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15 Building traditional food knowledge

An approach to food security through North-South dialogue

Anne Ouma

Introduction

The relationship between governance and food security in the Arctic region is evolving to include more complex partnerships among members of civil society, non-governmental actors, academia, economic agents, and various levels of government (Petrov et al. 2016). Interdisciplinary collaboration is needed more than ever to study and comprehend the challenges of food security and solutions to it. These collaborations for instance must examine governance partnerships and provide recommendations (Petrov et al. 2016). Addressing some key components of the governance of natural resources could ensure sustainable and equitable food security in the current rapid socioeconomic and sociocultural transformation in the Arctic region (Kurtz 2013). Indigenous populations' worldview define sustainable development and land stewardship by emphasising the importance of these activities to maintain ecological health and food security, as well as to secure access to resources from the land. Indigenous societies and communities argue that stewardship of the land partially defines their identity, which is viewed as significant to decisions pertaining to the sustainable governance of food systems and natural resources (Berkes 2009). Indigenous knowledge systems are based on reciprocity and mutual relationships between humans and nature within a holistic worldview that is anchored in specific spatial contexts (Cunningham 1993). They are combined knowledge systems that encompass technological, social, economic, philosophical, educational, legal, and governance systems. In Oguamanam's description, the ideology of nature is portrayed as an organic entity and humanity as part of an integral whole. This is a theory of life 'whereby unity in the diversity of life, forms a synthesis of materialism and deep spiritualism' (Oguamanam 2006, 53).

This chapter discusses some of the immediate and long-term challenges currently facing the Arctic. The Arctic (and other parts of the globe) currently faces diverse environmental, economic, and social challenges that impact food (in) security. This chapter's empirical contribution is informed by participatory, community-based research that builds on knowledge and understanding of the local dimensions of food. The chapter explores how we

might find a qualitative grounding for the ideas of biocultural diversity and food (in) security within the personal stories shared in the talking circle. It also examines how various actors perceive current governance structures and the direct or indirect relationship of land stewardship to food (in) security. The chapter further explores the foundation for Indigenous governance of the environment, which is based on spiritual principles and provides just, forward-looking governance of natural resources, particularly food resources. It discusses how the findings are applicable in the broader context of Arctic research with examples from other communities with in Northern and Southern countries. The stories from the talking circle examine processes of socio-ecological change that impact food security. They assess the research, education, and communicative strategies required to address possible change and active community wellbeing. This includes developing strategies for relationship building, which is the foundation for Indigenous governance of food and natural resources.

Methodology

The 2011 Coastal CURA People in Places Conference focused on the inclusion of Indigenous communities in integrated resource management. This focus created an ideal opportunity for sharing knowledge in a format based on Indigenous talking circle traditions. Talking circles are one of several Indigenous methodologies which have a non-hierarchical form of dialogue. Participants sit in a circle; this symbolises equal respect for and the equal importance of the ideas and stories of all participants. All participants are given the opportunity to speak without interruption (Simmons et al. 2012). An object obtained from nature (e.g., a stick, feather, or tobacco pouch) is passed around the circle to indicate whose turn it is to speak. A participant can also decide to keep silent and pass the object to the next person. Indigenous Peoples have traditionally used talking circles to solve problems. A talking circle is a very effective way to remove barriers and to allow people to express themselves with complete freedom. As Muin'iskw and Crowfeather (2016, 1) explain, 'The symbolism of the circle, with no beginning and with nobody in a position of prominence, serves to encourage people to speak freely and honestly about things that are on their minds'. Traditional talking circles have been used to create a culturally safe space for Indigenous women to talk about healthcare experiences (Kurtz 2013).

Because the Coastal CURA People in Places Conference focused on the inclusion of Indigenous communities, talking circles were chosen as a methodological portion of the conference proceedings. The aim of the talking circle was to provide a space for dialogue and for an understanding of the role of traditional environmental governance knowledge in natural resource management. This discussion acknowledged the idea of agency that underpins how Indigenous Peoples think and relate to nature. It aimed to start new or (in some cases) renewed relationships that could generate new

possibilities and confidence for turning knowledge sharing into solidarity in action.

