UBC Social Ecological Economic Development Studies (SEEDS) Student Report

Feasibility of Supplying a Food Conference with Local Foods from UBC Farm: Scenario 2c. The Feasibility of Re-Localizing UBC's Food System

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AGSC 450

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The Feasibility of Re-Localizing UBC's Food System

By Group 15

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Abstract

This paper is part of a five-year study, now at the end of its fourth year, of an ongoing collaborative project entitled *The Sustainability of the UBC Food System*. Research for the UBC Food System project is conducted by the students of Agricultural Sciences 450: Land, Food & Community, at the University of British Columbia. The purpose of the study is to assess the sustainability of the food system at UBC and explore integrative actions to relocalize the UBC foodshed. Our group focuses on strengthing the link between two of the major UBC stakeholders: AMS Food and Beverage Department and the UBC Farm.

Nancy Toogood, the AMS Food and Beverage Department manager, has utilized [redacted] the UBC Food Systems Project to engage our group in the organization of a local food conference using Vancouver food distributors, inlcuding the UBC Farm. Our research team contacted four food distributors to aid in the design of our conference menus. We were able to evaluate the financial feasibility of holding the conference for the Community Food Security Coalition (CFSC) in August 2006. The production capabilities of the UBC Farm were also assessed and a potential growing contract was designed for the onion, garlic, and carrot quantities needed in our menu plans.

It was determined that the number of local items on our conference menu has potential for growth. The ameoba food system sustainability model, (designed by the past partners in this UBC Food System Project), can be successfully utilized by the stakeholder parties interested in the locality of our proposed food conference. A continued dedication of the AMS Food and Beverage Department to incopropate locally produced foods, especially those grown on the UBC Farm, will ensure progress in the transition to a more sustainabile UBC foodshed.

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Introduction

The UBC Food System Project is an ongoing, multi-dimensional initiative, now entering its fourth year of research by students in the Faculty of Land and Food Systems. Although there are several goals for this collaborative project, the major aims are centered around increasing the sustainability of the local food system at the University of British Columbia. Stakeholders in this UBC project inlcude the UBC farm, Sage Bistro, AMS catering service, AMS Food and Beverage Department, UBC sustainability office, UBC Food Services, UBC Waste Management, UBC Faculty of Land and Food Systems (formerly Faculty of Agricultural Sciences), UBC Campus Sustainability Office (CSO) and its Social, Ecological, Economic, Development Studies (SEEDS) program. To date, the existing research by other student groups has laid a solid foundation for determining the feasibility of potential actions within the boundaries of the UBC food system. In this context, our research group focuses on the re-localization of the current food system; more specifically, we studied the feasibility of supplying a food security conference with local foods, including those from UBC Farm.

The Research Team

The research group consists of seven students, bringing with them a broad scope of educational and cultural backgrounds, as well as a variety of ages and genders. This eclectic blend of individuals has been advantageous to the development of the group dynamic, as well as to the final outcome of the research project. Several students are involved within food and nutrition programs, while two students are burgeoning agroecologists and one researcher is studying global resource systems. Although the group does concede that our educational biases are similar regarding global and localized food sustainability, we are passionate about the value of food sustainability. The scope of individualized perspectives coupled with a highly active group dynamic has significantly contributed to the overall enjoyment and achievement of the UBC Food System Project 2005.

Research Teams Definition of Local

As a group we found it difficult to determine exactly what "local" meant to us. It was not an easy task to come up with one clear-cut definition. Coffee, for example, is not grown locally, but it is roasted locally. Distributors define locally roasted coffee as being a 'local' product, but some members of our group feel that an item can only truly be local if it is consumed in the same vicinity which it is grown. After much discussion and debate, we came to the conclusion that certain products, such as coffee, would be termed as being 'semi-local'. Our reasoning behind this was that the roasting of the coffee beans still contributes

to our local community's economy. While money may be cylcing back within our local food system, only a part of the potential profit is going to the farmers. In this sense, food produced semi-locally is only partially sustainable. Thus, for the purpose of our project, only food items grown and purchased within British Columbia are dubbed "local," while those products made in BC with ingredients from outside of the province are called "semi-local."

