2008/09

Canada/Northwest Territories Agriculture Policy Framework Agreement - Small Scale Foods Program

INTERIM REPORT
GOVERNMENT OF THE NORTHWEST TERRITORIES, Department of Industry Tourism and Investment
9/10/2008

Contents

Canada/Northwest Territories Agriculture Policy Framework Agreement
Continuity Agreement
Northwest Territories Small Scale Foods Program 2008-09

Overview:

History: Within the context of the Canada/Northwest Territories (NWT) Agriculture Policy Framework Agreement (APF), the Government of the Northwest Territories (GNWT) Department of Industry, Tourism and Investment (ITI) developed and implemented a program to develop small local based food production systems in communities of the NWT. The initial component of the project involved consultation with all communities in the NWT to determine level of interest and identify primary contacts or lead agencies willing to spearhead location of sites and establishment of community gardens. Based on consultation a total of six communities developed and planted sites in the summer of 2006 with an additional six sites in the summer of 2007. During the summer of 2008 the project was expanded involving a total of eighteen communities with interest expressed in an additional four communities. Table 1 Community Participation and Status provides a summary of activity by community for 2008.

Expected Outcomes: The project focused on a number of outcomes secondary to the establishment of growing sites. Local food production offers members of the community opportunity to gain a greater awareness of origins of food as well as introducing the unique qualities associated with the taste of fresh produce. A community garden site is a forum for people to come together and discuss ideas and methodologies and techniques. Product harvested is fresher, cheaper and results in a sense of achievement and pride. Extension of the project into schools gives youth an opportunity to learn where food comes from. It gives them a greater awareness and interest in food qualities and health benefits through hands on experience

Assistance: Each of the communities involved in the project was provided technical and financial assistance dependent on level of knowledge and resources. Eight remote communities have been provided with a roto-tiller and water pump/hose as well as a small seeder, small greenhouse and assorted maintenance tools. These will be provided to additional communities as programming allows. Each community is provided seed which is purchased in bulk. Visits are made to each community throughout the growing season to assist with maintenance, harvest/storage and future planning.

Project Implementation: Logistics associated with access and service of communities was complex. The NWT land mass is extensive and most communities are isolated. Communities located on the road system in the South Slave/Mackenzie had sites developed through a pool of equipment. This was completed over a period of 10 to 12 days and also included four fly-in communities, two of which were located north of Yellowknife (Whatì and Gameti) two accessed out of Norman Wells. The remainder of communities are accessed via boat on the Mackenzie and Liard rivers. Most often, community members involved in projects were only available during evenings or weekends. Development was easily accomplished during the extended

daylight periods in the NWT. An additional 8 to 10 days was required to complete plantings in communities along the Mackenzie River including two fly-in communities in the Sahtu region. In total the project team spent 22 days preparing and planting all communities with an average travel/working day of 12 hours. The project essentially followed the onset of spring starting with the warmer southern areas and travelling north.

Garden sizes ranged from 1,000 square feet to half an acre. In earlier years a wide variety of vegetables were planted, however for the 2008 summer variety was limited to primarily root crops. This decision was based on requests by communities for storable crops and also to alleviate overwhelming participants with too wide a variety of vegetables. All communities are planning on expanding sites as well as types of crops. There is a considerable interest in growing flowers in all communities, particularly after discussions identifying flowers which can be eaten. Again, as in previous years, while the project team was in a community they also assisted individuals in preparing private gardens.

Project Team: The 2008 project team consisted of one full time ITI/TEAF[1] employee as well as a single summer student. The summer student had been involved in the project the previous year thus did not require extensive supervision allowing for splitting of travel to communities and more effective use of time. Assistance provided involved three trips to each community and focused on planting methodologies, plant and weed identification and harvest and storage. In previous years the project employed two summer students or as in the 2007 year, an intern and a student. Given the remoteness of communities, it is preferable to have students travel in pairs.

