



Sustainable Development  
Working Group



ARCTIC COUNCIL

**January 5th, 2019**

**Proposal to SDWG: Arctic Foods Innovation Cluster**

<p><b>Project Title:</b> Arctic Foods Innovation Cluster (AFIC)</p>	<p><b>Lead Country/Project leader(s):</b>  <b>Canada</b> - David C. Natcher (University of Saskatchewan)   <b>Kingdom of Denmark</b> - Martin Mohr Olsen (University of the Faroe Islands), Lau Øfjord Blaxekærjær (University of Copenhagen).   <b>Norway</b> - Ingrid Kvalvik (Nofima) and Sigridur Dalmannsdottir (NBIO), Bjørg Nøstvold (Nofima).   <b>Russian Federation</b> - Luydmila Siluanov, Sergey Koptev, Andrey Aksenov and Luybov' Zarubina, Northern (Arctic) Federal University.   <b>Finland</b> - Johannes Vallivaara (CEO, ProAgria Lapland - Arctic Smart Rural Communities) and Dele Raheem (University of Lapland).   <b>Iceland</b> - Ólafur Reykdal (Matis, Ltd.)   <b>United States</b> - Elizabeth Hodges Snyder (University of Alaska Anchorage), Rachael Miller (University of Alaska Pacific).   <u><b>Observers:</b></u>   <b>Association of World Reindeer Herders (AWRH)</b> – Anders Oskal, Svein Mathiesen.   <u><b>Others:</b></u>   <b>Scotland</b> - Inga Burton (Highlands and Islands Enterprise)</p>
<p><b>Summary of Required Project Inputs:</b> The total budget for this project will be determined following consultations with respective SDWG Delegates. It is expected that if supported, each State will provide sufficient funding to their research leads to carry out the proposed activities.</p>	<p><b>Relationship to other AC Working Groups:</b> <i>AMAP, CAFF, PAME, Arctic Economic Council.</i></p>

**Summary of project objectives and main outcomes:**

This document outlines our plans to establish an Arctic Foods Innovation Cluster (AFIC). The AFIC will pull together relevant people in the Arctic foods value chain for a cluster-based approach to food production and regional economic development. We understand *food production* to encompass traditional, artisanal, and industry-scale production of natural resources into food for own, national, and international consumption. A cluster-based approach to food innovation will draw together Arctic food producers with governments, Arctic Indigenous communities, universities, research centers, vocational training providers, and industry associations and young people (the next generation). Overall it will respond to global challenges of food production while seeking to define the Arctic's role and contribution to the changing climate and issues of food security locally and around the world.

**Purpose**

This document outlines our plans to establish an Arctic Foods Innovation Cluster (AFIC). This research builds on previous work conducted under the auspices of the Sustainable Development Working Group (SDWG) under the project title, *The Arctic as a Food Producing Region (AFPR)*<sup>1</sup> (2016).

**Background****Arctic as Food Producing Region**

In 2016, the SDWG endorsed the Arctic as a Food Producing Region project

<https://www.sdwg.org/activities/sdwg-projects-2017-2019/4600-2/>

The key aim of the *Arctic as a Food Producing Region (AFPR)*<sup>2</sup> was to assess the potential for increased production and added value of foods originating in the Arctic, with the overarching aim of improving northern food security, and enhancing the social and economic conditions of Arctic communities.

The results of the AFPR project<sup>3</sup> affirmed that the Arctic region is a considerable producer of commercial foods. Food industries are producing large volumes of food commodities that are culturally compatible with Indigenous/local food preferences and also have high export value. In 2016, the total export volume exceeded 5.6 billion kg and generated an estimated value of \$24.8 billion USD (Table 1)

<b>Table 1. Country Level Data on Export Volume and Revenue (2016)</b>		
<b>Fish, Crustaceans, Mollusks, and Other Aquatic Invertebrates</b>		
<b>Country</b>	<b>Volume</b>	<b>Revenue</b>
Canada (Arctic)	75,163,383 kg	797,960,562 CAD
Alaska	1,552,429,349 kg	2,113,876,099 USD
Norway	2,232,902,000 kg	89,187,310,000 NOK
Denmark	662,426,523 kg	21,866,239,000 DKK
Finland	56,078,000 kg	52,608,401 EUR
Iceland	421,239,600 kg	216,131,300,000 ISK
Sweden	634,256,000 kg	37,787,931,000 SEK
<b>Total</b>	<b>5,634,494,855 kg</b>	<b>24,808,094,199 USD</b>