It was imagined that the forum could help build relationships and that participants might feel comfortable continuing conversations from the talking circles during the rest of the conference or even beyond the conference. The conference talking circles focused on sharing experiences with Indigenous traditional knowledge related to environmental governance. The participants in the talking circles were conference attendees who enrolled in the talking circle workshop. A total of 34 people sat in the circle for at least one of the two 1.5-hour afternoon sessions. This schedule was planned to allow conversations to fully develop. Chairs were set up in a circle. The 34 participants shared their homelands or research sites, and the geographical spread was impressive. They came from across Canada, the United States, Latin America and the Caribbean, and Africa. The talking circle revealed a remarkable range of struggles and positive experiences for both Indigenous researcher-practitioners and non-Indigenous allies. It provided a space where participants (including elders of First Nations in Canada; master's students from Kenya, Canada, and Sweden; practitioners from Ecuador; and university researchers) from around the world, with diverse backgrounds and experiences, could feel comfortable sharing their experiences in working with Indigenous or traditional knowledge of food resources. The workshop attracted considerable interest, partly because of the format itself. As one participant said, 'I come to circles because I know there won't be somebody talking with a PowerPoint'.

The synthesis of key messages was enhanced by the range of perspectives provided in participant's narratives. The talking circle was very fertile in a number of respects. Contributions were oral and not based on prepared written documents or slide presentations. There were three facilitators; one opened the discussion with a quiet moment and then passed the tobacco pouch to the next speaker. The tobacco pouch went around the circle several times. The talking circle was audio recorded so that contributions could be transcribed and included in published proceedings. The session coordinators provided participants with a formal opportunity to provide consent for these forms of documentation. The audio recording was supplemented by written notes to ensure that the names of speakers were recorded as a reference for the transcriber. Photos were taken, and, to provide a visual representation of the geographical/cultural spread of the participants, a Google Earth map was displayed, and participants' homelands and/or research locations were marked. As envisioned by the co-facilitators, the talking circle approach was necessarily hybrid in this international context as it bridged multiple non-Indigenous and Indigenous cultures. It contained ceremonial aspects rooted in Cree traditions. [For other accounts of talking circle processes, see Simmons et al. (2012).] The talking circle allowed for a

certain flexibility and informal approach that enabled people from different backgrounds to feel comfortable.

This chapter uses a form of thematic narrative analysis to examine the content of the stories. A thematic narrative approach, according to Sandberg (2011, 46), focuses on themes in a story to give a sense of direction and purpose. The emphasis then is on the content of the message rather than language, form, or interactions. A thematic narrative analysis can aid comprehension of how stories are understood in the context of social, spatial, and environmental processes and spaces. It can help unearth contextual aspects of the stories given the diverse locations represented in the circle. In the transcribed stories, similarities and differences appear, and common themes emerge and evolve through the analysis. A contextual interpretation was used to develop these themes. Several common themes and concerns emerged from the stories shared in the talking circle. These themes were interwoven in a complex fabric that incorporated participants' multiple, diverse stories. Three key themes were used to code the transcripts: socioecological and governance changes that impact Indigenous knowledge of food resources; conflicts around food security and threats to traditional ecological knowledge (TEK); and strategies for partnership and relationship building (including resilience). Wiles et al. (2005) discuss a contextual analytical approach for interpreting stories. To better understand the themes and their implications, it was necessary to place the issues and understandings in context. This helped reveal some salient tacit meanings in the stories that could be used to address the key questions. Context was particularly important given the diverse geographical spread of the circle participants.

Consent to use the transcribed stories and narratives was obtained from the primary facilitator, who was also responsible for documentation.



Figure 15.1 Talking circle, *People in Places: An International Conference*, 26–29 June 2011, Halifax, NS.

Theoretical framework

In the Indigenous worldview, humans are part of rather than separate from the natural world. This worldview recognises links between cultural identities, language, and land resources, including food resources (Blythe and McKenna Brown 2004). Morphy (1995) discusses the inherent tie between Indigenous knowledge and the land, while Frawley (1999) recognises the connections and understanding of place and space found in Aboriginal knowledge of natural resources.

Other literature discusses the role of the land in place and space with an emphasis on ‘maintaining the integrity of the land and food resource itself’ (Battiste 2002, 13). This interface between nature and culture exists within the complex interactions between people and the environment over time (Rössler 2005). Maffi (2005) discusses people’s knowledge and practices, highlighting the role of language as a vehicle for communicating and transmitting cultural values (which include knowledge of food security and practices), while also mediating interactions and mutual adaptations between humans and the environment. According to Battiste (2002, 2), about 20% of the world’s population engages with TEK systems, which are described as

knowledge which comprises the complex set of technologies developed and sustained by Indigenous civilisations; this knowledge which is often oral and symbolic, is transmitted through the structure of Indigenous languages. It is passed on to the next generation through modelling, practice and animation, rather than through the written word.

Silverman (2011) proposes that culture and links to place are both contested concepts. Distinct local communities are attached or linked to their local biological environments through a network of feedback webs that have been subjected to scholarly debate. This is in contrast to viewpoints that depict humans as external to and separate from nature; in this view, human interactions with nature are based on efforts to dominate it (Maffi 2005).

