and how much can be eaten. The directive stresses that no part of an animal or plant should be wasted.

Burden of Conservation – Many actions taking place outside of the Arctic impact the Bering Strait ecosystem. For example, increasing greenhouse gases, such as carbon dioxide (CO2), and choices made by those outside of the Arctic are leading to a decline in sea ice and many other



Photo: Carolina Behe

impacts. Walrus depend on sea ice for hauling out to rest, sleep, calve and travel. Additionally, walrus depend on benthic animals for food. A reported shift in coastal currents, increase in stratification within the water column, warmer surface temperatures, decreasing sea ice and other factors are all thought to be impacting the food chain that walrus rely on. As regulatory agencies recognize a threat and multiple stressors impacting walrus, there is discussion about decreasing Inuit harvest as opposed to addressing the direct threats. This is a burden of conservation and is a direct driver of food insecurity. This example and others lead participants and project contributing authors to believe that regulations favor economic growth and the values of other cultures over Inuit food security and over ecosystem health. The participants further discussed additional examples of the burden of conservation be placed on Inuit such



Photo: Carolina Behe

as the impact of pollutants on animals and plants within the region. There is high level of concern over the impact of pollutants on bird eggs and multiple reports of open sores on fish, etc.

Pollution – Pollutants and industrially processed foods are drivers of food insecurity. Participants discussed high concern and distrust of the impacts of store purchased foods. The impact of growth hormones in factory-farmed meat is a concern. Additionally, there is a large concern about the pollutants that appear to be increasing within the ecosystem. The concern is not just for people, but also for animals and plants.

Expert interviewees and workshop participants stressed that people in the Arctic are most affected by the



pollutants on the land, sea and air. Over the past few years there have been many discussions regarding abnormalities in animals and sick animals. At times the lack of information or limited information sharing has impacted a village decisions in a way that affects food security. For example, upon pulling up many fish with sores, fish with more parasites, and seals with hair loss and sores, some people within a village opted not to obtain fish and/or seal one season. By not depending on their own TK and the limited sharing of information resulted in less nutritious food for those families. This also led to loss opportunities for youth to learn how to obtain and process those food sources. Participants provided numerous examples of the evidence of pollutants and contaminants throughout the region, such as whales beaching themselves and dying birds.

On Shipping – Development in the regions, such as increased vessel traffic was also discussed as a driver of food insecurity. This driver is largely linked to other drivers and lack of decision-making power. Participants discussed decisions being made on the basis of scientific studies that have missed a lot of information and/or do not include TK holders or their knowledge. There are many uncertainties and concerns regarding increased activities, such as increases in vessel traffic, tourist activities and mineral extraction exploration. There is a concern that the ships are and will bring chemical pollution, noise and light pollution,



Photo: Carolina Behe

disruption to animal migration patterns, and disruption to animals dependent on the early formation of ice, the introduction of new species and a host of other potential impacts.

Participants spoke of the need to be involved in Environment Impact Studies, for example, and for their TK to be part of these studies. TK has a wealth of information and assessment capabilities to better understand the connections throughout the Bering Strait. For example, outside of one village is a large area of clam beds. TK holders of this village stress that this area has to be protected first if oil spills occur. This area is a crucial part of the food web.

Cash/subsistence economy – Workshop participants agreed with expert interviewees, that shifts in economic systems is a driver of food (in)/security. It is well known that many people rely on a mixed cash and traditional food economy. However, participants expressed that there is a need to explain that the two are intertwined. Cash is needed to purchase equipment for transportation, to pay high fuel costs, household bills such as electricity, and other expenses. The participants stressed the need to have boats, motors, snow machines, guns, bullets, and other materials to be able to obtain food. This is becoming increasingly important as animal migrations shift and people have to travel further distances to obtain food because of wage-employment or other village-based responsibilities.



Participants shared that accessibility to traditional food sources is often impeded by high fuel costs. Though traditional foods are preferred, at times it costs less to buy food from the store than to go hunting, fishing or gathering. Without a steady income it is very difficult to obtain traditional foods and through that process ensure transfer of knowledge between generations. Still participants stressed that barter and trade remains an active option to decrease the stress of not being able to obtain food. Participants also discussed the shift in how people are able to obtain cash to support the gathering and processing of traditional foods. For example, not long ago more people utilized carving and sewing skills to create art and goods that could be traded for cash. Today, there is a decrease in the transfer of knowledge to build skills. This is, in part, attributed to the education system and contemporary day regulations that may impede the sale of materials used.