<sup>1</sup> <https://www.sdwg.org/activities/sdwg-projects-2017-2019/4600-2/>

<sup>2</sup> <https://www.sdwg.org/activities/sdwg-projects-2017-2019/4600-2/>

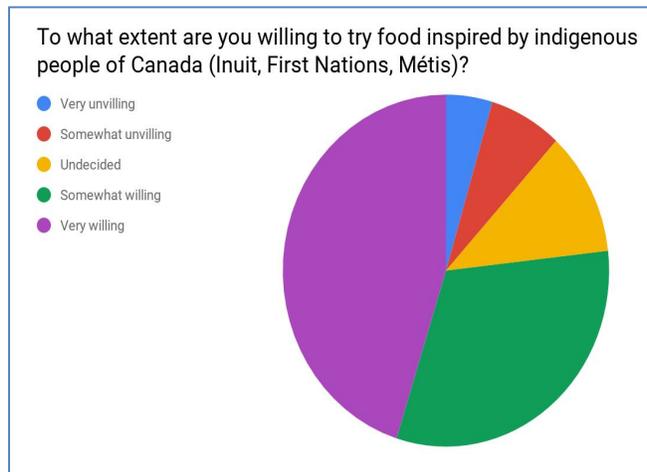
<sup>3</sup> <https://gistest.usask.ca/arcticfoodV2/>

For example, in 2016, Alaska alone exported in excess of 1.5 B kg of fish and other marine products to international markets. This export had an estimated value of \$2.1 B USD. The production and distribution of these products involved an extensive value chain of domestic and international actors, including producers, processors, transportation services, and wholesalers.



**Figure 1. Alaska International Food Export**

Furthermore there is evidence of considerable interest among consumers to purchase foods from the Arctic. For example, in a survey of 3,602 respondents from across Canada, 77% reported that they would be willing to try foods that are representative of Indigenous cultures, while 86% reported that they would be willing to purchase food originating from Arctic regions.



**Figure 2. Willing to Purchase Arctic Foods (Canada).**

However, the AFPR project also found that the Arctic foods value chain is challenged by a host of social, economic, logistical, and political obstacles (e.g., tensions associated with commodifying traditional Indigenous foods, high cost of food production input, limited road miles, absence of legislative prioritization of food systems development). While these challenges are experienced unevenly across the Arctic regions, Arctic food industries: 1) tend to be fragmented; 2) have tenuous professional connections; and 3) have limited communication streams.

These conditions have in part led to:

- general overreliance in raw food exports
- bottlenecking of distribution points
- limited innovation in primary and secondary product development.

### Drivers

There are a number of drivers that justify the need for greater engagement and collaboration around the potential for growth of the Arctic food and drink sector. A number of which were highlighted in the AFPR 2016 report.

In addition, ethical and environmental values are of extreme importance, particularly to Arctic Communities, and are core to the UN Sustainable Development Goal and the SDWG Strategic

Framework. Adding to the urgency to act in an ethical and environmental conscious way to Arctic development are the findings of the Intergovernmental Panel on Climate Change Special Report<sup>4</sup> that calls for global action to limit global warming to no more than 1.5 °C by 2030. Specific to food production, the combination of different post-harvest stages in the food value chain such as packaging, retail, transport, processing, food preparation and waste disposal represents approximately 5-10% of global greenhouse gas (GHG) emissions and are expected increase if the post-harvest stages are not well-managed<sup>5</sup>.

To help reduce GHG emissions and achieve the IPCC target, requires an integrated cross sectoral approach that engages with the whole energy system (including logistics). Technological advancement and digital food production technologies will play a major role but will also require a paradigm shift in relation to the needed skills of Arctic residents. This will be especially significant to small and medium sized enterprises and entrepreneurship opportunities particularly around the circular economy and industrial biotechnology. Different regions will have their own assets and challenges which require appropriate responses in order to maximize the opportunities locally and globally.

These and other socio-environmental drivers require a transformational response. Such a response should be place-based, challenges led, research driven, and have global influence. It is in this context that we propose to explore the appropriateness and strategic usefulness of an Arctic Foods Innovation Cluster.

### **Arctic Foods Innovation Cluster (AFIC)**

The Arctic Foods Innovation Cluster (AFIC) will pull together relevant people in the Arctic foods value chain for a cluster-based approach to food production and regional economic development. We understand *food production* to encompass traditional, artisanal, and industry-scale production of natural resources into food for own, national, and international consumption. We understand *food innovation* to encompass 1) new modes of production and consumption patterns, e.g. introduction of hydroponics or aquaponics farming; and 2) new production and consumption of non-food products, e.g. using waste products from the seafood sector to produce medicine or fabrics (Ocean Cluster in Iceland) or seaweed production as both food source and CO<sub>2</sub> sequestration (Ocean Rainforest in the Faroe Islands).

