



Implementation of the Learning Circle: Local Food to School Initiative in the Island Communities of Haida Gwaii, British Columbia, Canada—a Descriptive Case Study

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ABSTRACT

Background: Indigenous communities in Canada are concerned about long-term food sovereignty and the reclamation of traditional food-related skills among their people. Learning Circles: Local Food to School (LF2S) was an innovative community-based project that worked to promote multisectoral partnerships, focused on food. Guided by a facilitator, the Learning Circle (LC) brought together interested community members to plan and implement activities aimed at enhancing access to local, healthy, and traditional foods for school communities.

Objectives: The article describes the context, process, and food-related outcomes of the LC in Haida Gwaii (HG), British Columbia, Canada and evaluates perceptions of the transition in local food systems, food literacy, and community capacity associated with the LC.

Methods: The sources that were gathered between 2016 and 2018 included annual semidirected interviews with community members and the Learning Circle Coordinator (LCC) ($n = 24$), process reporting (e.g., reports, conference calls, food sourcing and tracking data) ($n = 62$ documents), and photographs ($n = 75$). Data were analyzed thematically.

Results: HG has a rich food environment and a vibrant local and traditional food culture. A variety of local food-related activities had been taking place before the launch of the LC in 2013, and by 2016 the initiative was firmly established. Between 2016 and 2019, activities in HG focused on schools (e.g., sourcing local, healthy food and developing traditional skills through schools) and pioneering local food pantries. Participants valued increased access to local and traditional foods and opportunities to build youth knowledge and skills. Noted successes of the LC process included transitioning to Haida leadership and fostering relationships.

Conclusions: The inherent flexibility of the LC model means that communities can prioritize activities of interest. The evolution of the LC model in HG is an inspiration for other communities working to enhance food sovereignty. *Curr Dev Nutr* 2022;6:nzac090.

Keywords: local and traditional food, community-based participatory research, school food programs, dietary intake of adolescents and youth, Indigenous health

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Abbreviations used: CBPR, community-based participatory research; CHN, Council of the Haida Nation; CIHR, Canadian Institutes of Health Research; CPAC, Canadian Partnership Against Cancer; GKNS, *Gid Galang Kuuyas Naay* Secondary School; GTNS, *Gudangaay Tlaats'gaa Naay* Secondary School; HFC, Xaayda/Haida Foods Committee; HG, Haida Gwaii; LC, Learning Circle; LCC, Learning Circle Coordinator; LF2S, Learning Circles, Local Food to School; NSC, Nourishing School Communities; OCAP, ownership, control, access, and possession; SHN, Secretariat of the Haida Nation; SNES, *Sk'aadgaa Naay* Elementary School; TE, *Tahayghen* Elementary.

Introduction

Place and our relationship to the land defines who we are, what we notice, how we live in the world and how we live with each other. Haida Gwaii is situated in the Pacific Northwest, as a series of 150 islands, includes bogs and lowlands, snow-capped mountains and cliffs that extend to the ocean, long stretches of sandy beaches and areas that commonly receive 10m (35 ft) waves. It is a land between sea and sky where the worldview that “everything is connected to everything else” means there is a symbiotic

relationship between humans and non-humans, natural and supernatural beings. The place of Haida Gwaii reminds us that we are all connected. (1)

Indigenous knowledge and Western science can be complementary in their approach to promoting health and well-being. In contrast to the traditional focus of Western science on physical health, “health” and health promotion for Indigenous communities are based on the concept of wellness, a balance between physical, spiritual, emotional, and mental health (2–5). For Indigenous peoples, food is intimately tied

to holistic well-being and connection to the land; the opening quote illustrates the context of this connection as described by the Haida people.

Among the ramifications of colonization within Canada are the loss of connection to traditional foodways for many Indigenous people and their disproportionately high prevalence of chronic disease and its determinants (6, 7). The causes of chronic disease are deeply rooted and complicated (8); programs to tackle such problems therefore require many elements, employ many people, involve many intertwined relationships, and often target >1 level of the system. Previous research shows that a clear mandate, trusting partnerships, and engagement with all relevant stakeholders before and during the intervention are essential hallmarks of a successful program (9, 10). Fundamental to the promotion of wellness and reduction of chronic disease and its determinants among Indigenous communities is a return to the time-honored culture of healthy local and traditional foods (4, 11).

Research and related community health programs involving Indigenous people in Canada have in the past been carried out from the perspective of Western scientific thought, with little regard for the viewpoint of the communities involved. Indigenous communities have felt “researched” rather than treated respectfully as community partners and end-users of the study results or program goals (12). Many communities have not been given access to their own data, and in some circumstances, study results have not been shared (5, 13, 14). In addition, the over-researching of some communities has led to “research fatigue.” In the words of one community member: “we’ve been researched to death, and need to be researching back to life” (15, 16). In Canada, the First Nation principles of ownership, control, access, and possession (OCAP) have been developed as a response to inappropriate research practices carried out in the past, and pertain to all aspects of the research process. These principles were a helpful guide to enable both community members and researchers in the current project to engage in a participatory process with shared ownership over group data (14).

The Reconciliation Pole (2015–2017) by Haida artist, James Hart, honors a time before, during, and after Canada’s Indian Residential Schools. The depiction of the canoe and longboat travelling forward, side by side, in the “after” section of the pole is described as follows: “The canoe represents the First Nations and governances across Canada. The longboat represents Canada’s governances and Canadian people. The symbolism respectfully honors differences, but most importantly displays us travelling together side by side” (17). This represents the respectful and reciprocal relationships between Indigenous and non-Indigenous participants that we aspired to through our collaborative work. Using this approach, the goal of the Learning Circles: Local Food to School (LF2S) initiative has been to enhance holistic health in partnering remote Indigenous school communities like Haida Gwaii (HG).