Photo by Kelly Eningowuk

Workshop Report Summary - The Bering Strait Regional Food Security Workshop provided a necessary step in evaluating and validating information that has been gathered through expert interviews and aids the overall validation process. Tribal Councils and ICC-AK regional membership organizations nominated TK experts to participate in the workshop. This select group of people was chosen based on their wealth of knowledge and expertise. The workshop participants reinforced and confirmed the information gathered thus far, further stressing the need to demonstrate impacts of cumulative impacts and interconnections that exists between the Inuit culture and the Arctic environment.

The final assessment tool and report will be shared with all Tribal Councils, Regional Organizations, State and Federal government agencies, industry, and conservation groups. ICC-AK will share the tool and report with working groups of the Arctic Council. The tool and report will provide information on what needs to be considered when looking at the Arctic ecosystem in addition to educating people on what food security is and how to look at the environment holistically.



Appendix 1 - Change in Habitat, Animals, and Plants

Expert interviewees described the variety of life (biodiversity) as a driver of food security. For example, one participant stressed the importance of biodiversity and the connection between Inuit culture and the Bering Strait environment to overall ecosystem health; understanding these interconnections is important to understanding changes that are occurring.

A shift in animal migration patterns, decreases in animals, arrival of new species, sick animals, sores on fish, etc. are a few of the topics discussed through village visits and expert interviews. Many examples have been provided throughout this project. Food security is impacted by the cumulative impacts driving the changes occurring. To better understand many of these changes will require the use of both Traditional Knowledge and science. It is apparent from Traditional Knowledge that a shift in food web dynamics is occurring. For example, there is an increase in predators in new areas, shifts in benthic species, and other changes. This table below includes examples of these changes provided during this workshop.

Animal / Plant	State of
Tomcod	Decrease in tomcod due to - decrease in ice coverage; at some villages have been unable to reach tom cod when abundance was high due to ice pushed up against the shore; impacted by warming waters
Herring	Decrease in herring. Impact of outside large scale commercial fishing; decrease in ice coverage; spawning dates have changed; impacted by warming waters
Skip Jacks	Decrease in skip jacks; not seen in rivers; impacted by warming waters
Beluga	Decrease: large scale commercial over fishing impact; impacted by shift in food web dynamics
Crab	Decrease in crabs. Once could put a line down and pull up many, now fewer are pulled up
Seaweeds	Decrease in some types of species that people depend on for food and medicine
Moose	Moved further away from villages; many people have to travel further to find; quota on how many moose may be taken per season; increase in predators (bear and wolves) - shift in predator/prey dynamics
Bear	Increase and moving closer to villages: delegates noted that many people do not hunt bear in this region; people do not know how to prepare or store bear
Reindeer herds	Change in climate has an impact on vegetation; increase in predators (bear, wolves); more reindeer leaving with caribou herds



Walrus	As thick ice moves out the walrus move with the ice, increasing the difficulty of hunters to find the walrus; change in stomach content - smaller shells, less shells, some fish, some reported with only sand in their stomach; red breast fat;
	June, and July), the May herd is no longer seen
Mushrooms	Seen in more areas and higher in abundance
Seals	Decrease in some species; discolored blubber; sores; one participant noted that seals are being seen with new hair growth – an indication of recovery from an unknown sickness
Greens	Decrease in some greens; people have to travel further to find greens; people have to be patient and move through the land slowly to find the greens; requires more time and fuel
Berries	Decrease due to increase in precipitation and a decrease in snow coverage; salt water flooding; People have to travel further to get berries; requiring more fuel and time
Roots and other vegetation	Decrease: in part due to damage to the land from vehicles; in some areas the land damage is left over from military activity
Orcas	Seen with more frequency
Oogruk	Some villages are having to travel further to find Oogruk; Oogruk depend on thick ice for calving and benthic species for food

Indicators –

- 1. Animals are an indicator of whether or not the environment doing well
- 2. Elders are an indicator of ecosystem health. The knowledge that Elders share inform what needs to be monitored and how to assess the information that is gathered. When Elders pass, an uncertainty is left within a community, if their knowledge has not been shared.
- 3. Food web shrimp and crab are an indicators of projected seal health
- 4. Fish through the food web salmon eat tomcods and herring. A partial indicator of salmon health will be based on the well-being of tomcods and herring.
- 5. The liver is an indicator of fish health



Appendix 2: Invitation Process, Workshop Nominations, And Attendees

Experts were nominated by their village tribal council to represent their respective village, recognized as an expert amongst their peers. Regional ICC-AK membership organizations were asked to each nominate one expert to participate in the workshop.