Why Local

Promoting local eating is important because it not only benefits our community and allows it to become self-sufficient but it ultimately benefits each of us individually. Eating within the local foodshed guarantees that the money spent on purchasing local food stays within the community, helping to create jobs, raise incomes and support farms. Dollars recycled into our community circulate and can build a set of social relationships that make communities more resilient and liveable, thereby increasing food security. Local food systems are "owned and managed by local individuals, families and corporations that have a strong and direct stake in the long-term future of their community, therefore they are more likely to employ local residents and to reinvest profits in the local community" (Green & Lyson, 1999). By supporting our neighbours instead of big corporations that return very little profit to farmers, we are eliminating the middlemen involved and giving farmers a fairer share of the profit. Greater profits also give farmers the affordability to decrease the use of environmentally harmful practices, protect wildlife habitats, and improve the quality of food produced. Another benefit of local food systems is that they are less vulnerable to disruption of the transportation system by natural disasters or sabotage.

Buying food closer to home is a powerful tool for transforming our currently environmentally and socially destructive economy, towards one that is based on a foundation of firm beliefs and principles that focus on community interaction, improved health and increased sustainability.

The Problem Definition

In support of food and land sustainability, the manager of the Alma Mater Society Food and Beverage Department (AMSFBD), Nancy Toogood, has requested information related to the feasibility of organizing a local food conference at UBC for the *Community Food Security Coalition (CFSC).* The proposed conference would be held in August, 2006, with the theme "Eating Locally, Thinking Globally". In this context, the research team has been approached to determine the feasibility of supplying the conference

with local foods from UBC Farm and other local food distributors. Our project will provide Nancy and her staff with an applicable model of the potential capacity of increasing the use of locally grown foods. This proposal is one of three components of the 2005 UBC Food System Project that studied re-localization of the UBC food system in an effort to enhance the economic and ecological viability of returning to the local food shed.

This problem statement incurs several key needs to be addressed including catering requirements, food quantities, growing plans, food harvesting, financial feasibility, menu selection, local distributors and sponsorships. The following paper will address the overall feasibility of holding a locally-supplied food conference at UBC in August 2006 and the recommendations the research team has developed for the key stakeholders in this project; namely the AMSFBD and UBC Farm.

The Vision Statement

The UBC Food System Project has come a long way since its inaugaration in 2002. In the last two years, student researchers in partnership with the principal investigator, Alejandro Rojas [redacted] have developed a comprehensive vision statement for the sustainability of the UBC food system (UBCFSP 2004). This vision is summarized by seven guiding principles, presented below:

1. Must protect *and* enhance the diversity and the integrity of the natural ecosystem that supports it. It must preserve the resources needed that can make it function indefinitely
2. Relies on local inputs when possible, where inputs and waste are recycled and/or composted back into the system in which it originated
3. Is a secure system that provides food that is affordable, available, accessible, culturally, ethically and nutritionally appropriate, socially just, safe and resilient
4. Provides for healthy diets that do not compromise the ability of people to feed themselves or others in the present or in the future
5. Entices pleasures, and nurtures feelings of commensality around the food table
6. Enhances feelings of community belonging which requires a heightened awareness of every component, from the point of production to end disposal
7. Is based on *long*-term financial viability; contains a mixture of imported *and* local foods whenever possible; on foods that come from socially and ecologically conscious producers who receive fair prices for their products

Our research team discussed this vision statement in great detail, and have developed a heightened awareness as to how our personal and group value assumptions interact with the concepts presented above. First of all, the group agreed that the vision for sustainability of the UBC food system is an ambitious, multi-faceted approach, that broadly covers all aspects of the food system; from nutritional quality and food type to the ecological and social consequences that are undoubtedly intertwined within the food system. In reference to each guiding principle, the group identified with the ecological emphasis. We observed that group members from certain educational specialties, for example, agroecology, felt especially strongly regarding the ecological footprint that the UBC food system would have upon the global environment. Similarly, those students studying food and nutrition felt that the nutritional adequacy

and food security of the local food system were paramount concerns in the vision statement. Although the research team identified a need to increase the awareness of consumers regarding the path of each food commodity, the group was divided as to whether this aspect (Principle Six) should be an integral component to the UBC Food System Vision Statement. Several students felt that this statement was Utopian, and that it would lead to frustration in the implementation of actions to address this guiding principle. Other members felt that without addressing the food distribution and processing channels, consumers would retain an unrealistic perspective of their food system. This group conflict ultimately led to the conclusion that although the sixth principle in the vision statement for the UBC Food System Project is perhaps not the most important construct to strive towards in creating a sustainable community, it has a purpose.