The Learning Circle (LC) approach is a community engagement practice with a collective aim to promote partnerships between community members with a common interest in food. The model stemmed from the “learning labs” of the Farm to School programs that began in the United States and transitioned to Canada under Farm to Cafeteria Canada (18). The approach began as a strategy to enhance the provision and inclusion of local healthy food in schools. Establishment of the model in HG, British Columbia was promising (19), hence, the current project aimed to explore the sustainability of the model and potential for growth in local food systems. The scale-up of the model to 3 other

diverse First Nations communities was also a part of the larger project. This specific article describes the food-, nutrition-, and health-related transitions (context, process, activities, influences, outcomes) of the LC in the exemplar community, HG, British Columbia, Canada, from January 2016 to December 2018. This case study describes the context, process, and food-related outcomes of the LC in HG and evaluates perceptions of the transition in local food systems, food literacy, and community capacity associated with the LC.

Methods

Study design

This community-based participatory research (CBPR) case study (20) was conducted using multiple methods from different perspectives to deeply understand the community context. With this approach, the strengths, resources, and knowledge of the community are foundational, and the community is consulted regarding what they perceive as challenges (20, 21). CBPR methodology gives community members agency, and control over their own data, including data collection and interpretation (22, 23). The context of the project with HG, including location, past community food system projects, governance, and a history/timeline of the project, was described in consultation with key community partners and voices.

The LC.

The LC was a community-based participatory action initiative that aimed to build relationships and partnerships within and between communities (19). The name “Learning Circle” was preferred by Indigenous communities and was used to reflect the cooperative nature of the practice, and the importance of grounding the practice in local knowledge, traditions, and culture.

For the LF2S initiative discussed here, partnerships were generated around a shared interest in increasing the availability, acceptability, and consumption of local, healthy, and traditional foods for school-aged youth and adolescents in each community.

A Learning Circle Coordinator (LCC) was employed and given responsibility to initiate community meetings in which matters relating to local, healthy, and traditional foods were discussed. Partnerships with key community organizations were developed and community members with an interest in local food were invited through formal and informal networks. Priorities for that community were agreed upon over the course of a workshop (usually day-long), needs and activities were discussed, and goals set. The core group met between 2016 and 2019 to re-evaluate the aims of the group and discuss progress.

Ethics

Ethical clearance was received from the Office of Research Ethics at the University of Waterloo, as part of the evaluation activities for the LF2S study (ORE# 30819). An initial spirit of collaboration document written in plain language was given to the LCC by research partners to share with community leadership and adapt, as appropriate. This document covered how OCAP was integrated into the project and plans for knowledge sharing. An agreement, “*Isda ad dii gii isda (S) - Isdaa ‘sgyaan diiga isdii (M)*” Spirit of Collaboration Protocol, was established with the University of Waterloo and the Secretariat of the Haida Nation (SHN)

in 2018 to demark ethical codes and principles governing the conduct of research activities. The SHN oversaw research activities and administered local project finances. For this, the Council of the Haida Nation (CHN) communications department provided support in reviewing, revising, and finalizing the collaboration agreement. The Xaayda/Haida Foods Committee (HFC) transitioned to a central leadership role within the project, including support for the selection of the LCC and local research assistants and review of research plans, processes, and communications. Informed consent was obtained for all interviews and images of individuals appearing in photographs or videos.

Data sources and data collection

Multiple sources were analyzed to describe the context and the story of change resulting from the work of the LC; evaluation methods were guided by community priorities. Interviews were conducted annually with LCCs, key community members, and project partners using a semistructured interview script. Participants were purposively selected based on their connection with the initiative (for example, attendance at the annual project gathering for the larger project), or by an arms-length research assistant local to the community who was hired through the HFC, and were recruited by email or in person. Interviews took place in person, by phone, and on Skype, lasted between 25 and 60 min, and were carried out, in English, by the same interviewer (LWM) or, in the case of interviews with community members, a trained, local research assistant. All interviews were audio-recorded with the permission of the interviewee, and signed and/or verbal consent for use of the data in future publications was obtained before the interview took place. Participants were not compensated and had the opportunity to withdraw from the interview at any time and could also decline to answer any question that they wished.

Written documentation included notes taken during conference calls between project partners, and emails, which took place and were exchanged throughout the duration of the LF2S initiative. The LCC reported after the LC describing the participants, events, and action plans generated by the meeting. Food sourcing data (including receipts), menu plans, activity and other tracking data, timesheets, journals from the LCC, teleconference minutes, and descriptions of workshops/food skills classes were collected throughout the initiative and emailed to the research team at the University of Waterloo. These documents also contributed to annual reports to the funder [Canadian Institutes of Health Research (CIHR)] and partners.

Digital photographs and videos were taken by LCCs, community members, and the research team at each of the 4 communities throughout the initiative.

Data analysis

All interviews were audio-recorded and audio files were transcribed verbatim; pseudonyms were assigned to each participant immediately after data collection to protect anonymity and member checking supported methodological rigor. Transcripts, field notes, reports, and all other written documentation, including photographs, were reviewed and coded using the following steps. A draft coding framework was developed using activity tracking documents and early participant interviews. These codes were established using both a deductive approach (exploring the data for themes relating to wider project research objectives) and an inductive approach (observing themes emerging from the

data); the codebook was verified by both in discussion with the project research team. Data were then coded line-by-line [reports of LCC activities were coded and summarized by 1 coder (BZ), and coding of interviews was carried out in duplicate (LWM and RV)] and analyzed for emerging themes by comparison across the documentation. A selection of interview transcripts was returned to the community for member checking. NVivo® 12 Pro (QSR International) was used for data processing and analysis. The large variety of data sources included in this study allowed for triangulation of data, contributing to methodological rigor (24–26).

Owing to the COVID-19 pandemic, main themes were discussed with the communities remotely, as part of sense-making of the themes that emerged during analysis.

Context

Study setting.