TEK is ‘the sum total of local knowledge and skills on ecology, unique to places and societies, which people in a particular geographic area possess and which enables them to get the most out of their natural environment’ (Grenier 1998, 2). The knowledge of food systems embedded in TEK can often be difficult to systemise as it is embedded in collectively owned socio-cultural values and belief systems, rituals and practices, governing institutions, and relationships (Tanzania Gateway 2010). Battiste and Henderson (2000) call TEK a complete knowledge system embedded within wider knowledge systems; all these systems are dynamic and have spatial, temporal, and place-specific dimensions as well as their own philosophical, epistemological, scientific, and logical validity. Some scholars further expand the definition of TEK to describe a holistic worldview that is embedded in communities. While contextually based within the local language,

TEK includes environmental practices that are based on reciprocity, obligations to community laws, communal resources, and other life forms. They are management institutions based on sharing and meaning (Oguamanam 2006). TEK can be said to invoke mutual relationships between humans and nature (within the complex kinship systems of relationships among people, animals, the earth, the cosmos, etc.). They are founded on a sociocultural milieu that sustains a belief in complex spiritual and social relationships among all life forms (Ermine 1995).

Gibson (2004) situates TEK in relation to increased mobility and governing economic dynamics. The argument is that rights to traditional knowledge and food resources are determined by historical, temporal, geographical, and spatial dimensions. Gibson argues that, within communities, individuals emerge who claim commercial rights to what have previously been seen as communal resources. Hart (2002) discusses the extreme inequalities that exist during the application of neoliberal policies of local governance and land policy. Hart also provides tangible recommendations for land governance policies and activism, advocating for the ‘disarticulation of land from natural resource management and agriculture and the re-articulation of its significance in terms of its potential contribution to a social wage’ (Hart 2002, 305).

Frawley (1999) also considers the relationship of TEK to place and space, discussing the interconnectedness and understanding of place, space, and cultural diversity as part and parcel of Aboriginal knowledge of land stewardship:

For Aboriginal Australians, nature and culture are inextricably bound together in the Dreaming – the time when the world, including Aboriginal people and their law, was created. Belief systems associated with the Dreaming link specific places with Dreaming events and give every person, living and dead, a place within a physically and spiritually united world. The landscape is not therefore a composite of external objects, but is made up of culturally defined features of mythical significance.

(1999, 272)

Indigenous communities are and have been engaged in an array of diverse efforts to reverse the erosion of TEK, by reclaiming a reverential relationship with the sacred and spiritual worlds in an attempt to restore balance. It is argued that this could provide a framework to address food security. Sacred place(s) and space(s) are inherently tied to specific landscapes where harvest and planting ceremonies are held; sacred places define spiritual connectedness (Morphy 1995). Frawley (1999) adds that this interconnectedness and an understanding of place and space are central features of knowledge of food resources and the mythical significance of those resources. UNESCO’s discussion of approaches during the UN Decade on Biodiversity (2010–2020) refers to ‘moral values, norms, and traditions that will be

needed to reshape our relationship with the living world of which we are part of (UNESCO Biodiversity Initiative 2011, 4).

Morphy's (1995) research on spiritual connectivity is exemplified by the harvest and planting season ceremonies in Misungwi Tanzania. These ceremonies include the use of staple fodder and animal products such as milk, ghee, sorghum, and millet. Participants adhere to a special dress code in a specific ecological space that is recognised as sacred. These spaces are believed to enable food resources to acquire spiritual power before and after the planting and harvesting seasons (Ouma 2013).

The erosion of TEK and specifically of knowledge of food security has been widely discussed. Hoppers (2002) argues that 'the erosion of people's knowledge in general in Africa associated with food and natural resources is said to be under greater threat than the erosion of the food and natural resources themselves' (2002, 7). Some postcolonial alterations in land policies and land rights in Tanzania and Kenya influenced the management of TEK. For instance the abolition of chiefdoms in Tanzania and therefore their role as administrators and overall managers of the custodianship of TEK within communities was truncated. New alternative administrative and managerial structures were put in place by the colonial project; (Bukurura 1994). The resulting alterations affected the control and management systems of TEK (Mshana 2002). The original chiefdom systems played a central role in managing TEK of food resources, land tenure, farming systems and practices, and related governing structures. In Tanzania, the Dagashida Institution of the Sukuma Societies, which has existed for hundreds of years, works with decision-making processes, with linkages to TEK governance and its ability to resolve conflicts (Brandström 1990). This could have contributions that relate to food security in communities. Previous research in Mwanza Tanzania (Ouma 2013) provides an example of the contemporary use of local TEK to predict the success of crop harvests which could determine food (in) security for the local communities (Figure 15.2).