Outcomes: As noted, the program involved eighteen communities. Four additional communities have expressed interest in participating in the 2009 season which will bring the total to 22 communities. During the winter of 2007/08 workshops were held in each community in which presentations and seeding workshops were provided to all community schools as well as an evening gardening workshop for interested adults. These workshops are planned to be expanded in the spring of 2009 for schools to start bedding plants for the community and private gardens. This fits well with science curriculums offered in schools and will provide for local access to bedding plants reducing potential for disease and pest transfer as well as generating interest by students. Local health delivery organizations have also expressed interest in involvement through their healthy communities initiatives.

[1] TEAFF: Traditional Economy Agriculture Fisheries and Fur

Project Rationale:

Mention the notion of agriculture production in the NWT and responses vary from recollection of fond memories of mission gardens, to a sympathetic smile to indifference to antagonism. True, many people have migrated to the NWT with some degree of experience or knowledge of food production, whether it is from a backyard garden, or on a greater scale. In larger centers backyard gardens are somewhat common where soils are available. In Yellowknife, the Community Garden Collective has established three large community gardens. This has required an admirable degree of effort on the part of participants as soils had to be imported to develop of sites.

Ft. Simpson was the site of extensive field variety trials of grains and vegetables undertaken by the Beaverlodge Research Station. Extensive soils mapping was undertaken in the late 1960's and early 70's by the federal department of Agriculture with a view to determining agriculture capability in the NWT. The Territorial Farmers Association (TFA), established in 1974, sought to provide representation for a fledgling industry based primarily in the Hay River and Ft. Smith areas. The TFA has lobbied for such things as an NWT Agriculture Policy, fuel and tax concessions however, despite a productive land base exceeding 300 hectares there is no significant land based production of products. The NWT does hold production quota for eggs equating to 115,908 layers, however the majority this quota is held in the Hay River area with the remainder not being utilized. NWT egg quota alone represents a market value of some 12 million dollars with potential gross revenues of over $4,000,000 per year.

Communities along the Mackenzie, Liard and Slave Rivers all have some historic reference to agriculture production. Elders in communities refer fondly to times when missions held a degree of prominence and established large gardens and kept livestock for local consumption of vegetables, milk and eggs. Local production combined with more traditional harvest of wildlife and wild edibles ensured communities a high degree of self sufficiency. Much of this knowledge has been lost as generations move to reliance on foods provided through transport from southern suppliers. More frequently, these are ready-to-serve, frozen and highly processed products. Fresh meat, vegetables and fruit are sold by local grocery stores, however cost is high in smaller communities and shelf-life is limited. More recently leafy green vegetables are increasingly being marketed in gas sealed packaging which lengthens shelf life and allows for much easier preparation.

The question then becomes. "What is the best approach to encouraging an appreciation and interest in local food production?" The response taken via this project was simple and direct. Work with communities through a hands-on program which allows for involvement at all levels and provides physical results and development of knowledge.

Project Methodology:

The Small Scale Foods Program involved three primary components.

- Consultation and Education
- Project Implementation
- Follow-up and technical assistance

All communities had undergone a consultative process that involved identifying primary contacts or agencies which would be responsible for setting direction for the project and working to identify and securing sites for use. Upon identification of sites, initial development was completed and seed as well as additional inputs supplied to facilitate planting. In conjunction with the first year's plantings the project team facilitated workshops on site and provided winter workshops where planting techniques, composting, selection and use of vegetables were taught. These workshops often extended into schools which provided an opportunity for students to plant containers with short season crops such as lettuce and beet greens and enjoy fresh greens in their classrooms. Most communities indicated a preference to organic production, however given the infertility of soils this could not be accomplished given the time frames. To facilitate a reasonable degree of success a commercial blend 25-10-10-5 fertilizer was used with the understanding that once sites were developed and accompanying composting and soil development programs were integrated into projects they would be able to move to a more organic based production system. No herbicides or pesticides were used and communities have all expressed interest in companion planting.