The archipelago of HG is located 100 km west of the northern coast of British Columbia and comprises >200 islands totaling ~9700 km² (27). The 2 largest islands are Graham Island (*Kiis Gwaay*) and Moresby Island (*T'aawxii Xaaydaa Gwaay.yaay linawaay*) and there are 2 general sections: north and south. The islands are remote, 720 km north of Vancouver, British Columbia, and accessed only by ferry or airplane; the closest city to HG is Prince Rupert, an 8-h ferry ride. The population of HG is ~5000 people with the majority living in the main communities of Masset, Village of Masset, Village of Port Clements Skidegate, and the Village of Queen Charlotte (27).

The islands of HG are located on the traditional, unceded, territory of the Haida Nation, which encompasses parts of southern Alaska, the archipelago of HG, and its surrounding waters. Haida people make up ~50% of the islands' population with the majority of the remainder of West European descent. The Haida Nation hold the cultural and intellectual property rights of the Haida people. The CHN is the governing body of the Nation and upholds the principles embodied in the Haida Accord as enacted by the hereditary chiefs, CHN, Old Masset Village Council, and Skidegate Band Council (27). The SHN manages the programs and staff of the Haida Nation and receives and administers funds on behalf of the Council.

HG makes up BC School District #50 and has 6 schools: 4 elementary and 2 secondary schools. In addition, HG has a Band-run school called Chief Matthews School, and an alternative school called Living and Learning.

There is an established and vibrant local and traditional food culture in HG that is highly seasonal, and foods traditionally eaten in this region include seafood such as fish (e.g., halibut, salmon) and shellfish (e.g., Dungeness crabs, cockles, razor clams), wild meats (e.g., venison), and wild plant foods such as berries, seaweed, wild mushrooms/chanterelles, and sea asparagus. Grocery stores on the islands are normally well stocked, and several farmers and growers (including some Mennonite farmers) provide a wide range of food for the local community; vegetables such as brassicas, potatoes and other roots, and hearty greens are grown in local gardens. There is a long history of gardening on HG (28).

Poverty and other systemic barriers to health were identified in interviews as general challenges that affect the communities on HG, and nutrition-related chronic illness was recognized to be a health issue among all age groups (29). A chronic medical condition was reported by



FIGURE 1 Logo for Local Food to School project in Haida Gwaii.

12% of school students aged 14–18 y in 2018, although 80% of school students reported their health to be “good” or “excellent” in the same survey (McCreary Centre Society via Joanne Yovanovich, Acting Superintendent of School District 50, 2018)..

LC, 2013–2016.

Using the name LF2S, an LC began in HG as part of the Nourishing School Communities (NSC) initiative 2013–2016 [funded by the Canadian Partnership Against Cancer (CPAC)] and under the CPAC funding, stakeholders came together for 3 LCs: May 2014, November 2014, and May 2015. The final NSC report was published in 2017 (30). The current evaluation (2016–2019), funded by CIHR, began as an expression of interest to evaluate scale-up of the LF2S project, piloted in HG, to additional First Nation contexts. Representatives from HG, 3 other Indigenous communities, and various interested partners met with the research team at the University of Waterloo in October 2014. Additional funding supported a gathering of community representatives and partners in HG, in July 2015, to collaboratively develop the project proposal. As part of the formative work leading to the submission of the CIHR proposal, a Haida community member was hired in 2015, through the University of Waterloo, to conduct 6 interviews with community members relating to the existing LC. Haida community members who were interviewed noted that although the Haida benefited in some ways they did not actively participate in the LC or its activities, and did not see the LC as “their” initiative.

The pilot initiative from 2013–2016 brought together schoolteachers, administrators, and those involved in sourcing, growing, processing, and preparing foods. Although there was some Haida involvement and the focus was on island schools which serve predominantly Haida students, the LC mainly brought together non-Haida members of the community. The goals of this pilot initiative ranged from building capacity and ensuring the economic stability of the program, to integrating wild harvested, foraged, and locally preserved food into school menus, e.g., the donation of deer culled through the “Restoring Balance” (“*Llgaay gwii sduihlda*”) project to community food programs (31). The logo of the initiative (Figure 1) shows a Haida food basket

and was chosen to illustrate these goals. A food-safe meat processing system was established to enable hunted meat to be donated to the project. A local food pantry was established in the north end of the island at the end of this initiative (2015), through funding from the Gwaii Trust, that aimed to increase year-round access to local foods by providing a “local food hub” where food is purchased or otherwise received (i.e., donated), processed, and stored for distribution to schools and other participating public organizations. Not only were foods stored at this pantry, but it became a community focal point for field trips and opportunities to learn about traditional, local foods. Further funding for a pantry in the south part of the island was received in early 2016.

Results

Case sample and source documents

Table 1 lists the source documents available and analyzed for the process and outcomes evaluation of this case study.

LC initiative 2016–2019

With approval from representatives of the SHN, the LCC hired by the NSC initiative continued in the role of LCC for the CIHR-funded initiative, beginning in March 2016. An LC advisory group called the HFC was formed in November 2016. It was comprised of Haida representatives and leaders known for their connection to local foods, including representation from the school board, and aimed to support greater involvement of the Haida in the LC initiative, and to ensure that appropriate Haida protocols were adhered to when it came to food being gathered, prepared, and served. The HFC also provided direction regarding programming and the evaluation process with respect to Haida laws and protocols.

Over the period from 2016 to 2019, priority activities from the previous LC continued and 1 community-wide LC was held, in November 2017. Attendees of the LC included the LCC, the community dietitian, the local food pantry coordinators (north and south), members of the HFC, schoolteachers, other school staff, famers and other growers, hunters, and Elders.