Criteria for nomination are:

- 1. Engagement in hunting, gathering, fishing and processing of traditional food sources;
- 2. Appropriate experience to help further the goals of the project; and
- 3. High interest in the project and willingness to commit to its outcome.

Delegates:

Elmer K. Seetot Jr. – Brevig Mission Andrew Milligrock - Diomede Sheldon nagaruk - Elim Iyaaka (Anders) Apassingok - Gambell Carol Oliver - Golovin Sylvester Ayek – King Island Randall Dewey - Koyuk Jamie Ablowaluk – Mary's Igloo Brenna Ahmasuk - Nome Paul Rookok Sr. - Savoonga Tommy Obruk - Shishmaroff Axel Jackson - Shaktoolik John Lockwood – St. Michael Jacob Ivanoff - Unalalkleet

Observers: Dawn Miller Angela Tulloch Gay Sheffield Austin Ahmask Ann Rose MacArthur Simon Ellanna Strickling Lisa Ellana Stricklying Marjorie Tahbone Angela Tulloch Debra Seetok - Wales Raymond Seetok - Wales Karl Ashenfelter – White Mountain Vera Metcalf - ICC-AK Vice President Brandon Ahmasuk - Kawerak Inc. Rose Fosdick - Kawerak Inc. Bivers Gologergen - Eskimo Walrus Commission Benny Piscoya - Eskimo Walrus Commission Rhonda Sparks - Nannuq Commission Julie Raymond-Yakoubian – Regional Food Security Advisory Committee Member Angela Nashalook – Regional Food Security Youth Advisory Committee Member

The workshop was organized and conducted with assistance of a planning committee. The planning committee assisted in contacting villages, organizing meals and housing, and in facilitating breakout groups. Thank you!

Committee: Rose Fosdick Julie Raymond-Yakoubian Freeda Moon-Kimoktoak

Meghan Topkok Dawn Miller Vera Metcalf



Appendix 3: Project Summary

"An Inuit Perspective On Food Security In The Alaska Arctic: Building A Framework On How To Assess Change In The Arctic."

This project fits within ICC-AK's 2010 Strategic plan, where food security is listed as a top priority.

SUMMARY: Inuit hold a unique understanding of food security within the Arctic; viewing food security to encompass both cultural and environmental systems; systems which interlink and support each other. While many changes are occurring within Arctic ecosystems, primarily resulting from climate change and industrialization, food security is becoming a central topic of conversation. Research shows that food security definitions and assessment mechanisms do not necessarily match the Arctic ecosystem or cultures within. In response to the need to address food (in)/security of traditional food resources within a changing Arctic, the Inuit Circumpolar-Council Alaska (ICC-AK), has commenced building a framework on how to assess food security from an Inuit perspective.

STATEMENT OF NEED:

Arctic communities have developed a rich culture, shaped by the dynamic environment in which they live and centered on the harvesting of Arctic flora and fauna. Inuit traditional Arctic foods such as caribou, waterfowl, salmon, seal, salmonberries, and sura (diamond-leaf willow) provides food, fiber, shelter, medicines, energy, nutrients, and spirituality; all of which play a part in food security. ICC-AK recognizes food security to be inclusive of both cultural and environmental systems.

In an environment where food provides more than calories, issues surrounding food (in)/security become multi-faceted and may require the identification of food security vulnerabilities throughout the entire food web. Such an approach aims to combine various sources of knowledge and research, such as research addressing the impact of high fuel costs on hunting strategies, socio-ecological relationships, and cultural structures in addition to changes in species distribution, nutrient intake and quality of food.

While the world focuses its attention on the Arctic, industry, academic institutions, governments, etc. are conducting numerous assessments to better understand how far this unique environment can be pushed before reaching a tipping point. From an Inuit perspective, assessments take place through a food security lens, allowing one to see were the inter connections between systems lie. The finished framework will be a tool to enhance the ability of Inuit communities and scientists in working together to holistically understand changes occurring within the Arctic. As well as provide an understanding for elected leaders and policy makers the concept of food security in the Arctic, what the drivers are, and what will need to be monitored in order to create action plans.