Whittaker (2015) examines the role of TEK in sustainable food resourcing in rural Yuan Yang China and discusses how the use of TEK in food sourcing provides communities with stable and diverse diets and enables various ecological niches to connect into a resilient whole.

Food Tank (2018) Indigenous Network (<https://foodtank.com>) discusses ways to improve the resilience of food systems. It also highlights the key role Indigenous Peoples play in sustainable farming and food security around the world due to their traditional knowledge and understanding of land governance, ecological systems, and local biodiversity. The resilience of Indigenous farming and its contributions to food security can be seen in examples of traditional farming practices from around the globe. Examples include the use of agroforestry by some Amazonian Indigenous communities and in Latin America, the Caribbean, and Ghana; crop rotation practices in Malawi; sustainable honey harvesting by Ogiek Indigenous communities, amidst biodiversity erosion through deforestation and challenges to

ancestral lands; the Center for Integral Small Farmer Development (CE-DICAM) in Mexico, which integrates sustainable agricultural techniques to enhance local food security; Soils, Food, and Healthy Communities (SFHC) in Malawi, which uses local Indigenous knowledge and agro ecological methods to improve food security and nutrition in Malawi; and Navdanya, an NGO founded by scientist Vandana Shiva that is involved in the rejuvenation of Indigenous knowledge and culture through biodiversity-based organic farming methods and the development of locally adaptable cropping practices that provide sustainable food resources.

A study on the socioeconomic, environmental, and governing structure pressures on food resources in diverse ecological settings in Thailand demonstrates that appropriately used and adapted TEK could play a significant role in addressing the food security of small rural farmers (Ekarin et al. 2016).

This chapter discusses presentations from talking circle discussions by First Nation members, community-based management and networking organisations, members of civil society, community leaders, small-scale natural food resource industries, students, and academic scholars that were compiled after the second International Coastal CURA Conference. This conference, titled *People in Places: Engaging Together in Integrated Resource Management*, took place in June 2011 in Halifax, Canada. Coastal CURA was a six-year project (2006–2012) and was structured as a community–university research alliance. Partners included First Nations communities, fishery organisations, university researchers, students, and government agencies. It was funded by the Social Sciences and Humanities Research Council of Canada. The project aimed to build knowledge and capacity across the Canadian Maritimes and to support community involvement in managing food resources from coasts and oceans. It is linked to actors supporting the ecological, social, and economic wellbeing of place-based communities by exploring how communities, food resource organisations, and governments could work together to manage coastal and ocean food resources. The project reviewed past experiences and engaged in innovative participatory research of the management approaches of community-led and government organisations across the Canadian Maritimes. The CURA project applied three key strategies: research, capacity building, and knowledge mobilisation. Its defined goals were: to improve the effectiveness of governance of natural/coastal resources; to enhance community capacity to participate in coastal management; to develop a Maritimes network allowing fishers to engage in community-level coastal governance; and to research innovation and the generation of local food knowledge.

The key questions of this chapter are: (1) What key shared issues and challenges in Indigenous environmental governance impact food (in) security? (2) How can North–South dialogue about Indigenous environmental governance initiatives inform policy on food (in) security?

Results

Negotiating a governance system: Links among places, natural resources, culture, and food in Indigenous contexts

Stories from the talking circle particularly emphasised the worldview that different pieces of the biocultural diversity web are linked. Some links among place, food, culture, and natural resources in Indigenous contexts are mentioned in the following quote:

Aboriginal people, I'm learning now, don't live by numbers. They live by concepts like balance, ecosystem. ʔehtsóo was the happiest when he went to a certain place and he found fish. He went to another place and he found moose. Another place and he found caribou, beaver. When he saw that, he was happy because he was part of that, balancing those things. That's what made him happy.

(First Nations talking circle participant Canada)

Some communities are attempting to negotiate a balanced approach to environmental governance in order to secure sustainable food resources. This resonates with earlier research on the interface between human, other beings, place, and space in relation to Indigenous knowledge. For example, Blythe and McKenna Brown (2004) and Morphy (2005) discuss the inherent relationships and links between all life forms and the Indigenous view of humans as one actor in a whole ecosystem. In this view, balance is a key concept. A participant shares a collective East African way of managing food resources:

We do not sell fish. We share. In every coastal community in Kenya, [in] the small-scale fishing communities you visit, you'll find that we share with the whole. We are all one. In our country we call it the spirit of *ubuntu*. We have to care about other people. But why have we lost the way of our forefathers? Why does the tide change?