The aim of the LC for the new, CIHR, phase of funding, was to integrate Haida leadership into the LC to ensure alignment with Haida values and current priorities of the LC group. The vision of the LF2S program, developed during an LC, was “To collectively shift culture on the islands back to a healthy life—centered on our connection to locally grown, seasonal food by growing, gathering, harvesting, prepar-

TABLE 1 Source documents

Source category	Sources/respondents, <i>n</i>
Interviewees/informants	20
Interviews	24
Photographs	75
Activity tracking reports	10
Learning Circle reports	1
Food sourcing tracking data	29
Newspaper articles	5
Meeting minutes	17



FIGURE 2 Artwork illustrating the integrated nature of food and food culture in Haida Gwaii, based on a presentation by Jenny Cross, Haida knowledge keeper.

ing, preserving, eating and sharing.” In addition, the following goals were decided upon by the participants of the LC in HG as a focus for the new phase of the project, and the artwork shown in **Figure 2** was created to illustrate the discussion:

- 1) Support meal programs in schools 5 d/wk.
- 2) Support sustainability of both a) HG food environments/sources and b) the LF2S initiative.
- 3) Support access to Haida traditional and locally farmed foods through greater coordination, communication, and culturally appropriate ways of growing, harvesting, preparing, and trading among schools and beyond.
- 4) Promote youth engagement and leadership in LF2S programming; bring youth and Elders together to support knowledge sharing around food and stories.
- 5) Support curriculum development about traditional and other local foods and food literacy through workshops and mentorship opportunities in schools and community.
- 6) Support collaboration among all island community organizations through public outreach, sharing resources, and learning culturally appropriate food practices and skills.

Achievement of the LC goals required securing implementation funding; a total of CAD \$96,200 was acquired between 2016 and 2019. *Gudangaay Tlaats'ga Naay* Secondary School (GTNS) received money from Mazon Canada in 2017 and 2018 to help pay for school food, and 3 schools received salad bar funding in 2017 from Farm to Cafeteria Canada: *Skadga Naay* Elementary School (SNES), *Gid Galang Kuuyas Naay* Secondary School (GKNS), and GTNS. In addition, Farm to Cafe-

teria Canada’s “Sustain Farm to School in BC and Ontario” provided funds as a part of a cluster grant to support and sustain Local Foods to School activities in all HG schools for a 2-y period (2016–2018). Further money was received from Farm to Cafeteria Canada to continue the work into the 2018–2019 school year. Whole Kids Foundation donated funds to develop garden beds at *Tahayghen* Elementary (TE), and in 2017, Gwaii Trust Society, a local grant organization, funded 2 part-time Pantry Coordinator positions.

Activities

The work of the LC in HG focused on 2 main areas: the local food pantries and work in schools. Within each of these areas a variety of activities took place, which will now be described.

Pantry activities.

One of the outcomes of the NSC LC in 2013–2016 was the establishment of 2 local food pantries: 1 for the north end of the island and 1 for the south. The aim of the pantries, as articulated in a local newspaper, was to increase year-round access to local foods by providing a point of focus where local food is purchased or donated, processed, and stored for distribution to schools and other participating public organizations (32).

During the period of CIHR funding (2016–2019), the local food pantries supported schools and community organizations to source local food, coordinate local food learning, make connections, create local food curriculum, support meaningful learning activities, and minimize food waste. The pantry implementation team included the community dietitian, the LCC, and 2 local food pantry coordinators. The pantries

TABLE 2 Local food purchases, pantries 2016–2018

Food item	2016	2017	2018
South Island local food pantry			
Berries and fruit	47 kg	77 kg	88 kg
Vegetables	76 kg	16 kg	9 kg
Meat	132 kg	97 kg (plus seafood)	54 kg
North Island local food pantry			
Berries and fruit	120 kg	109 kg	116 kg ¹
Vegetables	122 kg	318 kg	111 kg ¹
Meat	—	73 kg	151 kg ¹
Eggs	—	15 dozen	—
Soup stocks	185 L	220 L	—

¹Recorded January–July 2018.

were heavily involved in building capacity within the community by organizing workshops, field trips, and garden activities in addition to preserving, storing, and distributing seasonal purchased and donated food (Table 2). The pantry purchased foods from suppliers such as local farmers and sold foods (CAD ~\$5800) in 2017–2018. The pantry foods were dominantly sourced by local schools and the secondary school culinary arts program, although other recipients were the hospital, adult day programs, and children's summer camps. The pantries also supported hands-on learning and accessing traditional and local foods in schools; they worked directly with school staff, including cooks, at the north and south ends of the island to find out what they needed to support the vision of including more local and traditional foods in their schools.

Workshops focused on food skills (e.g., fruit and vegetable, and meat and/or fish processing) (Figure 3), as well as gardening, family dinners, and wild harvesting. The overall number of events ranged from 5 to 15/y (2016–2018) and the attendance at workshops ranged from 184 to 313 participants and 154 and 242 youth. These work-

shops involved a high number of local partner organizations (range: 12–13).

Field trips in both the north and south end pantries focused on farms and fishery visits, harvesting traditional foods (e.g., digging up razor clams), and some outdoor cooking. The numbers of field trips increased from 3 to 7 events from 2016 to 2018 and increased from 39 participants (31 youth) in 2016 to 110 participants (71 youth) in 2018. The field trips were connected mostly with the local schools and day care centers.

Garden activities remained steady over the 3 y with committed involvement from 2 elementary schools and 10 partner organizations. Approximately 10–12 events were held per year.

Food and food skills in schools.

In schools, the work of the LC focused on the provision of salad bars at lunchtime across a number of schools, and other, school-specific activities such as breakfast smoothie programs, kitchen equipment purchases, and gardening/skill-based activities. Gardening activities involved a large proportion of students in the schools and included



FIGURE 3 Images from field trips and food skills workshops in HG. Clockwise from top left: children searching for shellfish on a beach; canned salmon; processing dried seaweed; a crab; processing smoked salmon. Photos courtesy of the community of HG. HG, Haida Gwaii.

greenhouse gardening, outdoor raised beds, and other outdoor gardening activities. Schools promoted gardening by teaching students about growing plants from seeds and caring for plants. Skills workshops were held in schools: for example, fish filleting or pickling (beets).