Objectives and Outcomes

Through literature reviews, community meetings, semi-directive interviews and gathering of Traditional Knowledge this project will identify the baselines needed to assess the vulnerabilities of food security. The established baselines will identify what Inuit priorities are in assessing food (in)/security and where vulnerabilities lie. For example, baselines may include the need to have full understanding of ice coverage to understand food web dynamics; an increased utilization of Traditional Knowledge applied to under ice



currents to gain a better understanding of salmon distribution; or for an increase effort to be applied to

establishing food web models that move beyond one-dimensional energy transfers, incorporating abiotic vulnerabilities and/or the human dimension. The project will contribute to our understanding of the pressures to traditional food resources and communities that are resulting from climate changes and increased human presence and development in the Arctic.

Three objectives will be met within this project: 1) provide an understanding of Arctic food security, from an Inuit perspective; 2) provide a tool to assess food security across both cultural and environmental systems; 3) identify what will need to be monitored in order to create action plans. These objectives will be met through two phases. In the first phase Inuit perspectives and IK will be sought and developed through semi-directive interview, community meetings, and information gained from previous projects and regional workshops. In the second phase, the developed framework will be shared with the Arctic Council with encouragement to conduct the assessment throughout the entire Arctic.

The project timeline began July 2012 and will finish in March 2015. Through this timeline the above objectives will be accomplished through multiple phases of data gathering, analysis and information sharing.

The first phase will consist of data gathering in which the community perspective and will be sought and developed through four tiers of information (listed in order of magnitude). To ensure community participation throughout the project ICC-AK will visit approximately 16 communities within the Yukon-Kuskokwim, Bering Strait, Northwest Arctic and Northwest Arctic regions, along the Bering, Chuckchi and Beaufort Seas. Tier one is information obtained from Inuit community members through semi-directive interviews and community meetings; tier two is information obtained from phone conversations with all tribal councils represented by ICC-AK; tier three is information obtained through raw data collected from past and ongoing projects conducted by ICC-AK member organizations and organizations supported by regions; tier four is information obtained from past projects conducted by academic institutions, government agencies, industry and NGOs.

In the second phase, a regional workshop will be held in each region. Through the regional meeting representatives from communities will meet to discuss the preliminary outcome of the project and further inform on assessment techniques and needs. A meeting report will be drafted and shared with all community participants.



Appendix 4: Workshop Letter of Invitation

Invitation To Nominate Participant For Bering Strait Regional Food Security Workshop: Building A Conceptual Framework On How To Assess Food Security From An Inuit Perspective

The Inuit Circumpolar Council (ICC) – Alaska will hold a food security workshop in Nome, AK, April 14th and 15th, 2014. The workshop is part of the larger food security project, "Building a Conceptual Framework on How to Assess Food Security From An Inuit Perspective". We invite your Tribal Council or organization to nominate a participant to attend this important workshop.

The workshop participants will include one Traditional Knowledge expert nominated by their respective Tribal Council within each village of the Bering Straits region. Additionally, Kawerak inc. and the Bering Straits Native Corporation will be invited to nominate one Traditional Knowledge expert to attend.

Since July 2012 we have visited fifteen villages to collect Traditional Knowledge and perspectives through semi-directive interviews and community meetings. With the information gathered we are now prepared for the next phase of the project, to host regional workshops. The workshop will include presentations of preliminary findings and work to bring Traditional Knowledge holders together to evaluate the preliminary findings, discuss food security, and provide additional information that may be missing. All of the information gathered will feed directly into the development of the conceptual framework.

We ask that each of the Tribal Councils chose one Traditional Knowledge expert to attend the workshop on behalf of your village. Do to a short time frame, we ask that you submit the nominees to the ICC-AK office no later than April 1st, 2014. Nominees should be chosen with the understanding that they will represent the thoughts and ideas of their village. Please consider both male and females in the people that you chose. Please use the below criteria in choosing your nominees. The person nominated may be anyone from your village and does not need to be a member of the Tribal Council.

ICC-AK will provide travel, lodging and per diem for one person nominated by each Tribal Council. Additionally, ICC-AK will provide the nominated person with \$150/day for their time and expertise, in the event that their time is not already covered by another organization, such as the Tribal Council.

Criteria for nomination are:

- 1. Engagement in hunting, gathering, fishing and processing of traditional food sources;
- 2. Appropriate experience to help further the goals of the project; and
- 3. High interests in the project and willingness to commit to its outcome.

The workshops will work to accomplish the following goals:

- 1) Discuss preliminary findings of the project
- 2) Provide a consensus on terms/concepts to be included in an Inuit food security definition
- 3) Evaluation of the identified drivers of food security and insecurity and provide missing information
- 4) Determine methodologies found within IK use for the assessment and analysis of identified drivers.



