

Deliverable B – Needs Identification and Problem Statement_G7

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Client Background:

- Client is an indigenous woman, a part of a large indigenous community (immigrated to Canada 4 years ago)
- She is an experienced indigenous cook
- Has been dedicated to this project for over a year, she has three properties at her disposal for the greenhouse project (Madohoki Farm, Private residence, Indoor community space/school)
- She often travels to visit different indigenous communities to help out
- Husband works in construction; client is knowledgeable with regards to practical aspects of the project (i.e.. Foundation and structural concerns)

User identification:

- Client will be a user and a customer because she will be partially responsible for maintaining the greenhouse (user) and is providing the outline of our project (customer, excluding finance and transportation)
- Users will include the people using the greenhouse to farm (including our client)
- Indoor space users will include Inuit children (planting for educational purposes)

Problem Identification:

- Big issue with food in the north, greatly affecting Indigenous populations in Canada
- Expensive food prices in general, but especially in the north of Canada
- Sunlight is an issue in the north, causes limitations in terms of growth of crops
- Hard to get fresh food in remote areas (ie Nunavut)

Client/Greenhouse Needs:

- The greenhouses must be intuitive and easy to understand and operate
- The Farm and School locations must be youth friendly as children will be visiting often (i.e: no sharp materials low to the ground)
- Client stresses the importance of an eco-friendly project/design (animal friendly, minimal invasiveness towards habitats, no fertilizers)
- The greenhouse must be reliable to last as long as possible and withstand heavy usage
- The greenhouses will be secured to a foundation, but will still be modular and modifiable
- We must provide soil beds
- The greenhouse should be suitable for the intended plants: tomatoes, squash, herbs, basil, mushrooms, beets, corn, beans, onions, garlic, zucchini and anything else the community recommends.
- The greenhouse must have a simple design to transport (2-person max for assembly, parts should fit in the Makerspace mini-van)
- The specific dimensions for the greenhouses are: 4' by 8' recommended for the outdoor properties
- Will need self-standing grow wall for indoor property (artificial source of light)

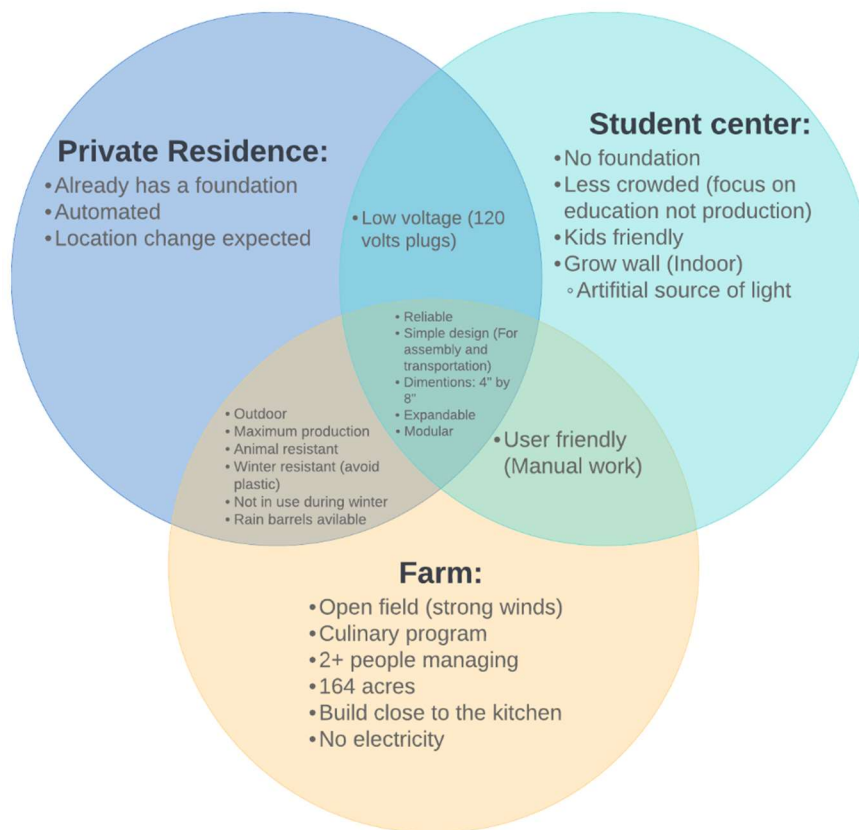
Other Important Information (constraints, location specifications...):

The client has stated that...

- There are not any constraints on electricity use for the "Home" location, but it could be an issue for other locations
- There are not any constraints with access to water for all locations
- There will not be any issues with watering because she has stated that manual watering will be encouraged, however an automated system was recommended for the "Home" location
- There have been no issues in the past with rodents or insect infestation at all locations
- There are no major obstructions blocking sunlight or that will fall on the greenhouse
- This type of project has never been attempted before by someone from the community, therefore it is a completely new experience for the client
- Her and the indigenous community will create their own compost for the greenhouses
- The greenhouses must be natural. That means no fertilizer or special chemical to alter growing
- The greenhouse will not be used in winter season (for outdoor greenhouses of the farm and private residence)

PROBLEM STATEMENT:

OUR CLIENT IS IN NEED OF EFFECTIVE, LOW-COST AND ENVIRONMENT FRIENDLY GREENHOUSE SYSTEMS IN ORDER TO PRODUCE FAST-GROWING CROPS FOR INDIGENOUS COMMUNITIES IN CANADA.



Importance of needs		
#	Need	Importance
1	The greenhouse should be modular	5
2	The greenhouse should be expandable	3
3	The greenhouse should be rodent proof	Inuit Center: 1 (indoor) and 3 (outdoor) Madahoke Farm: 5 Private residence: 5
4	The greenhouse should be user friendly and kid-friendly	Inuit Center: 5 Madahoke farm: 4 Private residence: 4
5	The greenhouse should optimize production of earlier-mentioned crops	Inuit Center: 3 Madahoke farm: 5 Private residence: 5
6	The greenhouse should be easily transportable (parts fit in minivan, two person carry, easy assembly)	3
7	Reliable/sustainable material (winter and wind resistance, rust etc...)	4
8	Aesthetic (igloo...)	1
9	Environment friendly (no fertilizers, minimal invasiveness)	3
10	Low cost	2

Specifications:	CANOPIA by PALRAM (Home Depot)	VIVOSUN R846 (Amazon)	OUTSUNNY (Aosom)
Dimensions	4' x 8'	4' x 8'	4.1' x 8.2'
Cost (2 points)	1, 249.00\$	269.99\$	109.99\$
Weight (3 points)	64 lbs	45.6 lbs	Unknown
Materials (5 points)	Aluminum + Polycarbonate	Undisclosed metal + plastic + nylon fabric	PVC + fiberglass poles + steel wire
Features (3 points)	Trapezoid prism, galvanized steel, UV protection, adjustable roof vent	Indoor greenhouse, storage, ventilation, light proof roofing (indoor), fast setup	Tent, easy setup, portable, easy plant access
Reviews (2 points)	3.1 stars out of 5.0 (64 reviews)	4.2 stars out of 5.0 (1,224 reviews)	4.7 stars out of 5.0 (6 reviews)
Total (45 points)	37	32	23
Legend	3 points for green, 2 points for yellow, 1 point for red. Colour points multiplied by importance factor of each specification (indicated in brackets after each description)		