Salad bars. Four schools (GTNS, SNES, GKNS, and TE) ran a free lunchtime salad bar initiative for students, once a week for 10 wk in the 2016–2017 school year, and for 20 consecutive weeks in 2017–2018. Funding was received from Farm to Cafeteria Canada for the initiative to continue into the 2018–2019 school year but the frequency of salad bars offered for this time period was not recorded. These schools offered a choice of ≥ 3 fresh fruits or vegetables with a target of including $\geq 20\%$ local ingredients. Offerings in salad bars included food grown and harvested on school grounds; carrots/turnips/greens, etc. purchased from the pantries, local farmers, and traditional berry harvesters; and school-made salad dressings, including students in their preparation when possible.

Other school activities. Port Clements Elementary School purchased equipment and hired a coordinator to offer healthy local breakfast smoothies made with local berries to students 2 mornings/wk (2017). A number of schools put on family nights where families were invited to enjoy a meal of local food and participate in student-led food-related activities. Other schools purchased equipment such as kitchen appliances and gardening equipment, or went out on field trips such as seaweed harvesting.

A teacher in GTNS was an example of a local champion and kept records of the activities he took part in with his students. Between February and June 2018, he organized 49 garden activities (i.e., planting, composting, maintaining the gardens and hydroponic towers), 22 food preparation activities (i.e., butchering deer), and 9 community activities (i.e., youth–Elder activities such as bringing wood, or helping in gardens).

To support curriculum development, a Haida-language resource called “*Tang Gwan Siiwaay Guu Ga Taa is is*” (Seasonal Ocean Foods) was created for use in schools. The resource had both a poster and a book component, and was produced in 2 dialects: 1 in Skidegate Haida dialect and 1 in Old Massett Haida dialect.

Lessons learned

Good things happen when you start something. (LC participant)

Four main themes relating to the story of the local foods emerged from the data in HG.

Increasing access to local and traditional foods.

Even though “local” food was considered an inherent part of the initiative with the term being built into the project name, “traditional” food was discussed more frequently as time passed. The connection and direction of the project toward Haida values and leadership were acknowledged in this way:

The hospital is starting to serve traditional foods. Before they were serving foods that came all the way from Toronto in packages. We didn't like it when food was coming all the way from Toronto. Traditional foods are healing for our people. (Community Elder, 2018)

When traditional foods are served, it's soul food. You go “mmm” when you eat and it nourishes and feeds your spirit and makes you stronger. (LC participant)

Local Indigenous culture and traditions featured highly in these interviews and emerged as a theme. The importance of traditional knowledge and its transmission from one generation to another was discussed by many interviewees:

Traditional foods are our identity. (LC participant)

[I am] proud of the work we are doing at the school, making healthy food “cool” working for pride in the culture. (LC participant)

The richness and variety of the food supply and existing food culture in HG were acknowledged and described by many interviewees and in diverse data sources. The privilege of living in such an environment, plus the opportunity it presented, was discussed; for example, the bounty from the sea and the large number of community members of all types having some connection to food:

When the tide is low the table is set. (Late Dempsey Collinson, Chief Skidegate) (33)

The rich cultural traditions of the Haida people were seen as being priceless and thought to enhance health within the community:

Our food is our medicine. (Ada Yovanovich)

Take only what you need. (Haida Law)

A large proportion of the activities of the LC in HG revolved around providing more local and traditional foods to children in schools, to hospital patients, and to community members. More local and traditional food was incorporated into school menus, i.e., the high school students had a wider variety of locally sourced proteins served such as venison and halibut, not just salmon. There was a “grab and go” snack option for the high school students also, such as prepared fruit and vegetables. The ability of the community in HG to apply for and receive funding was critical to these programs going ahead, as was the receipt of donated food from local Indigenous hunters and farmers. LC participants took an active role in getting food into schools, whether this meant chopping vegetables for school meals, donating food, or helping with the garden:

One of our goals for today is to review past goals and visions—are they still relevant? Are local foods cost efficient, enjoyed, and easy to use... Do they strengthen traditions and connection to land/sea, and can we figure out ways to incorporate them into curriculum? (LC participant—as part of an introduction to the 2017 LC)

Despite the remote location of HG, local grocery stores were considered to be well stocked and easily accessible, and there were a number of farmers' markets. The impact of the seasons could be clearly seen as the activity shifts in the summertime when the majority of time is spent gathering and processing food. Outcomes of this included indications of behavior change with teachers perceiving healthier food choice habits and the apparent link of consumption of healthier food with improved behavior in class:

So, I think the kids are eating more healthier, now, with all this good food that is presented to the school from this farm to school program. (Community Elder, 2018)

An economic impact on the community because of investment in local and traditional foods was also noted:

As idyllic as we make Haida Gwaii seem, there is also poverty here and health problems. So, giving back means that you fund the positions that support harvesting from the land, and you bring meaningful work to the community. Poverty and unemployment is less of an issue when you have a robust local food system. The local hunters, farmers, and gatherers benefit from this because their time working is valued by our purchasing. These are the ripple effects: local people gathering foods, processing the foods, distributing it on the island, cooking the food. This all weaves together into what is healthy for us and the community. (LC participant)

Despite the perceived benefits of local and traditional food, some concerns were raised. The price of local food compared with nonlocal market food was noted as a challenge. Local food tends to be much more expensive and, with a concern about food insecurity and poverty among some members of the community, a steady supply of healthy food for schoolchildren was seen as a priority over supporting local producers:

But the cost for the produce from a farmer opposed to the Coop is a huge difference. And when I buy a \$20 bag of carrots, I can get, you know, five bags of carrots, you know what I mean. (LC participant)

Infrastructure for cooking and for feeding children, and greenhouse and garden maintenance over the summer were issues that were raised as being difficult to manage. In addition, safety and legislative issues relating to food programs in schools (e.g., serving wild meats) were at times a challenge, although a number of these issues became resolved because of safe abattoir policies developed in HG (31). Securing funding for foods and personnel was an ongoing challenge toward the theme of increasing student local and traditional food access.