A cluster-based approach to food innovation would draw together Arctic food producers with governments, Arctic Indigenous communities, universities, research centers, vocational training providers, and industry associations and young people (the next generation). Overall it would seek to respond to global challenges of food production while seeking to define the Arctic's role and contribution to the changing climate and issues of food security locally and around the world. The AFIC will create opportunities for entrepreneurship and innovation in the food and drink industry and supply chain, while strengthening the Arctic's position at the international scale.

The objective of the AFIC will be to create added value for Arctic Communities by connecting northern entrepreneurs, southern-based investors, research centers, businesses and bio-technology developers that have knowledge and interest in the Arctic food industries. The AFIC would be motivated by the combined efforts to respond to global challenges such as food security and climate change.

With Hubs located in each of the Arctic Council Member States, **the Cluster would:**

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<sup>4</sup> <https://www.ipcc.ch/sr15/>

<sup>5</sup> Garnett, T., Smith, P., Nicholson, W., & Finch, J. (2016). Food systems and greenhouse gas emissions (Foodsource: chapters). Food Climate Research Network, University of Oxford.

- Increase communication
- Provide a framework for future capacity building
- Coordinate activities

**Country-based Hubs** would be connected under the umbrella of the AFIC and focus on:

- Business incubation
- Networking
- Consulting services
- Research in areas of economics, logistics, biotech development
- By-product utilization

We envisage that the partners in the AFIC will benefit through professional linkages that are established between Hubs, where knowledge spillovers are enhanced and innovations in the Arctic food system are achieved.

The benefits for Arctic communities and businesses include opportunities for innovation, development and diversification that transform the local food and drink sector creating sustainability at a local level whilst redefining the food economies of the future.

Innovation Clusters have been defined as: inter-connected firms and institutions working in a common industry. They involve the creation of collaborative and dynamic relationships between various players around common goals, innovative ideas, knowledge sharing, public and private investment. Clusters foster a collaborative environment around a common framework designed to promote synergy and innovation<sup>6</sup>.

## **Activities and Outputs**

### **Methodology**

During the final year (2018-2019) of the AFPR project a series of consultations with various actors in the Arctic food value chain were undertaken. Nearly all spoke of the considerable diversity across the Arctic, whether in terms of the types of foods produced, the costs of food production, transportation and storage constraints, and governmental policies that either facilitate or inhibit distribution. Yet overall, the responses concerning an AFIC were overwhelmingly favorable, with all noting the need for a more formal and coordinated means of exchange and cooperation in light of the significant food related challenges of the Arctic.

It is proposed that the establishment of the AFIC will require an initial two year period and involve four key stages. These research stages will be conducted in each partner Nation (e.g., Hubs) by their respective research teams.

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<sup>6</sup> Engel, J. and Itxaso del-Palacio, 2009. Global networks of clusters of innovation: Accelerating the innovation process, *Business Horizons*, Volume 52(5):493-503.



**Figure 3. Research Stages**

**Stage 1: AFIC Scoping**

One of the major methodological tasks will be to gain an understanding of how the cluster model will work and how the AFIC can best be organized to meet the needs of stakeholders. This will be approached in part by:

- Identifying and engaging Arctic food value chain actors (e.g., producers, retailers, transportation bio-technology\research, and government departments\agencies).
- Identifying and engaging Arctic Innovation Clusters to identify synergistic potential.

While a range of models exist in other sectors, we will seek input from those involved in the Arctic food value chain, particularly those who are, or have been involved in industry clusters in the past. More specifically we will explore: the essential elements that all clusters must provide in order to ensure equitable service; the possible variations (models) in management that will reflect the unique environment of the Arctic, but still accommodate local, regional and national differences; and the type of business models that may be required to ensure the continuation of the AFIC, beyond its formative period (3-5 years). Last, it will be necessary to consider how the AFIC can complement existing government frameworks and initiatives (i.e., Nutrition North in Canada). Taken together the answers to these questions will help ensure a critical pathway to development in ways that can foster cooperation and innovation in Arctic food systems.