Methodology

In response to the request to plan a local food catering event for 750 members of the Community Food Security Coalition (CFSC), working with AMSFBD, UBC Farm and other local distributors, we have developed a set menu, analyzed data with regards to UBC Farm and allied distributors, and have looked into the possibility of corporate sponsorship to fund the event. The CFSC that we will be catering to is a non-profit, North American organization consisting of 325 members (CFCS, 2005). The CFSC is dedicated to building strong, sustainable, local and regional food systems that ensure access to affordable, nutritious, and culturally appropriate food to all people (CFCS, 2005).

After speaking with Nancy Toogood, the director of the AMSFBD, we determined that our project is to focus on the closure of the AMS foodshed to re-localize their food distributors, including a connection directly with the UBC Farm. Traditionally, AMSFBD has purchased less than 30% of their products from local food providers, but as a stakeholder in the food system project, they have expressed a desire to further explore the possibility of developing these partnerships and moving towards community supported agriculture (Group2, Summer 2004). Of the produce purchased by AMSFBD, it was discovered that 83% could be purchased locally (Group 2, Summer 2004). The main reasons why food has not been purchased locally is price and quality, as local foods have been found to be more expensive due to higher labour costs in BC when compared to other high-producing agricultural countires like China, Mexico and California. It has also been found that some locally produced commodities do not meet the quantity or quality requirements of the UBC food providers. With the introduction of this conference we hope to abolish some of these misconceptions and to promote AMSFBD to become a contributor in achieving long term sustainability of our food system and our environment, and food security and health of our community.

Specifically, we are striving to achieve social, ecological and economical sustainability within the UBC food system. Starting this project by asking ourselves "how is our current food system operating" and "what changes need to be implemented to make it more sustainable", we determined that a relocalized food system will enhance the sustainability of the UBC food system and, in general, help restore the lost connection between farmers and consumers.

AMSFBD and Local Foods

As has been stated by AMSFBD, some consumers may feel that local food offers very little in terms of variety, but the increasing awareness and interest in local foods is causing a growth in the number of local food vendors, as well as in the diversity of food. Eating locally does, however, involve being able to understand the natural rhythms of the growing seasons in the surrounding community and adapting buying habits to agricultural constraints. Using locally grown foods will save AMSFBD from paying for the hidden costs associated with buying non-local foods. When foods travels long distances, it requires more packaging, not to mention refrigeration and a greater consumption of fuel by the trucks that transport them, resulting in a large amount of waste and pollution.

Working alongside Nancy Toogood, we established that our goal would be to have 80% of our food products come from local food providers, and 20% from non-local food providers. Using our goal for local food use, we determined that the most feasible time of the year to hold the conference is during the month of August. As can be seen in Table 1, it has been determined that 95% of the local produce grown in BC is grown during August (Group 2, Summer 2004). Holding the conference during this month will provide us with more variety when planning our conference menu.

Table 1. Number and percent of BC-grown produce seasonally available throughout the year *(Adapted from Summer 2004, Group 2).*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Number of local produce in season (out of 56)	21	21	17	17	17	28	47	**53**	49	44	26	22
	38%	38%	30%	30%	30%	50%	84%	**95%**	88%	79%	46%	39%

With the month of the conference decided upon and our goal defined, we began to develop our menu, analyze and determine the use of food distributors and the potential for sponsorship, and conducted a economic analysis to determine the feasibility of holding the conference at UBC.

The Menu

From the position of the AMSFBD, nothing is more important to a food conference than its main focal point—the food itself. This proposal sets forth comprehensive menus covering breakfast, lunch and dinner meals, with a central theme of "Fresh is Best". The research team decided upon this theme as an example of the quality, taste and ease of use that can be met through the local food system. Each recipe has been selected for its functionality in regards to its locally supplied ingredients, the preparation time, cost, and finally, the nutritional quality. A sample recipe has been included, (***Appendix 1***), to demonstrate the format and generality of each menu. A complete set of recipes has been forwarded to Nancy Toogood, manager of AMSFBD for her review.