Building knowledge and skills.

A large focus of the LC in HG was sustaining local and traditional food access (this was “Goal 2”) and developing food skills and building knowledge was seen as a way to accomplish this:

I am impressed with what is being done already—educating kids about growing, gathering, and preserving wild and locally grown foods. (LC participant)

Skills classes were built into the school curriculum, for example, the development of a calendar in conjunction with local Elders, with names of Haida foods, and what and where to gather each month. Workshops were run by the local food pantries and, as a result, the LC led to the development of new skills within the community with a focus on hands-on learning and traditional food, knowledge, and practices:

I’m also lucky to have ... our First Nations Resource Worker, and she’s been very active with coordinating ... going berry picking with kids; or we had another Haida role model come and teach our kids how to butcher and deal with some beef—some local [farmer] had donated a cow—and canning salmon, and just some of those skills that some of our kids have active parents and family members that help teach them, but not all of them. (LC participant)

Existing community knowledge and skills, particularly those of the Haida Elders in the community, were seen as being there to be learned

and were incorporated into the many workshops and skills classes that were run over the funding period:

We are all there for the kids—[we] all live on Haida Gwaii and harvest traditional foods, all looking to gather and share knowledge. (LC participant)

Following local protocol was emphasized and Elders were consulted as to where to go and how to harvest respectfully. When dealing with traditional foods, protocol was important, as was the incorporation of the Haida language and making sure workshops were done in a culturally appropriate way. Giving thanks to the food item in gratitude for giving and providing life was recognized as an important Haida principle:

Then I give thanks to salmon—thanks and ask that it be sustained in the future—sometimes the future for the oceans looks bleak—prayers are powerful—go to the ocean with a prayer—we can all do this over and over to protect it. (LC participant)

Logistics relating to field trips and workshops in schools, for example, the reliance on volunteer time and transport for workshops and school field trips, were a challenge over the period of time:

Then there’s logistics within the program, okay do we have enough shovels; do we have enough activities; do I have enough knowledge to be able to provide programming for a year, a full year? What do you do in November, December, January, February, March? So that’s, barriers that you know, some semesters are better overcome than others. (LC participant)

Funding was required for field trips (for example, seaweed harvesting) to take place and this was a challenge owing to lack of resources. LC participants also felt that they needed more support in learning about traditional protocols.

In addition to food knowledge and skills, research capacity was built, for example, a research assistant was trained and hired to conduct community interviews, and the LCC and 1 community member attended and presented at each of 4 “annual” gatherings of the larger project. The HG community hosted the first annual gathering in 2015.

Transitioning the LC initiative to Haida leadership.

HG had established local and traditional food work connected with the LC before the 2016 CIHR funding, but engagement of the Haida community and leadership became a large focus of the work between 2016 and 2018:

Nothing happens in a void—the fight for lands has been important and is ongoing; title case, land stewardship, Haida language—it all contributes to taking ownership of our own health. (LCC)

The LC work had begun in 2013 with general support from Haida community members, but Indigenous direction and getting visionary and practical support from the CHN was seen as a priority as the work continued under the CIHR funding period. Haida leadership was seen as critical to the success of the work and its longevity. As a result, no LCs were held until the community was further along the path of transitioning to Haida leadership.

The CIHR grant was housed at University of Waterloo but an agreement with the SHN in 2016 transferred funding to SHN to manage the HG budget and provide administrative support. The HFC was

established in 2016 and a memorandum of understanding called the “Spirit of Collaboration” [*Isda ad dii gii isda (S)- Isdaa ’sgyaan diiga isdii (M)*] was co-developed between and signed by the HFC and the University of Waterloo in 2017 to support and guide evaluation. As a result of this work, there was a shift toward increased Indigenous representation at the LC over time.

“Food is medicine” in Indigenous culture and this principle served as a focus for connection:

It’s been wonderful to see people who don’t normally connect with each other, like farmers and Elders and teachers and administrators and cooks, all in one room, and they’re able to see each other’s perspectives much more clearly, not through policy ... but just around food and kids. (LCC)

The incorporation of the Haida language into LC events and a focus on empowerment and ownership of the project by the Haida community aligned around food sovereignty, which remains a Haida priority:

I think it’s really important how you package it. We could package it in a way where we create champions and foodies in the communities, whether it’s externally or internally, with the Indigenous people, or we can really focus it and sell it in a way where the community becomes more sovereign in their thought process and their actions, and they actually own this, and this is for them, by them, with them, and really taking control of their health, their lives, their quality of life. It was something that was done generations ago. Our ancestors did it all along. (LC partner, 2018)

Fostering relationships.

Even though the LC work had been ongoing for a number of years in HG, developing strong partnerships between the variety of stakeholders (Indigenous community members, non-Indigenous community members, and researchers) continued. The concept that connections were made as a result of tapping into the existing, deeply rooted food culture was expressed in the community and facilitator interviews:

We all have an interest in local and traditional food ... We all like to laugh, we all love cooking, eating, and sharing. (LC participant)

When you add dried berries to something—they add sweetness—it represents laughter—laughter got us through hard time. (LC participant)

Enhanced community connectedness because of the work in HG during 2016–2018 was discussed as a distinct and positive outcome by a number of sources:

I like the way it connects our kids to the greater community. So often the younger classes will go over to the greenhouse a couple times a year and help and learn from the older kids in there; and help pick some food and talk about it. And they just love it, they just look up to those kids and it’s a nice kind of leadership opportunity for the older students. (LC participant)

Getting our Elders and children connected together in the school system, getting people out on the land, getting in touch with our culture, one of the best things we can do. (LC participant, 2018)

Connections were built within the community because of LC work. Partnerships were built, and the trust for teachers improved; the commitment to follow Haida protocol was an important factor in this regard.