**Stage 2: AFIC Consultation**

This project will be initiated through a series of ‘Arctic Consultations’ that will take place in regions and communities where stakeholders will be invited to engage and contribute their views and thoughts around values and priority areas for an AFIC. We will consider the nature of existing activities and outcomes of the AFPR, anticipated/forecasted activity and environmental/ social conditions and values/priorities. Once identified, Key Informant Interviews will be conducted and will explore the multiple dimensions that will undoubtedly influence the success of an AFIC:

Dimensions Affecting the Implementation AFIC	
Dimension	Condition
<b>Economic</b>	<ul style="list-style-type: none"> <li>● How difficult it is for producers to gain access to new markets.</li> <li>● If food certification processes create competitive advantages.</li> <li>● Whether communication between value chain actors is effective and consistent.</li> <li>● How prohibitive food shipment and storage costs are to market development.</li> <li>● The constraints posed by food inspection and safety requirements.</li> <li>● The extent to which transportation infrastructure has constrained product and market development.</li> </ul>

	<ul style="list-style-type: none"> <li>• The use of and potential for technological advances (e.g., full-utilization processing).</li> <li>• How stakeholders envision an AFIC functioning and what role they see their organizations playing in its development?</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>• Environmental management systems</li> <li>• Environmental labelling</li> <li>• Logistics</li> <li>• Carbon footprint</li> <li>• Supply chain opportunities</li> <li>• Local / self sufficiency</li> <li>• Circular economy</li> <li>• Pharmaceutical crops</li> <li>• Vertical farming</li> <li>• Carbon negative crops</li> <li>• Climate</li> </ul>
<b>Socio-Cultural</b>	<ul style="list-style-type: none"> <li>• Traditional Ecological Knowledge</li> <li>• Entrepreneurship</li> <li>• Education</li> <li>• Employment</li> <li>• Slow Adventure/ Food Tourism - high value</li> <li>• Cultural values</li> </ul>

The Arctic as a Food Producing Region Conference in Whitehorse, Yukon (September 2019): In September 2019, a conference will be held in Whitehorse, Yukon with the dual purpose of sharing the results of the AFPR project and to engage a larger and more diverse audience about the potential of an Arctic Food Innovation Cluster. This gathering will bring together key actors along the value chain for a face-to-face opportunity to meet, exchange ideas, and most importantly, begin to build personal and professional relationships.

All conversations held across the Arctic will be collated and captured in a Year 1 report in which the outcomes can be shared and used to shape the values, priorities and projects for the establishment of the AFIC.

Ongoing commitments will be made to ensure relationships are maintained and project results and achievements and disseminated to the defined targeted audiences.

### **Stage 3: AFIC Design**

The establishment of an AFIC would be based on the outcomes from Stages 1 and 2. This will involve strategies for knowledge transfer within and between hubs as well as strategies to facilitate innovation in the Arctic food systems (e.g. training and piloting, exchange programs, technological and investor forums).

#### Pilot Testing:

Cluster piloting has proven useful for identifying potential hindrances and pitfalls to collaboration, trust-building and economic development. Our aim in conducting a pilot study is to establish best practices for an AFIC and to put into place a flexible framework that can be used to guide the further

development of the AFIC. In this project, we will collaborate with the Association of World Reindeer Herders (AWRH) to examine the opportunities and constraints associated with their participation in the AFIC. Opportunities may include access to new food markets, innovations of food processing and full utilization methods, and the strengthening of cultural values through traditional food production, consumption and transmission of cultural knowledge. Constraints may include financing, inadequate value chains, food safety and inspection requirements, and continuity/loss of food culture knowledge. An objective of our collaboration with the AWRH will be to advance the *Food Innovation Leadership Program*, which was initiated by the International Centre for Reindeer Husbandry (ICR) and Nord University of Norway in realization of the Arctic Council Fairbanks Declaration point # 22, in which Arctic States: "...Encourage the establishment of a program for training indigenous youth in the documentation of traditional knowledge related to food, food entrepreneurship and innovation". We will also lend support to the AWRH's Northern Sea Routes initiative, that will investigate how the Northern sea routes can provide economic opportunities for Arctic indigenous societies, through increased market access and local value-added products. The vision is to diversify local economies by solving the problem of bringing untapped food resources to new markets, in ways that benefit the primary producing indigenous societies. Through this collaboration we will pull the collective skills, knowledge, and professional networks to advance opportunities and overcome constraints to Arctic food innovation.

#### **Stage 4            AFIC Implementation**

This stage will initiate the launch of an AFIC and related projects.