The menu for the local food conference is as follows:

Breakfast
Scrambled Eggs
Turkey Sausage
Multigrain Pancakes with Maple Syrup
Rice Krispies, Bran Flakes
Multigrain & Sourdough Toast with assorted jams and peanut butters
Fresh Cantaloupe, Watermelon, Honeydew & Peaches
Tea, Coffee, Milk, Orange Juice

Lunch
Assorted Deli Sandwiche Platter
Purple, Red & Green Pepper Salad, Coleslaw
Garlic and Potato Soup, Squash Soup
Apple Crisp
Tea, Coffee, Milk, Water

Snack
Seasonal Fruit Platter with Yogurt Dip

Dinner
Roast Beef
Grilled Chicken with Herbs
Vegetarian Lasagna
Brown Sugar Butternut Squash
Green Beans with Hazelnuts
Wild Rice Pilaf
Parsley Potatoes
Mixed Salad Greens with Poppy Seed Dressing
Ceasar Salad
Cheesecake with Raspberry Coulis
Peach Cobbler
Tea, Coffee, Milk, Water

Each meal will be presented as a buffet to better serve the large number of guests attending, and to provide an attractive display of locally grown and prepared foods. The menus have been created to reflect general nutritional guidelines, according to Health Canada, and they also take into account Canada's Food Guide to Healthy Eating. Keeping with the "Fresh is Best" theme, an effort has also been made to incorporate fresh organic and local foods, prepared using minimal cooking techniques and seasoned with herbs and spices.

To meet the budgetary constraints, monetary funding has been largely allocated to the dinner meal, as this is the ultimate showcase of locally grown and produced foods. The budget for each meal is as follows:

Table 2. Proposed budget for CFSC conference per person per day.

Total Budget Per Person Per Day: $ 17.75	
Snacks	$ 1.50
Breakfast	$ 3.00
Lunch	$ 4.25
Dinner	$ 9.00
Total	**$ 17.75**

The food budget, which is targeted for 750 people, will enable the local food conference to remain financially feasible while providing high quality, delicious meals to the conference attendees.

Distributors

Our research team chose to limit the number of total food distributors to four, including the UBC Farm. This decision was made to reduce total money spent on distribution fees and help maintain the organization of the food deliveries on the day of the event. As you can see from ***Appendix 2,*** [redacted] Discovery Organics is our major supplier, with additional ingredients coming from the UBC Farm, Hills Food and Sysco. As the goal of our project is to plan a local food conference, we have chosen distributors that supply a large amount of local products. Although we have chosen distributors with a focus on food sustainability, many of our ingredients were still procurred from the global food marketing machine (***Appendix 2***). Ingredients that are manufactured are primarily being purchased from Discovery Organics.

Discovery Organics was suggested to us by the AMSFBD director, Nancy Toogood. Discovery Organics has a good reputation and a wide variety of products. Annie Moss, a guest speaker to the AGSC 450 class, mentioned that there are ninety-three food trucks traveling across the border every minute (Moss, Annie, March 21st, 2005). Discovery Organics shares our vison for the Vancovuer food shed: to be sustainable

and to produce food in the local area in the most efficient way possible. With reference to the UBC Farm, we have limited our food choices to three main ingredients: carrots, garlic and onions, since the farm is still a growing operation [redacted] By choosing three main ingredients, AMS catering and AMSFBD can set up a contract with the farm, allowing the farm to hire farmers and cultivate the required amount of land needed to grow the required produce. One of our other distributors is Sysco, a large food distributor in North America. Sysco currently has a contract with AMSFBD, we wish to focus on expanding the current contract to include many of the items that we were unable to find from our defined distributors (***Appendix 2***). Finally, we contacted Hills Farm, which is a local meat distributor producing organic and specialty meat products. The menu items that were not supplied by our four distributors were evaluated using their current retail prices. We realize that the retail price is a gross overestimation of the true costs Nancy and the AMSFBD would have to pay when supplying these products through their regular distributors. If the inclusion of more than four food distributors is feasible, more of the menu items can be obtained from a local source.