Appendix 5: Information Provided to Workshop Participants Before Meeting

Background:

Community members across the Alaska Arctic have expressed an interest and a need to assess changes occurring through a food security lens and to be involved in continuing a stewardship role within the Arctic. The overall accumulative and rapid increase in cultural, biological and physical stressors are affecting Inuit traditional food systems and overall food security. However, research shows that food security definitions and assessment mechanisms do not necessarily match the Arctic ecosystem or cultures within. Inuit possess a unique understanding of food security within the Arctic; viewing food security to encompass both cultural and environmental systems; systems which interlink and support each other. In response to the need to address food (in)/security of traditional food resources within a changing Arctic, ICC-AK, has commenced building a framework on how to assess food security from an Inuit perspective. The proposed project is indigenous-led and based on Traditional Knowledge, bring forward a greater representation of Inuit. This project will produce a valuable synthesis of community concerns regarding food security in the Arctic, in addition to a tool through which to assess food security.

Over the two day workshop participants will be asked to validate the information that has been gathered, to contribute additional information where needed, to assist in the analysis of this information, and to address all three objectives of the workshop:

1) Provide a consensus on concepts/terms to be included in a food security definition

2) Validate the drivers that have been identified and provide additional drivers that have yet to be included of food security and insecurity

3) Determine methodologies found within Traditional Knowledge use for the assessment and analysis of the identified drivers.

Information gathered from this workshop will feed directly into the drafting of the conceptual framework on how to assess food security. The assessment tool will be shared with all Tribal Councils, Regional Organizations, Industry, NGOs, Government Agencies, and the Arctic Council.

Understanding the environment through an Inuit perspective, through a food security lens, will help inform what decisions need to be made and a better understanding of the changes occurring within the Arctic. When the Inuit communities share their Traditional Knowledge, it is never based on one aspect. For example when hunters speak about walruses, they speak about the health of the walrus, about stomachs smaller then what is in living memory, about the changes in benthic species found within their stomachs, about the change in benthic species along the shore line, about changes in sea ice, and how all of this may be affecting that walrus and their community.

Ultimately, the framework will be a tool to enhance the ability of Inuit communities to adapt to the changing environment, as well as provide an understanding for elected leaders and policy makers the drivers of food insecurity and food security.

Example of Food Security Definitions (these definitions do not necessarily fit an Inuit perspective):



1. The state of being in which "all community residents obtain a safe, culturally acceptable, nutritionally

adequate diet through a sustainable food system that maximizes community self-reliance and social justice" – Dr. Michael W. Hamm and Anne C. Bellows

2. Traditional food systems amongst Native communities are part of the web of life, with strong connections between food and the health of the environment.

3. Food security is a term used to describe whether a person or a group of people has access to food. A group is food secure when "all people at all times have access to sufficient, safe, nutritious and cultural appropriate food to maintain a healthy and active life.

4. When all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life. Commonly, the concept of food security is defined as including both physical and economic access to food that meets people's dietary needs as well as their food preferences

Preliminary Understanding of Food Security from this project:

In this environment we easily see that food security is synonymous with environmental health. An environment is considered healthy when all parts are fit together. One elder explained that the Arctic environment is like a puzzle, with all pieces having a place and needed to make up the entire puzzle; this includes native languages, retention of Traditional Knowledge, animal health, etc. Within this understanding there is an emphases on the continuously changing Arctic environment with pieces of a puzzle adjusting to each other.

What we know so far is that an accumulation of stresses is causing food insecurity, that food security is synonymous with environmental health from an Inuit perspective, where the term 'environment' includes culture as well as part of the ecosystem; that decisions need to be based on both Traditional Knowledge and science and that means that research needs to be based on both...with greater involvement and looking at the Arctic through a food security lenses adaptive management, a holistic understanding of the arctic systems and preservation of the entire ecosystem.

This understanding has brought to light the need to identify indicators that may be used to assess both social and physical systems...understanding that the integrity of all systems is needed to obtain optimal health.

Words that may be used during the workshop:

Assessment: An assessment is a process used to review and understand a situation, and guide decisions about that situation.

Indicator: Indicators are measurements that can be used to demonstrate the status of social, economic, and environmental conditions within a community. Indicators are the pieces of information or data needed during an assessment to understand the overall situation in the community (e.g. the number of active hunters in a community could be an indicator of how much traditional food is available to the community).