HG had expressed concerns about evaluation early in the project regarding data sharing, types of evaluation, measurement indexes, etc. In general, concerns regarding research and collaboration with universities were raised more frequently by those from HG than by other communities, perhaps because HG has been the setting for much past research. Over time, trust was developed through open communication, signed agreements, and, in part, discussion at the annual gatherings of the broader project. Knowledge mobilization was integrated through community participation at the annual project gathering and through LCC participation in local food activity newsletters. End-of-project community infographics were developed and revised with input from the HFC.

Local champions were critical to the building of relationships within the community and between HG and other communities. Selecting an established school food champion as LCC facilitated the activities of the LC and relationships to support the initiative; there was found to be great value and power in the inclusion of this role into the initiative. In addition, other passionate local food champions were critical, for example, the role of the community dietitian, pantry coordinators, and relationships with schools, hospitals, community groups, and champions:

I would say a major theme is like looking at where there’s excitement. Like there’s just it seems like there’s always a keen parent, a keen teacher, a keen somebody in the community that’s like just riled up about health and if you can kind of harvest their energy, I feel like that’s where we can go with the momentum. ... Like there’s some key people here and there but really I feel like what we’ve built this on are a whole bunch of champions, right? (LC participant)

These community members worked to promote a local, existing food culture, and worked with the administration to promote obtaining funds for local food. This ensured that local food became part of the structure and food system, and as people used local food, they looked for new ways to obtain it, thus promoting a local food culture.

In addition to the development of connections within HG, links between HG and other participating First Nations were developed, including a field trip of students from a mainland BC community, intercommunity visits and exchanges between food champions, and attendance by a school principal from HG at the LC of a mainland BC community to share insights and experience with starting a local food to school program and building gardens and a longhouse greenhouse.

In HG, LF2S was scaled up vertically. Many of the activities that had begun before the CIHR evaluation continued to flourish. In some ways, it seemed like the work of the former LCs had become a cooperative enterprise with aspects, like the pantries, expanding. Other aspects, like the transition to more Haida leadership, were more specific to the 2016–2019 project and the associated LC. HG continues to have a vibrant local and traditional food culture and places importance on traditional foods.

Discussion

LF2S is a flexible initiative that aims to engage the broader community in planning and implementation and, as such, incorporates some of the best practice recommendations for community-based initiatives in In-

Indigenous communities (34–36). HG has a rich food environment, due in part to its temperate climate, a vibrant local and traditional food culture, and a long history of protecting the land and culture. A variety of local food-related activities had been taking place in HG before the establishment of the LC project in 2013, and by 2016, the LC work was firmly established and included the new initiative of the local food pantries. Under the period of the current evaluation, the LC activities in HG focused on 2 main areas: schools and the work of the local food pantries. Within this work, LC participants worked toward increasing access to local and traditional foods, building knowledge and skills, fostering relationships, and transitioning to Haida leadership within the project. The multifaceted potential of the initiative was compared with the image of a crab: “A Crab has many arms, [is] grasping for many ideas and learning many ways” (LC participant, HG), and this study documents the large amount of work carried out by partners within this project. The 5 key findings of our study are discussed next under the subheadings of traditional food; links to food security and food sovereignty; funding and other resources; learning; and Indigenous leadership, ownership, and self-determination.

Traditional food

The title of the project focused on local food, but, for HG, incorporating traditional food into the diets and lifestyles of community youth became a major focus of the initiative. Traditional food patterns have been shown to be protective against chronic disease (7, 37), but Indian residential schools in Canada forbade cultural practice and, hence, traditional food knowledge and skills among Indigenous youth decreased over time (38–40). Older Indigenous community members from all communities were concerned about the levels of traditional food intake among their youth and the resulting impacts on their long-term health; this is in line with other research (7, 37, 41, 42). Reclamation of traditional and existing food knowledge and skills became a priority. The importance of a holistic view of health, culture, and connecting with the land for Indigenous communities has been widely documented (43) and is demonstrated by the Indigenous wellness wheel and other comparable wellness models (43–45).

Links to food security and food sovereignty

Traditional food knowledge is intimately connected with food security, and therefore consumption patterns and health outcomes (38, 46), and the inclusion of traditional foods in the diet and associated knowledge and skills have been shown to contribute to food security in other studies (47, 48). Unfortunately, the literature demonstrates the unplanned impacts that food safety programs and a lack of emphasis of traditional food in Indigenous schools have on Indigenous children (49), and the desire to consume branded foods, the association of “branded” foods with the ideals of “the good life,” and negative perceptions of traditional foods as being “backward” and un-modern (50, 51). Encouragingly, youth in HG enjoy eating game, wild fish, and locally grown vegetables (52). Moreover, steps taken by HG to certify hunted meats and meet food safety requirements mean that traditional meats can be served in schools. This has provided a template for other communities to follow. Comments expressing the need for the inclusion of traditional ways of knowing into the school curriculum echo similar themes in other studies (41).

Although the original Learning Lab/Circle project in HG focused on local foods, participants in the current evaluation stressed the importance of traditional foods. Also, a movement from discussion of food security to that of food sovereignty was noted in the data over time. With a greater transition to Indigenous community leadership this shift in emphasis makes sense. The concept of Indigenous food sovereignty emphasizes ownership and control of Indigenous food systems by Indigenous people, in part as a way of addressing food insecurity, and also as a reclamation of culture. This emphasis strengthened over the course of the project. This follows a pattern seen in other projects; the aim to enhance self-determination, reduce vulnerability, and increase resilience leads to a focus on food sovereignty (53, 54) and traditional skills (55).

For Indigenous peoples in remote areas, food system changes have tended to decrease dietary diversity as a result of a lower intake of traditional food and a greater reliance on limited types of market food (49). The goals of the LC initiative included actions to build nutrition literacy and include more local and traditional food into school menus, through changes in school meals, placing emphasis on more local and traditional foods, and changes in student skills via sourcing foods and processing foods from the land.