Sponsorship

Sponsorship is very similar to the concept of donations and it helps to reduce the economic burden of supplying food for large events, such as our CFSC conference. Not only will the use of sponsors decrease conference costs for AMSFBD, it will provide an opportunity for local food companies or farming corporations to advertise to an agriculturally-influential crowd. Organizers often will not have enough money in their budgets to cover the entire cost involved in planning conferences or other special events, and so they rely on the support of sponsorship. We have decided that sponsor names and logos will be placed on individual tent cards, that will be available on each table, as well as on advertisement banners and brochures (***Appendix 3***). Below is a list of potential sponsors that produce local products that we believe might be interested in supporting an event such as our local food conference:

- BC Dairy Foundation
- BC food protection Association
- BC fruit growers' association
- BC greenhouse growers' association
- BC Hot House
- BC salmon farmers association
- Capers
- Happy Planet
- Nature's Path foods
- The Certified organic association of BC

In order to gain the support of companies for sponsorship, we have also developed a sponsorship letter, that can be used to further present our conference to potential sponsor (***Appendix 4***).

Economic Analysis

The catering budget has allowed us to allocate $17.75 to each person attending the conference. This will cover the purchasing and preparation cost for all meals during the entire day. Although there may be some variation in price once we physically purchase all of the required ingredients, our projected food cost will be lower than the budget maximum. Some of the products are not available from our distributors and we have extrapolated from the retail prices instead. Those prices are just overestimations, but act as indicators of the approximate costs. We have made several assumptions while we were calculating the prices, such as the size for a medium sized watermelon as well as the species of fruit. Prices are also subject to vary depending on market conditions.

UBC Farm

Introduction to the farm

The UBC Farm was adjacent to the original chemistry buildings when the University was first established in 1921 (Mark Bomford, 2005a; UBC Farm, 2005). At that time, the Faculty of Agricultural Sciences was an influential establishment, conducting agricultural research and education within the heart of the campus. Over time, the land-use plans for the University changed and the farm was pushed further away from the hub of student activity and focus (Bomford, 2005a). In the mid-1970s, the farm was re-established in its current location at 6182 South Campus (UBC Farm, 2005). Today, the UBC Farm encompasses approximately 40 hectares of farm and forested land. An initiative was created in 2000 to revive the agricultural production on the farm (UBC Farm, 2005). After a new vision for the farm was established in 2001, the production and management of the farm has maintained its student-directed focus (UBC Farm, 2001).

Current farm uses and development

There are approximately 1-½ acres currently being cultivated for intensive production in the farm's market garden (Bomford, 2005b). However, a total of 3 acres are being agriculturally used in some manner (Bomford, 2005a). This includes a Mayan Garden, (which is farmed mostly by members of the Maya cultural society of British Columbia), a garden set-aside for production by the Musqueam indigenous peoples, a pumpkin patch, an apiculture production site, and a small vineyard that is no longer kept in production (Bomford, 2005a). Education also plays a central role in the uses of the UBC farmland. The Land, Food, and Community Garden aims to teach local schoolchildren the basics about agricultural production in an agroecological context (UBC Farm, 2005). The University itself still maintains some

research associations to the UBC Farm, especially in the form of agroecological directed-studies projects, and agroforesty and agroecology courses (Bomford, 2005a; Riseman, 2005).

Because the goal of the UBC farm is to maintain production via student involvement, the expansion of current farm practices and programs relies chiefly upon the leadership of UBC students. The market garden, the farm's most successful operation to date, was the result of a few motivated agroecology students in 2001 (Bomford, 2005a). Paid employees of the farm are often overworked and dealing with a system of management that is not well defined, nor documented (Bomford, 2005a). Small steps, however, are being taken to increase the stability of the farm operations, including the hiring of 5 paid staff and the help of many dedicated volunteers (Bomford, 2005b).

Commodities produced in the UBC Farm market garden:

Although the UBC farm is not certified, only organic production techniques are used for commodities grown in the market garden (UBC Farm, 2005). While both land and labour at the farm are limited, the market garden has swelled into a veritable business, selling a great variety of items at each market Saturday. This includes: specialty salad mixes, herbs, carrots, kale, peas, tomatoes, broccoli, pumpkins, zucchini, artichokes, melons, and much more (UBC Farm, 2005). The farm is limited in producing high quantities of some of their products because cultivation is difficult, or time-consuming. Currently, the farm is already producing food for Sage Bistro, an on-campus restaurant, and the campus food co-op (Bomford, 2005b). In our group's effort to create feasible contribution with the farm to the CFSC conference within the next few years, we have to realize the limitations of the farm to produce certain items at high capacity for our needs.