Future stages would be expected based on the outcomes from the initial two years and could include for example a series of scoping exercises aligned with the outcomes from the conversation, these could include existing services/key stakeholders along the value chain. While some of this information has been gathered during the AFPR project, additional baseline information on the number and types of expertise available and interested to participate in an AFIC will be collected.

#### **Partnerships**

##### **Linkages to other SDWG initiatives**

In our initial consultations with potential collaborators, we have been encouraged to build on rather than duplicate existing institutions and initiatives. With this direction, we will establish strategic partnerships where shared goals can be advanced, most notably the Arctic Economic Council (AEC).

The Arctic Economic Council<sup>7</sup> was established during the Canadian Chairmanship of the Arctic Council (2013-2015) and was designed as an independent organization aimed to facilitate business-to-business partnerships. These partnerships are cultivated through the sharing of information, best practices, and innovative solutions to the unique challenges of the Arctic. The AEC serves as primary forum for interaction between the Arctic Council and wide circumpolar community. The AEC is well positioned to contribute to and advance the objectives of the AFIC.

At a project level there may be opportunities to collaborate with other SDWG initiatives, such as the Blue Economy project that is being considered by the SDWG. The Blue Economy refers to the bioeconomy from marine and aquatic origin. Researchers associated with the Blue Economy project propose to conduct a comprehensive analysis of opportunities and success stories from across the Arctic on obstacles to, and opportunities for, sustainable blue growth. Their analysis will include fisheries,

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<sup>7</sup> <https://arcticeconomiccouncil.com/>

aquaculture, Algae production, and under-utilized species. This review will identify best practices, technological innovations and success stories. These goals are consistent with the preparatory phase of the AFIC (Stage 1 and II discussed below). Opportunities to align activities with current work and existing initiatives such as the AEC and the Blue Economy project will create synergy and added value for the SDWG through institutional and project collaboration.

### **Research Advisory Committee (SECEG)**

In this project we will also draw on the expertise of the Social, Economic and Cultural Expert Group to serve as a Research Advisory Committee. Under the direction of the SDWG, the Social, Economic and Cultural Expert Group (SECEG) supports work to advance social, economic and cultural research in the development of sustainable and integrated approaches emerging in the circumpolar region. Mindful of the other demands placed on SECEG members, we will seek their input on our methods, deliverables, communication, and roll out strategies. The support of SECEG will be instrumental given their circumpolar representation and their social science and Indigenous knowledge expertise. Perhaps most importantly the Research Advisory Committee help to ensure our methodologies are sound, our approaches are collaborative and community-focused, and that research findings are disseminated in ways that are most relevant to the real-world needs of Arctic resident.

### **Linkages to other Arctic clusters**

The AFIC aims to foster cross-sectoral innovation between food production and community development clusters in the Arctic. The AFIC will focus its efforts in supporting strategies that allow existing clusters to collaborate and engage in food production activities with the aim to create new services, products, and value chains across the Arctic. AFIC will support strategies that will enhance community development through cross-sectoral and cross-border innovation in sustainable food production.

Several existing clusters deal either directly or indirectly with food production and/or rural and community development (Table 2). We believe it makes strategic sense to establish partnerships with existing clusters rather than trying to duplicate work that has already been done or trying to build relationships that have already been formed. Approached in this way the AFIC will link to other cluster initiatives that are already established in the areas of food production and community development. This might involve linking the food processing technologies that have been developed by the Northern Atlantic Seafood Cluster, building relationships with the Icelandic Ocean Cluster, which has made significant advances in Full Utilization technologies, and learn more about the rural development efforts of Arctic Smartness.

By linking to existing food production and rural/community development clusters (partial list included below), the AFIC will be enhanced through geographical reach and strategic advantage. This includes the expansion and creation of new markets and value chains. In this way, Arctic communities will gain access to new technologies, business development opportunities, and skill development, while the broader Arctic community will benefit from cross-sector and cross-border collaboration, leading to more sustainable Arctic food systems and economies.