Food System: The food system is everything involved in feeding a population. This includes growing, harvesting, processing, transporting, consuming, disposing of foods and food products, education, language, etc.

Traditional Foods: those foods that Indigenous peoples have access to locally, without having to purchase them, and within Traditional Knowledge and the natural environment

The Project Needs to: Aspire to strengthen the evidence base of current circumstances surrounding food systems and health. Key concepts integral to promoting Inuit health and wellbeing include maintaining cultural identity, positive family dynamics, social support, spirituality and environmental integrity. Traditional food is center to Inuit identity and well being.

Concepts pulled from expert conversations. In reviewing these concepts try to consider what each one means. How do we express to an outside culture what these concepts mean from an Inuit perspective? What are the associated consequences and benefits?

- 1. Value of food
- 2. "Wellness is never just a physical condition. Wellness is the healthy interconnectedness of the environmental, spiritual, social, and cultural. Today food is an industry. Even nutrition programs, like some of those offered at schools are run like assemble lines, getting people in and out as fast as possible".
- 3. Health of Wildlife (multiple observations determine the health of animals)
- 4. How to determine Health (what are the causes of ill health in humans and animals; how are these determined)
- 5. Mental health (mental health associated with relationship to the environment, to animals)
- 6. Accessibility (accessibility can be stopped by the loss of language and/or education; accessibility can be stopped by regulations, etc.)
- 7. Cash / subsistence economy (a lack of outside culture understanding of dependency and importance of both economies; cost of gas)
- 8. Language (retention or loss of language)
- 9. Education (transfer of knowledge from elder to youth)
- 10. Government subsidies (food stamps, WIC programs; what is being subsidized; what should be subsidized)
- 11. Availability (availability was discussed in two ways: 1) the number of different animals and plants in an area. 2) What limits availability causes for decrease in number of different animals and plants and accessibility)
- 12. Regulations
- 13. Loss of sea ice (consequences); Change in sea ice (consequences / benefits: climate regulator, marine hazard, coastal buffer, use for transportation, cultural services, support of food webs and diversity)
- 14. Sharing systems
- 15. Adaptations to changes (what adaptations are being made; what inhibits or adds to the ability to adapt; adaptation day to day; adaptation by weeks; adaptation by months, adaptation by years for decision making)



- 16. Increase competition (sports hunters, tourist, environment NGOs, industry, etc.)
- 17. Ones control over ones on fate (how much decision power does a community have over what occurs within their environment)
- 18. Diversity (Variety in food sources; increase and/or decrease)
- 19. Contaminants
- 20. Burden of conservation
- 21. Rate of change
- 22. Must consider what the cost-benefit trade-offs associated with systems designed to cope with uncertainty within an Inuit village. What are these systems? Have they been internally established? Have they been introduced by outside cultures?
- 23. Determination of quality of life (what determines quality of life)
- 24. Impact of a mixed diet
- 25. Change in food storage
- 26. Stability of ground
- 27. New species
- 28. Change in temperatures
- 29. Sanitation
- 30. Land fill systems
- 31. Change in ocean currents
- 32. Change in weather
- 33. Respect for wildlife
- 34. Flooding (salt water, increase in rain, etc.)

Questions to consider: The below questions have been generated from conversations with the project contributing Inuit authors. These questions will not be asked at the workshop, however they may aid in preparation of the workshop.

- 1. What kinds of foods are in your community?
- 2. How many seasons exists within your environment?
- 3. Who decides what foods are available in your community...regulations?
- 4. Do people in your community rely on others to provide them food?
- 5. What resources are required (land, water, gasoline, distribution costs, etc.) to produce food for your community?
- 6. What impacts on the environment result from the shipment of the communities food
- 7. How would the community get food if a natural or other disaster stopped shipments?
- 8. How many jobs could be created if the community had control over commercial activities such as, fishing, sports hunting, etc.
- 9. Is food access identified as an essential service (like roads, schools, water, etc.)?
- 10. Do decision makers consider environmental impacts?
- 11. What are the pros and cons included by decision makers?
- 12. Does the community consider 'social nutrients'
- 13. Are young people taught food production and preparation, and connecting them to other community issues through food traditions?
- 14. Who decides what is done to the water in your community?
- 15. Who decides what occurs with the land in your water?
- 16. Do environmental regulations exist for your community? Do they protect your community's food safety and natural resources? Who determines what those are? Who enforces them?
- 17. What is the Arctic food chain?