(Indigenous talking circle participant from Kenya)

The African term *ubuntu* is the belief in a universal bond of sharing that connects all humanity. These Kenyan communities view the fish they catch as a shared resource for the community. However, this view is under threat due to changes in governance and livelihoods (Hoppers 2002). Another quote also emphasises the Indigenous view of the interconnectedness of everything in the universe, including food resources:

I'm making the choice today to walk a Dene path today, a true path, the path of a true human being. I want to be out on the land. I want to be thinking like ʔehtsóo. Harvesting. Teaching. Passing my language on to my grandchildren. ʔehtsóo's worldview is centred on Nėwhehtsıneę, the

Creator. But he never talked about N whehts n . His belief is learning about D r n n , the land, the water, food resources everything in the Universe. The more you learn about this, the closer you are to N whehts n . Everything has to be related and must be treated with respect. If things are not related, then there's a problem. And things have to be alive to build relationships. To respect something, it has to be alive, it has to have its own being. In our language there's no such thing as death.

(First Nations talking circle participant from Canada)

We saw Bear River history in [the] Mi'kmaw and English languages. F. has a wonderful way of relating to this earth, himself, and the creator. He talked about the seven signs in his tepee. I recall six of these: respect, bravery, honour, humility, sharing, and love. He explained how being at the camp teaches our children how to be true human beings. The land teaches us to be human. We listened to some of their music as well and shared ours (I carry an iPod with most of my grandfather's songs).

(First Nations talking circle participant Canada)

A similar idea about guiding signs (as mentioned in the aforementioned citation) is also used in Tanzanian harvest ceremonies:

Four ways are used: south, north, east, and west; spears and fly whisk, *mkia wa nyumbu* [the tail of a wild animal] ... black clothes, special songs; there are women who *piga vigelegele* [sing ceremonial songs].

(Talking circle participant from Tanzania)

Some readings depict humans as external to and separate from nature; in this view, human interactions with nature are based on efforts to dominate it (Anderson 2010). Indigenous environmental governance views humans as a part of the natural world rather than separate from it. This view is common to Indigenous societies around the world (see Figure 15.4) that define biocultural diversity through intense links to the land, culture, and food resources. The ethos of this worldview entails treating all living things, including food resources, with respect given the interrelationships that sustain everything in the universe. The role of language in transmitting TEK (see Maffi 2005) is illustrated in the quotations above and will be discussed in more detail in a later section of this chapter on conflict and resolution strategies. The central role of respect is also mentioned in the context of the governance of forest resources, food, and water:

For example, we spent three years working on a new Wildlife Act for the Northwest Territories. I was with that group. We had four lawyers and all the co-management boards working together on the new Act. All that time I was thinking, 'We can't put these laws into  ehts o's world.' One day somebody said, 'Let's put our Dene concept of respect in the

Act.' Right off the bat, we were told that this wouldn't be possible. And it's true. How can a person be charged for not respecting wildlife or the forest or the water or food resources from the land? The community themselves have to maintain their own principles and laws. That's what self-government is all about. I asked myself, 'Why is it so hard to do this?'
(First Nations talking circle participant)

In some cases, governance of food and land resources by formal governing bodies in the form of agreements, treaties, and joint decisions is problematic:

What is frustrating is that our government is not listening to us regarding the livelihoods around fishing. Nobody listens.
(Talking circle participant from Kenya)

But it's very delicate. You can kill Aboriginal knowledge very easily by using the wrong methodology in the government work with agriculture.
(Talking circle participant from Mexico)

Without doubt, the government doesn't really want to be part of what I prefer to call joint management. They use 'co-management' and actually recognise only advisory processes. My view of joint management is that it should be about jointly making decisions. I don't know if there's any setup anywhere in this country where First Nations are true partners with government. I could never understand why, because they're newcomers to our land, our territories, and our resources. The five First Nations within this region have not been part of land use planning. The land use planning in this region is not totally finished, but you might as well say it's finished, because the government's come and told us they've done all the work. I've always been a rebel and I've always had an issue with the decision-making process, because it has never involved us. I was never any kind of decision maker because the system always made sure that people like myself were out of the process.

(Talking circle participant from Canada)

The hegemonic, unequal dominance between formal and informal (Indigenous) land governance structures is clear in agreements and treaties on land governance. This provides avenues for conflict within communities that could relate to Indigenous land stewardship using local food knowledge and food security. De Sousa Santos (2007) and Gibson-Graham (2006) suggest counter-hegemonic processes, advocating for actors governing land and natural resources to re-engage with activism and tangible recommendations for land governance policy. Formal agreements and treaties should be realigned with a TEK base so they are in tune with communities' ways of governing and managing food resources. These stories and scholars describe

the historical and contemporary governance structures and organisational approaches to land stewardship that have defined and continue to define a contested space within communities. Formal and informal governance of land, marine, and related food resources is often contested. This chapter considers the relationships among land stewardship, governance, and decisions about food systems based on talking circle discussions. The discussion on conflicts will be developed later in the chapter.