**Table 2. Partial List of Existing Arctic Innovation Clusters**

<b>Organization</b>	<b>Country</b>	<b>Description</b>
Arctic Smart Rural Community Cluster	Finland	Arctic Smart connects small entrepreneurs and developers inside to modern cluster model. Cluster adds value to food production enterprises, SMEs, farmers and decentralized energy production in Lapland region.
AgriFood Capital	Netherlands	AgriFoods involves collaboration between public authorities and knowledge institutes engaged in the growth and innovation in agrifood. AgriFood Capital is a cluster recognized for its future-proof employment market, strong entrepreneurship, and high-impact innovations.
Iceland Ocean Cluster (ICC)	Iceland	ICC's mission is to create value by connecting together entrepreneurs, businesses and knowledge in the marine industries.
Smart AgriFood Super-Cluster	Canada	SASC is a pan Canadian super-cluster that will dramatically improve competitiveness, productivity, market value and the environmental performance of Canada's agricultural systems. It will accomplish this by creating shared value partnerships that identify opportunities for strategic investments which can be scaled for meaningful impacts.
NCE Seafood Innovation Cluster	Norway	The Seafood Innovation Cluster AS obtained NCE status in 2015 and has developed into the most complete and mature cluster in the seafood industry with 90 partners.
NCE Aquatech Cluster	Norway	NCE Aquatech Cluster consists of senior executives from small and large suppliers, end users, R&D and education, and holds significant expertise in aquaculture and cluster management.
NCE Aquaculture Cluster	Norway	The Aquaculture Cluster represents an industry with strong expertise, proud traditions and world leading companies in their respective business areas. These areas are important for further development of Norwegian aquaculture, and include production of fry and edible fish, processing, feed production, technology, health and environment, finance, research and training.
Ocean Super-cluster	Canada	Ocean Super-cluster will harness emerging technologies to strengthen Canada's ocean industries—industries like, fisheries, aquaculture, and transportation. This supercluster will ensure Canada's future prosperity as a source of jobs and solutions to global challenges
Alaska Ocean Cluster	USA	Launched by the Bering Sea Fishermen's Association (BSFA), the Alaska Ocean Cluster promotes maritime industry growth and prosperity in Alaska. Modeled after experiences in Iceland, Ireland, Norway, and Canada, the cluster concept involves a coalition of private, public, and academic stakeholders forming around a base industry and, in the process, supporting both the industry and each other through economic transactions and circulated assets.

## Timetable and Project Completion

Month	1	2	3	4	5	6	7	8	9	10	11	12	Description of Activities	
	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar		
2019-2020		Mtg Launch					Meeting						- Project Launch (location TBC). - Arctic Circle Assembly in Reykjavik.	
						Conf.							AFPR Whitehorse Conference	
			Stage I: Scoping											- Phase I Research - Phase II Research - Pilot Launch w\ IARH
						Stage II: Consultation								
										Launch Pilot				
												Y1 Report		Y1 Reporting
2020-2021		Phase II: Consultation												- Phase Two Research
		Conduct of Pilot												
										Meeting				- Arctic Frontiers, Tromsø.
		Meeting												- High North Dialogue, Bodø
						Stage III: AFIC Design								- Phase III Research
								Stage IV: Implementation						- Phase IV Research
										Draft Report		Final Report		- Final Reporting

## **Costs**

The total budget for this project will be determined following consultations with respective SDWG Delegates. It is expected that if supported, each State will provide sufficient funding to their research leads to carry out the proposed activities. Those budget requirements include:

- Field support for the conduct of research activities (Stages 1-4).
- Domestic Travel and Accommodations.
- International project meetings (incl. hosting, travel, accommodation and work hours).
- Administration, including cooperation with partners and contact with stakeholder groups.
- Collective contribution to the design and conduct of AWRH Pilot Study.
- Support for Indigenous Steering Committee Members.
- Publication and outreach costs.

## **Integration of Traditional and Local Knowledge Indigenous Steering Committee (ISC)**

A critical dimension of this project involves the establishment of an Indigenous Steering Committee (ISC). The ISC will be composed of representatives from each of the Permanent Participants as well as other Indigenous SDWG observers (e.g., Association of World Reindeer Herders).

The direct involvement of the ISC is essential to help maximize the opportunities for new and commercially based food-producing markets that will support opportunities at local level whilst meeting the global challenges and remaining true to the cultural values.-This will necessarily require close collaboration with Indigenous partners where new systems can be co-designed in ways that support and maximize opportunities. In this context the inclusion of TLK will be fundamental in the design of the AFIC and will be in large part achieved through the close involvement of the ISC PP and other Indigenous representatives as appropriate. Steering Committee members will be self-selected by PP members based on their knowledge of food systems and initiatives already underway in their communities and regions.

## **Communications**

The input of all project partners, including the ISC and Research Advisory Committee (SECEG), will be sought on our methods, deliverables, communication, and roll out strategies. This will ensure our approaches are collaborative and community-focused, and that research findings are disseminated in ways that are most relevant to the real-world needs of Arctic resident.