There is a general notion that soils in the NWT are acidic in nature. This relates to association of lands and topography as well as tree growth being dominantly coniferous and scrub pine. In fact all soils tested in the NWT to date, regardless of area have continually presented with ph of 7.5 or as high as 8.5. In addition most structures which may be seen as high in organic matter have not undergone any degree of decomposition and remain in a litter form. Most surface soil horizons are moderately to strongly high in carbonates with sulphur layers in the 24 to 36 inch zone. While some soils such as those in Nahanni Butte, Trout Lake, and some areas around Jean Marie are fairly deep loams, others such as Gamètì and Whatì as well as many others have a very thin layer of organic moss under layered with glacial till zones. Establishing a garden site in the NWT requires considerable effort and initial inputs.

Implementation of the project involved travel by the project team to each community to assist with development of the site and initial planting. At the beginning of this project, only Trout Lake had an existing site which had been used in previous years. All other communities started into the project from raw land. Where available, community based equipment was used to clear lands, however for the most part, clearing was completed by hand and axe and initial breaking completed with an 8 hp rear tine roto-tiller which was transported into communities via plane, truck or boat.

Communities were notified of days the project team member(s) would arrive and were for the most part prepared and enthusiastic. Preparation was completed over a period of one day on average with all participants working well into the evening. Upon completion of the site signs were posted to identify rows, what seedlings and mature plants would look like and indicating basic maintenance requirements. The project team then moved on to the next community, often traveling late into the night, to ensure arrival on time for the next site. A benefit of the NWT is occurrence of the onset of spring. While sites in the South Slave and Mackenzie were being prepared and planted in early June, spring is just beginning in more northern communities thus facilitating an orderly and somewhat even planting schedule. A example of this is Deline which was planted in late-June although Great Bear Lake was primarily ice covered at the time.

Primarily root crops were planted with potatoes and carrots being most requested. Turnip, cabbage, beets and peas were also planted in each site. Bedding plants were brought in for tomatoes, onion sets and cabbage however given the potential for disease and pest transfer from southern growers the project will be initiating starting of bedding plants through school programs.

Follow-up in remote communities was completed throughout the summer season with at least one trip into each community most often by a single member of the project team given the summer student was now much more comfortable with expectations after completing training sessions on the road based communities. This allowed for all communities to be visited over a shorter time frame.

It is significant to note the scale of travel associated with this project. In total the project team travelled the following distances over the course of the 3 month season.

- Boat 1,900 kms.
- Charters 5 (averaging 1 hrs/Cessna 207)
- Vehicle 18,000 kms (24,000 kms/year)
- Commercial Return Flights 15 (avg of 1 hrs per flight and 2 days)

*Most commercial flights originated out of Yellowknife.

Outcomes:

All communities achieved a level of harvest for the season despite the late start. For the most part produce was distributed to community members. In other communities produce is planned to be used for a small community gathering or incorporated into a future community feast. Last year the community of Whatì used the harvest as an occasion for a community feast which served moose meat, fish and produce from the garden.

Some interesting problems were encountered in a few communities. In the last season the garden in Nahanni Butte was invaded by a herd of bison just after planting. The animals obviously saw the newly planted site as the perfect wallowing site and destroyed the garden. The site was moved this year however, bison continued to present a problem. Fencing was put in place and solar electric fencing is to be incorporated as a deterrent. The Kakisa garden was raided by a couple of groundhogs with a particular liking for cabbage. In Gamètì the garden came under siege by lemmings until small gauge fencing was put in place. Vandalism has not been an issue to date and it is hoped that by involving schools in the projects this will continue to be the case. Carrots are the vegetable of choice for kids thus in workshops a subtle emphasis is made as to the best stage to harvest this crop. The gardens are being planned to increase consumption of fresh food and it would be viewed as somewhat hypocritical to discourage children from eating produce. The message is "Don't destroy, eat." In the words of a participant from Tulita; "I plant 6 rows of carrots. Two for me and four for the kids."

All communities are enthusiastic in planning for the next year. Trout Lake has doubled the size of its site. As well Jean Marie and Wrigley and Nahanni Butte are expanding substantially. Fort Food Hope is identifying a new larger site and Deline is looking at alternative production methods to mitigate the cold winds off the lake.

