



Community Greenhouse Project in Chisasibi

A summary and progress update
By Eric House, May 27th, 2014



Outline

- Objectives of presentation
- Project description
- Preliminary implementation
- Information
- Next steps

Objectives of presentation

- Provide an initial project design for the community greenhouse project
- Clarify the scope of the project
- Highlight aspects for which more information is needed

Project summary

- A social enterprise creating jobs locally
- Community greenhouse and gardens bringing fresh local vegetables to our Cree communities!
- Benefits: learn about healthy food, food security, affordable fresh produce available for 8 months
- Context: MAPAQ funding to develop greenhouses in the North (but not enough)

Project Objectives

1. To galvanize community **economic development** by creating an profitable enterprise staffed by skilled workers with a commercial, social and community health mandate;
2. To create a production system under which fresh, healthy and organic food is **available** to Chisasibi residents-especially children in pre-school to high school-for most of the year, at a lower cost and with a lesser environmental footprint and
3. To bring agricultural **training** to the entire Cree Nation, thus increasing food security in the long-run while enabling individuals and groups to pursue gardening as a productive leisure activity.

Examples in Kuujjuaq, Inuvik & Iqaluit



Inuit greenhouses are great community projects, but they rely on external subsidies; they have **not** been designed to be commercially viable



Governance and partnership

- Social enterprise project
- Major partners: CISA, CBSC, CDGB
- Potential directors and observers:
 - Chisasibi Band Council; *for political and financial support, subsidized space, etc.;*
 - CDGB and CBSC for economic development and funding
 - Cree Health Board; *for linkages in nutrition programming;*
 - Cree School Board; *to target children for healthy food and to get children involved and learning about growing food;*
 - Chisasibi Leisure Departments; *providing vision on community linkages for leisure gardening;*
 - Nord-du-Québec BioFood Network; *networking and communications and Testing greenhouse in northern context*
 - Researchers from CISA or NISKA as advisers

Community linkages potential

- Saving community plots for schools and day cares to teach children how to grow food
- Possibility of subsidizing plots for elders
- Idea of using greenhouse as a place for criminal offenders to do community service hours
- Parallel educational activities for community members: growing and cooking vegetables

Human resources and training

- Two staff recommended:
- Coordinator with agricultural background
- Agricultural technician
- Training provided by CISA and subsidized by Emploi-québec and/or CHRD
- Potential topics of training; organic agriculture, composting, pest management, etc.

Technical aspects – location

- Location is key; good soil, elevated area with minimum wind, near public services
- Inuit case studies: land provided by band for free
- Potential pilot design: 90' x 40' greenhouse, but sizing and scope to be completed by a technical quotation as there is no few knowledge for commercial greenhouse in the North. Hence the project could be also a pilot research project of commercial greenhouse.
- Please note that 66% of commercial greenhouses size is between : 500 to 2000 m² in QC and 50% of 130 enterprises has less than 100 000 \$ of income.
- Possibility to build on existing concrete slab or in/next to an existing public building (due to high construction costs)
- Upcoming October CISA field trip to investigate ideal location. Heating cost is very important

Technical aspects - structure

- Building and technology has to be designed to **adapted** weather conditions (sun, wind, T°)
 - No commercial greenhouse exists in Eeyou Istchee or North of Abitibi and Lac-St-Jean
 - Inuit case studies are more community-oriented, not designed for a commercial scale, very low tech
 - Need for greenhouse experts to develop new designs and submit technical quotes
 - **Research and development** on greenhouse design is needed
- **Basic principles** for design:
 - Solidity of materials
 - High energy efficiency & innovative insolation
 - Mechanization of essential functions to ensure maximum greenhouse autonomy (aeration, T° control)
 - Soil and water conservation

Technical aspects: production

- Main greenhouse crops: tomatoes, cucumbers and salad greens
- Other vegetables grown in outside gardens (incl. potatoes)
- Growing season: approx. March-November
- Greenhouse would grow enough of these three vegetables (15 tonnes of each) to feed 40 kg of vegetables (Statistics Canada average) to the 1000 Chisasibi children – **self-reliance**
- **To provide at least one portion of vegetable to 1000 children, we need to produce 40 000 kg. If it's only tomatoes, we need to build a 800 m2 greenhouse to feed them. But it's not that simple equation. 250 to 500 m2 would be a very good start as pilot project.**
- Possibility of composting system and value-added commercial activities (e.g. juicing, canning, etc.)

Implementation timeline

- Summer/Fall 2013
 - Write project description
 - Search and secure funding
 - Community mobilization (community information session)
 - Site visit – identify project location
 - Feasibility and technical study – research and development, detailed site map and cost detailed more precisely
 - Get quotations for greenhouse construction (approx. \$300,000+)

Implementation timeline cont.

- Winter/Spring 2014
 - Recruit staff
 - Build partnerships and awareness in the community
 - Construct greenhouse
 - Train staff – partnership with CISA and CETAB (growing, composting, safe operations, etc.)
 - Prepare site with green fertilizers
 - Plan garden (map + pricing)
 - Order seeds
 - Communications campaigns in the community
 - Write crops calendar
- Summer 2015
 - Establish and divide operational tasks
 - Start growing!

Cost estimates

- Costing depends heavily on technical decisions
- Limited technical information available because of innovative project, never been done at commercial scale in Eeyou Itschee – **high level of uncertainty for now, being addressed in next steps**
- Start-up costs could reach \$225,000+, including project design, construction, feasibility study, equipment and office furniture
- One year operational costs forecasted to approx. \$260,000, including salaries, employee training, insurance, traveling expenses, heat, agricultural input and other administrative expenses. After, operations will be less.
- Very gross estimate : 500 000 \$ to set the greenhouse and to operate one year of production. Technical feasibility study will provide better details as greenhouse in the North is lacking much of information.

Funding strategy

- Cree Nation
 - Chisasibi Band Council and Economic Development bodies
 - Cree Regional Authority (Regional Development Fund)
 - Cree Human Resources Development (training and salary subsidies)
 - Cree Board of Health and Social Services
 - Social Economy Specific Agreement
- Several provincial, federal and non-profit partners to be approached, including MAPAQ, MDEIE, Agriculture and Agri-Food Canada, AANDC and HRSDC

Next steps

- Project design completed based on thorough research and to the best of available knowledge
- This presentation provides principles and scenarios for project development
- Next steps: CISA field visit and feasibility study
- Identify potential project site
- Gather in-depth technical information and quotations, in collaboration with greenhouse manufacturers and outside partners



Thank you!

Chinisguumidin !