Food security, conflict, and threats to TEK

The stories shared by talking circle participants point out some conflicts of interest between Indigenous communities and non-Indigenous fishermen with official fishing licenses. This poses threats to TEK. Hoppers (2002) and Oguamanam (2006) discuss the often contrasted and divided paradigm between formal and informal land stewardship. Indigenous communities' worldview positions them as custodians of the land (see Figure 15.3 & 15.4), while formal governing structures honour formal agreements:

The fishermen and the natives were not cooperating at all. Boats were being burned. Wharves were being burned. In my area, there were a lot of fishermen coming with boats, with their lobster boats inside the harbour blocking the harbours. Sitting inside a boat for two or three days is probably not what those fishermen wished to do. They were going to the taverns a lot and they were getting drunk, and they had rifles aboard. It was getting to be a very trickish situation.

(Talking circle participant from Canada)

Here, the Indigenous worldview of humans as custodians of fishery resources conflicts with the actions of formally licenced fishers. The lack of cooperation could be due to the absence of collaborative processes and frameworks that would enable both groups to use and manage marine food resources. Formal postcolonial natural resource policies and rights regarding the control and management of TEK (Mshana 2002) created changes and then conflicts over communities' access to food resources, especially as licences were required to access communal food resources. This conflict appears in quotes about other countries as well:

I am from the Western Cape of South Africa, and today with a democracy we feel it is worse, as access to our food and livelihoods is cut off by our own government. That is our experience. That is why I have so much interest in what we call in our language 'Indigenous knowledge.' The sharing of cultural practices and beliefs and some lessons my grandparents, aunties, and uncles told me they learned when growing up. This transfer has been completely disconnected.

(Youth talking circle participant from South Africa)

My big concern is that, in the context of South Africa – given the colonial and the apartheid past and the layers of law that have led to marginalisation of coastal communities – along with that has been an erosion of peoples’ customary food practices and also their knowledge systems ... In many instances, fishers have become even more marginalised. Although there are signs of change, and there is new hope, I think. ... It’s probably a rage I have about the lack of respect amongst many in our scientific community for the value of local food knowledge. I want to hear from other people about how one gains the respect of scientists. I’m not using that word in a blanket sense; I’m referring to certain members of the scientific community who are in very powerful positions, who are informing management recommendations or informing government about policies and about management measures about the value of hearing about the knowledge from local fishing communities. I’m also interested to learn how it’s possible to incorporate this local knowledge into mainstream scientific processes.

(Talking circle participant from South Africa)

These stories describe the hierarchical relationship discussed by Dahlström et al. (2006), which dictates and is closely related to the power of the preferential right of interpretation. This includes what is considered appropriate knowledge, as well as access to customary food practices and their related knowledge systems about the land and governance of natural resources. Talking circle participants’ views that knowledge about community-based stewardship was not treated with respect, placing TEK in a hierarchical relationship with formal governance. This view is in line with Beyer (2009), who discusses how societies evolve into cultures that devalue their own Indigenous knowledge.

Participants described some of the threats to TEK:

The *Namgis* have a traditional territory of about 2,800 square miles that includes the largest watershed on Vancouver Island ... [It’s] famous for its sockeye salmon, the Nimpkish River, and for the height and the breadth of the trees. It’s been horribly abused, as have been most of the watersheds on Vancouver Island. Since 1950, there have been sixty million cubic meters of wood taken out by Western Forest Products.

(Talking circle participant from Canada)

One issue that we’re working on is fish farming. In the territory of the *Namgis* and the surrounding neighbours, there are thirty Atlantic salmon open net cage fish farms with a million fish each. Two and a half kilograms of faeces out of each fish in its lifetime. That stuff wafts, fills up clam beaches. The mooring buoys for the fish farms keep people away from places where they’ve fished for thousands of years. The scientists on both sides build up their cases.

(Talking circle participant from Canada)

These quotes describe the threat to TEK posed by activities related to fish farming and forestry. These could also be viewed as threats to communities' food security, specifically to their access to marine food resources.

Conflict mediation, consensus building, and resilience

These stories describe conflicts between Indigenous and non-Indigenous communities and between communities and governing structures. However, emerging strategies for mediating conflict over food resources were also described. One example is the adoption of the talking circle model to resolve tensions and conflicts over marine food resources:

With the ever-increasing tensions and violence between Indigenous and non-Indigenous fisher people over the lobster fishing during that period, F. was starting to think that he should resign as Chief. ... Later, outside people wanted to know what happened. They all looked surprised when they were told that the group had not talked about fish – they had talked about everything else except fish. Amazingly, they seem to have resolved the issue, without talking about it. And so, without realising it, F. received the gift of the talking circle, our native way of having meetings.