Water is seen to be a significant problem with all gardens with communities relying on the local fire department or forestry crews to provide water despite placement of water pumps. An approach to remedying this is to install small solar pumping systems which will fill a tank during the day then allow for gravity fed soaker watering during the evening. A discussion with one participant exemplifies the approach so common to an activity where weather is such a factor. The garden in the community did quite well, however in discussion he made numerous references to "next year we are going to." Such is the age old theme of food production.

Future Directions:

Agriculture production, particularly on a scale of this project can not generate scale and revenue streams even approaching projects associated with mining, oil or gas. It can however, encourage an environment of sustainability in terms of contributing to the food supply continuum and exerting a greater degree of knowledge and awareness of origin use and preparation of fresh food.

The level of acceptance and interest which has been generated by the Small Scale Foods Program is nothing short of overwhelming. The project has accessed almost all communities of the NWT and indications are it will be requested to expand to even the most northerly communities. This will of course present its own unique challenges associated with continuous permafrost and extremely short growing season.

Of the current 23 communities, six are serviced by road and developed through an equipment pool. Eight have been provided with base materials including, roto-tiller, small greenhouse, small seeder, water pump, fencing materials and small assorted tools. The remaining nine communities require similar equipment with an additional five small greenhouses. Above ground storage buildings are being designed which will utilize geothermal cooling/tempering and a solar pump to maintain a proper storage environment for produce. Trout Lake will be the pilot for this innovation. The Arctic Energy Alliance, Ecology North and Department of Environment and Natural Resources will be consulted to provide information and assistance in this regard. Communities have also requested composting systems. In some southern communities this will simply be a cage system, however in select communities composting drums will be placed which accelerate the process.

All communities have requested assistance in the way of workshops on preparation of preserves, storage techniques, and diversification into growing other products such as herbs. Planning is in progress which would see an award system implemented to acknowledge community success relating to best site, highest production, innovation most avid participant and even expanding to include judging of preserves. Programming will continue to integrate into the school systems to the greatest degree possible as well as seeking partnerships with other GNWT departments such as Health and Social Services as well as NGO's.

Development of expertise and provision of advice will continue to be an issue over, at least, the shorter term as communities continue to expand and diversify projects. It is anticipated a period of four to five years of direct assistance will be required to ensure ongoing sustainability of the program at which time minor follow-ups and workshops will ensure success.

Table 1 Community Participation and Status

Community Population	Region	Type of Project *Type of Access*	Project involvement to date	Comments
Behchokǫ̀	North Slave	Road access	New for 2009 Season	Community interest expressed, contact made. Site to be identified and developed 2009. Incorporation into school programming requested. Workshop to be held in winter. Development will occur with equipment pool.
Colville Lake	Sahtu	Fly-in	New for 2009 Season	Site identified. Workshop to be held in winter. Site to be developed 2009. Small composting project started 2008.
Déljne	Sahtu	Community Garden *Fly in*	Consultations 2007, Workshop 2008 Planted 2008. Wild berry harvest potential to be assessed.	Marginal soils. Community located on Great Bear Lake. Ice is present in lake to late July Raised beds, container production and cold frames required to allow for success. Workshops held winter 2008. Site developed and planted summer 2008. Community is very keen to expand. Roto-tiller, greenhouse and water pump on site.
Enterprise	South Slave	Community Garden *Road access*	Site developed and planted in 2007 continued 2008	Good Soils. Site located central in community Presentations and instructions sessions to be held over winter. Very involved community. Site will continue to be prepared using equipment pool
Fort Good Hope 1,600	Inuvik	Community Garden *Fly in/boat*	Assisted with private gardens development in 2007 Small Community Garden Planted 2008	Adequate soils. Workshop held winter 2008, Request for workshop winter 2009 Site to be expanded 2009.
Fort Liard	Deh Cho	Community Garden *Road access*	Consultation completed	Excellent soils. Community has interest, but is unsure as to whether to proceed.