It is notable that in HG, the frequent LCs of the formative years (2013–2016) seemed less critical to maintaining the momentum of food system change. The work here had already been established and time and the further funding of the LCC supported through the current project enabled the work to diversify and extend, e.g., through growth of the north and south pantry hubs. The new emphasis on the HFC enhanced cultural relevance, emphasis, knowledge, and skills.

Funding and other resources

Finding resources beyond research funding is challenging but essential to implementing community programs, for example, for procuring a bus to take children onto the traditional land to participate in a workshop with local knowledge keepers or providing food for school programs. Local food was frequently found to be unaffordable within the school budget, despite the efforts made to build partnerships with local farmers and growers to support the local economy. There were no funds allowed through the specific (CIHR) grant that funded the current project to invest in foods, infrastructure, and other needs. This may have interfered with building trust (research being seen, historically, as an activity of taking information from the community but not of giving back to enhance community).

The diverse funding sources accessed by HG give confidence that the emphasis on local, traditional, and healthy food access fostered through the LC can be sustained. However, the effort and partnership development required were significant. Canada has no comprehensive national food policy, and instead, the country’s food concerns are divided among a range of agencies and government departments (56, 57), with most Canadian food regulations remaining focused on food safety and fraud prevention. The latest policy, renewed in 2008–2009, attempted to look at the system more broadly but failed to address all the necessary issues, such as the integration of health, and social and cultural concerns, particularly of Indigenous Peoples in Canada (57). Despite concerted efforts over the years, no national school food program is in place in Canada (58), nor has there been federal government support for Indigenous-led efforts to enhance their food system priorities. Renewed

talk of a Canadian Food Policy (59) and renewed emphasis on equity and the 2015 Truth and Reconciliation Calls to Action bring some hope that this may change.

Learning

“Learning from one another” became an important feature of the initiative. The cultural importance of sharing of traditional knowledge from Elders and other knowledge keepers with youth was significant, and from a research perspective acted as an extended version of successful mentoring programs as reported elsewhere (60). Rebecca Thomas, 2016–2018 Poet Laureate for Halifax, Nova Scotia, Canada, puts it thus in her poem “Etuaptmumk” (Two-Eyed Seeing):

... we ask that you understand that we are the experts on what we need.
Don't feed us your good intentions...
We plan out our actions for the next seven generations and we ask that you do that same.
Open your other set of eyes
Recognize the pain you have caused
Take a pause and start breathing.
Welcome to the world of Two Eyed Seeing. (61)

The journey of the LC reflects the words of this poem—at many times in the process, work had to be done to develop relationships and overcome a lack of trust between the Indigenous and non-Indigenous groups that coexisted in the community; working with food frequently facilitated this work.

Indigenous leadership, ownership, and self-determination

Despite evidence that many components (e.g., multiple local champions) are necessary for the success of the LC initiative, it is impossible to overstate the importance of Indigenous ownership and leadership of the project. Building trust, a critical component of relationship building, takes time, particularly when ideas come from outside the community; the time frame may well extend beyond a 3-y funding window. Nevertheless, significant progress was made over the course of the project. Interviews conducted by a Haida representative in 2015 identified that the Haida did not see the project, in its current format, as belonging to them. However, extensive relationship building was carried out by Indigenous and non-Indigenous community members, resulting in the emergence of the HFC that gave direction regarding programming and the evaluation process with respect to alignment with Haida values and priorities. One of the resulting pieces of work was the “Spirit of Collaboration” agreement developed with the HFC, which served as a guide to the work that was done between the research team and the community in a way that was appropriate. Such an agreement can be seen as a legacy from this initiative that could encourage others to approach research or evaluation processes in a similar way.

Strengths and limitations

This study has several strengths. The CBPR methodology enabled the community to very much guide the implementation and evaluation process according to their own wishes and decide on evaluation strategies that would most benefit their communities. From this perspective, the principles of OCAP were fully adhered to in line with guidelines for research with Indigenous communities. The research team walked along-

side the community, providing guidance and support where necessary and assisting the community with methodological expertise.

Methodologically, all interviews and reports were independently coded by 2 coders (LWM and RV, LWM and BZ, respectively), and member checking further supported methodologic rigor. The variety of data collected and included allowed for the triangulation of themes and the inclusion of voices from many different parts of the community.

The study has a few limitations. Communities did not choose to assess household food security directly, hence, any suggestions about the presence or effects of food insecurity are based on community member perceptions generated through interviews or open-ended questions. Owing to the COVID-19 pandemic, it was not possible to gather face-to-face to review the initial themes, consider the community infographic, or conduct more detailed analysis. Instead, we relied on relationships developed and sharing information virtually for opportunities to make sense of the information that was shared.

It is beyond the scope of this study to examine long-term outcomes of the initiative. Evaluation of the continued progress of the work begun here would be worthwhile. Nevertheless, sustainability of local food system changes and the LC initiative was a goal of the work from the outset.

Conclusion

In conclusion, the LC approach is an inclusive and respectful way of engaging community and promoting local and traditional foods, knowledge, and practices among Indigenous youth in rural and remote locations such as the community described here. The inherent flexibility of the model means that a community can prioritize activities of interest to them, identify what success of the initiatives would look like, and tailor evaluation processes accordingly. Indigenous leadership and ownership are essential to the success of such initiatives. The current study documents an exciting story on how HG has implemented the LC model to enhance local and traditional food systems, especially in relation to school communities. The reflections and recommendations based on community input may help to enhance uptake of the model in other contexts and ongoing local food initiatives in similar communities across Canada:

[I am most proud that in our work together] we have been planting seeds of hope for our people. (LC participant)

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ance/perspectives on the study and reviewed the paper extensively; and all authors: read and approved the final manuscript.

Data Availability

Data described in the article, code book, and analytic code will be made available upon request pending approval from the authors and from the community of Haida Gwaii.

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