(Talking circle participant from Canada)

I mean, there was a conflict going on that was fishery related. Tensions were rising in our area. A few days later there was a secret meeting with the Chief from Acadia First Nations and another Chief and five fishermen's representatives.

(First Nations talking circle participant)

Regarding natural resource management, Aboriginal natural resource management in Mexico varies a lot from region to region – the land holdings that we have, the form of tenure that we have in Mexico. We have two forms of land tenure and that is *ehildo* – is common holding – and also *comunidad* – not in a geographic meaning but *comunidad* as a form of land tenure. In these common holdings, working food agriculture is like community-based management. They decide on what they want to plant and about the [inaudible] harvest as well. Regarding all their resources – for example, rain forest – some of the common holding ... require permits for commercial logging. Some others, they're small size. Nearly 5,000 hectares. They don't have permission, and they only exploit the rain forest and gathering of non-commercial forest food products.

(Talking circle participant from Mexico)

However, in 1994, when we secured our Interim Measures Agreement with the government of British Columbia for co-management of land and resource use and operations in Clayoquot Sound during treaty

negotiations, that was joint management. We have responsibilities in ecotourism, forestry, energy, and other sectors. We're busy every day. Some days we cry almost at the lack of respect and the barriers placed in the way of community-based land stewardship. Every day, whether we're challenged or not, luckily, there's also a lot of laughter. It's addictive, this work, because it's the real work. It's bringing power back to place.

(First Nations talking circle participant)

The narratives of the participants propose learning, communicative strategies, and policy recommendations that could inform active community wellbeing through engagement in food resources and governance practices (Berkes 2009). The development of strategies to build relationships is the foundation of Indigenous governance and land stewardship (Frawley 1999). This could create space for developing models of food security that could complement other official models and address wellness in communities.

These examples of emerging forms of collaboration among communities around marine, land, and food resources demonstrate the struggle which has sometimes characterised relationships between non-Indigenous and Indigenous Peoples, as discussed in Fatnowna's (2002) research on Aboriginal communities in Australia.

Talking circle participants' stories also resonate with the work of Berkes et al. (2017), who discuss the interrelatedness of different parts of the environment and propose that the key to sustainable development is in balancing socio-ecological systems. The idea of a balanced ecosystem was referenced frequently during the talking circle. It was mentioned in reference to access to fish, caribou, and moose as food resources (e.g., Figure 15.3). In this discussion, joint agreements coupled with resilience approaches that place reconnecting with the land and the revitalisation of land-based activities at the forefront were proposed.

Indigenous food knowledge in an international dialogue

Stories from the talking circle unveil a form of global dialogue between Indigenous and non-Indigenous Peoples. Some scholars argue that TEK is inadequate for guiding sustainable harvesting (Mollel 1994). This is partly because they consider TEK dated and unable to adapt quickly to rapid global ecological change. The dynamic and non-static nature of TEK has, however, been widely discussed (Fatnowna et al 2002; Gibson 2002; Ekarin et al. 2016). Berkes (2009) argues that the processes of acquiring and transmitting Māori traditional knowledge about food security are essentially similar to those used in Canada. Berkes' research argues that debating the merits of 'science' versus 'traditional knowledge' is a waste of time and effort. Instead this debate should be reframed as a dialogue and partnership between science and traditional knowledge. This chapter argues that approaches to addressing food security through governance and communal management are fundamentally similar around the globe.

The following quotations speak to the global nature of these challenges and opportunities:

I learned that there are many Indigenous People in other places who think the same as we do in the Sahtu Region of the Northwest Territories. When you experience this, you realise that ours is truly a global community. We have to talk to a lot of people, other First Nations across Canada and the world, to look for solutions to our own challenges regarding access to land and natural resources.

(First Nations talking circle participant from Canada)

Interpretation of our common world system is a complex task. It's easier for me to use both systems. Now we're saying, 'Let's put it on paper.' And we can make one more step of taking stories and making them into policies, using our languages, our concepts. That would be a huge step forward for Indigenous communities. That's one of my goals.

(Talking circle participant from Ecuador)

The stories in the talking circle highlight the importance of Indigenous and non-Indigenous Arctic communities' engagement with communities in other parts of the world. The stories advocate for and encourage an exchange of knowledge and approaches to Indigenous governance of food systems. Perspectives are emerging that emphasise the national and global nature of the challenges for Indigenous communities around food and natural resource governance.