Community Population	Region	Type of Project *Type of Access*	Project involvement to date	Comments
Fort McPherson	Inuvik	Road from Inuvik/boat		
Fort Providence	Deh Cho	Community Garden *Road access*	Interest expressed, meetings held, and site identified	Excellent soils. Community is continuing to solicit support among members before initiating project. Community is interested in a community greenhouse however given the very fertile soils the garden is being recommended.
Fort Resolution	South Slave	Community Garden *Road access*	New Site developed and planted in 2006 and expanded in 2007. Planted and fenced 2008	Good soils. Site located near lake not central to town thus access issues. Workshop sessions to be held over winter. Development through equipment pool.
Fort Simpson	Deh Cho	Community Garden *Road access*	Initial site developed and planted in 2006, but temporarily suspended in 2007	Soils good to marginal. Ad hoc community group formed. Planned site for 2009, Workshop sessions to be held over winter to increase awareness and support for further garden development.
Fort Smith	South Slave	Community Garden *Road access*	Established through regional tourism initiative, providing assistance with composting	Investigating accelerated composting methodologies
Gamètì	North Slave	Community Garden *Fly in*	New site developed and planted in 2007. Planted 2008	Community very involved. Workshops held with schools winter 2008. Further workshop 2009. Greenhouse, roto-tiller, water pump on site. Very keen.
Hay River	South Slave	Community Garden *Road access*	Site identified and cleared 2007/08	Site located on industrial lot. Drainage issues. Garden to be run by the Hay River Beautification Committee Work will continue to expand activities and increase involvement

Community Population	Region	Type of Project *Type of Access*	Project involvement to date	Comments
Jean Marie River	Deh Cho	Community Garden *Road access/boat*	Initial site developed and planted in 2006, expanded in 2007 expanded 2008	Good soils. Site located central to town. Workshop to be held over winter. New expansion site to be developed 2009. Site developed using equipment pool.
Kakisa	South Slave	Community Garden *Road access*	Former site developed and planted in 2006, expanded in 2007. Planted 2008.	Workshop on use and storage of vegetables to take place over winter. Site development accomplished using equipment pool.
Łutselk'e	North Slave	Community Garden *Fly in/boat*	2007 Interest expressed, consultations completed. Site developed and planted 2008.	Roto-tiller, water pump on site. Community is very involved.
Nahanni Butte	Deh Cho	Community Garden *Fly in/boat*	Initial site developed and planted in 2006, however bison destroyed the garden. Temporarily suspended project in 2007, while a new site could be identified.	Excellent soils. New site developed 2008. Planted and fenced to mitigate bison impact. Site to be doubled in size 2009 season. Total size to be ½ acre.
Norman Wells	Sahtu	Community Garden *Fly in/boat*	Private sites developed independent of project	Marginal soils. Support provided. Cooperating with local greenhouse operator, Jerry Loomis to provide local supply for Sahtu communities.

Community Population	Region	Type of Project *Type of Access*	Project involvement to date	Comments
Trout Lake	Deh Cho	Community Garden *Fly in*	A previously used site was re-developed and planted in 2007. Expanded in 2008 to double size.	Excellent soils, site adjacent to water source. Workshop sessions to be held over winter. All equipment on site. Greenhouse to be provided.
Tsiigehtchic	Inuvik	Road from Inuvik/boat	Discussion held with community.	Community developed site outside of project. Have requested assistance through program. Workshop to be held over winter.
Tulita	Satu	Community Garden *Fly in/boat*	Initial site developed and planted 2006, as well as in 2007	Community working to identify and develop and larger permanent site. All equipment on site. Workshop sessions to be held over winter
Whatì	North Slave	Community Garden/ Composting *Fly in*	Site identified and developed in 2006, initial planting 2007. Planted 2008	Marginal soils. Very involved community. All equipment on site. Site diversified in 2008 to accommodate independent plots. Workshop sessions to be held over winter
Wrigley	Deh Cho	Community Garden *Road access/boat*	2007 Interest expressed and two potential sites identified. 2008 site developed and planted.	Marginal soils. Site developed and planted 2008. Area is very high in organic matter. Site to be tripled in size 2009. Development occurs through equipment pool. Workshop sessions to be held over winter.