My previous research (Ouma 2013, 21) discusses the historical and contemporary globalisation processes that influence governance structures and organisational approaches to land stewardship.

Discussion, perceptions, and recommendations

This chapter presents arguments supporting the need to reverse the ongoing erosion of biocultural diversity and knowledge associated with its governance. One way to do this is by re-engaging and realigning local and regional agreements with Indigenous knowledge of the environment and governance. The chapter discusses local Indigenous knowledge of and practices related to food. This food knowledge is embedded in knowledge of the environment and of biocultural diversity and in local governance structures (Figures 15.2 and 15.3). The chapter suggests that engaging efforts that embrace Indigenous cultural practices related to food systems, food security, and governance could help engage and inform mainstream official policies around the challenges of food (in) security in the Arctic and beyond.

Lessons learned in one region could be used to strengthen Indigenous environmental governance of food security elsewhere. Indigenous and non-Indigenous Peoples in various geographical locations have similar approaches and face similar challenges to environmental governance that



Figure 15.2 A seasonal farming prognosis station used to provide information on which crops to plant and an estimate on the season's prognosis for harvesting for rice and sorghum. Munguwapili (village), Mwanza Region, Tanzania. Photo by the author.

impact food security. The stories shared in the talking circle advocate more North–South dialogue, something that could build and expand relationships and networks to create a truly global community to face global challenges. This approach could help include and uphold Indigenous knowledge of food resources in policies related to food security.

The importance of the relationship between a healthy environment and physically active ways of accessing food illustrate the strengths of Indigenous Peoples, who use traditional knowledge and governance systems to act as stewards of the environment (Figure 15.3 & 15.4). This stewardship ensures sustained access to food, which in turn guarantees communities' food security (Figure 15.3).

As mentioned during the talking circle discussions, the issues discussed there could support and inform similar forums in the future, which could then build on this shared, collectively created knowledge. Participants also expressed this hope when consenting to have their oral contributions translated into textual proceedings. Their messages might help strengthen the case for traditional knowledge in general and traditional food knowledge specifically as a valid, meaningful basis for the wise governance of natural resources and food systems within and beyond Indigenous communities and their traditional territories around the globe. This advocacy could contribute to policy in the current discourse around food (in) security. Together, the understanding of the interrelatedness of all components of the environment and the belief in the power and spirituality of nature have enabled

Belarewilé Gots'é ʔekwé - Caribou Forever

NOTICE TO HARVESTERS

The Délı̨nę community has ended the harvest in the ʔekwé zone. There is strong support for **alternative harvesting** (moose, muskox, ʔodzı, fish, ptarmigan) and **sharing** among families and communities.

Please respect Délı̨nę's "Caribou Forever" Plan!



For more information, contact Ed or Ted at the Délı̨nę ʔehdzo Got'ı̨nę office.

Figure 15.3 This is an example of community governance in the Canadian Arctic. The community of Délı̨nę, which has recently achieved self-governing status, has also developed Canada's first caribou conservation plan. This has implications for food security. Some years ago, the community of Délı̨nę was recognised as the steward of the world's first Indigenous-sponsored international biosphere reserve. This is one of the examples of Indigenous environmental governance that were discussed at the 2011 People in Places Indigenous talking circle.

communities worldwide to live sustainably in their local environments for millennia. Naturally, this includes secure access to food.

To address the challenges of access to food resources and dilemmas around the governance of land resources that are now evident globally due to the loss of biodiversity, strategies based on TEK – which exists in some form all over the world – should be recognised and applied. This could help humans create a much better relationship with our environment and therefore a more sustainable way to manage food resources and food security (Figure 15.4).

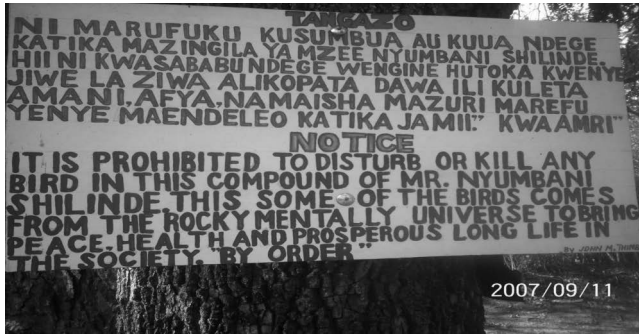


Figure 15.4 An example of local traditional governance of bird life. Situated in the Bondo Ward Missungwi District of Mwanza Region, Tanzania in a village food clinic and hospital run by Shamans. This example illustrates how messages from the talking circle on Indigenous governance and sustainable stewardship of natural resources are relevant to a global discourse. Photo by the author, 2007.

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