Assessment of the Social Limitations of the UBC Farm:

The obstacles facing farms on the urban edge can be challenging (Bomke, 2005). In order to utilize the UBC Farm successfully with the scope of this UBC foodshed relocalizing project, there needs to be greater support and acknowledgement from the UBC students, faculty, course curriculum, and the surrounding Grey Point communities. This is also essential if the farm is to become the ultimate example of sustainable practices, applied teaching, and community interaction that the Faculty of Land and Food Systems desires it to be (UBC Farm, 2001). It has been suggested by the current farm staff that the two main problems that are currently limiting the output capacity of the UBC Farm are: (1) the lack of businesses connection with many of the food providers on campus, and (2) the inconsistent labour force which relies heavily upon student volunteers (Bomford, 2005a; Fung, 2004). A large portion of this ongoing Land, Food, and

Community UBC Food System Study is to address and strengthen the ties between the UBC farm and campus food outlets. This includes our segment of the project working with the AMS Food and Beverage Department to design a local food conference.

Past groups involved in this project have also addressed several ways to increase the economic viability of the UBC Farm in order to create growth within the program and establish a greater invested interest in the farm throughout the campus and the growing commercial community. The potential for the south campus farm to increase its involvement in UBC course curriculum was discussed by Summer 2004 Group 4 (Porter, *et al.* 2004), and several of the faculties on campus could benefit from a more applied learning approach by using the farm's resources (Porter, *et al.* 2004). The courses that currently make use of the farm landscape or operation within their syllabus are mainly Agroecology and Agroforestry programs or directed studies programs that are lead by a faculty member in the Faculty of Land and Food Systems. Since the farm has little, if any, influence on the majority of the University's students, many do not even know of its existence. The distance between the farm and the center of campus life has created quite a barrier for the program to overcome.

The development of a more stable UBC Farm with long-term sustainability can only be accomplished with the gain of a more reliable and long-term work force. The most promising proposal to address this problem is the implementation of an internship program by the 2004 Farm Internship Coordinator, Stephanie Fung (Fung, 2004). The idea of an internship program had modest beginnings in 2002, taking in two UBC exchange students from Tec de Monterrey without much structure to the program (Fung, 2004). The goal of this initial program was to replicate the internship program already established at the University of California Santa Cruz (Fung, 2004). After a decrease in interest to participate in the UBC-Mexico exchange internship for the summer of 2004, the new internship coordinator for the UBC Farm was assigned the task of re-evaluating the goals the farm had for the project. Many new ideas and a better organization of the possibilities and limitations of the internship grew from Stephanie's work. Pilot programs for the new and improved internships were conducted twice in the summer of 2004, allowing the UBC farm staff the opportunity to get feedback on the success and dissatisfactions of the participants (Fung, 2004). The expansion of this program would greatly benefit the farm by encouraging the participation of students, create a more reliable volunteer force during critical farm operation months, and help the farm continue to grow and expand into a financially viable and ecologically sustainable business.

UBC Farm Requirements for the CFSC Conference:

There is huge potential for the UBC Farm to act as a contract grower with the AMSFBD. The amount of food that the farm can produce is only limited by the availability of paid labourers and time. There are large areas on the farm that can be used for the production of food that are not presently being cultivated. As seen in an aerial photograph from 2003 (Figure 1), the cultivated areas in vegetable production have recently been ploughed. Since then, the vegetable production has not expanded very much and remains at approximately one and a half acres. The creation of the conference field "farm to cafeteria" could be done in any of the grass fields seen in Figure 1.

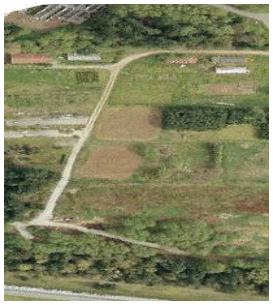

Figure 1. Aerial photograph of the UBC Farm.

Site Description:

South Campus and the UBC Farm are found within the Western Hemlock biogeoclimatic zone and the very dry maritime sub-zone. Soil has been extensively modified from tillage and cropping patterns during the last 40 years but originally classified in the podzol order and the humo-feric great group. Coarse textured soil and the moderate slope creates a well drained site that does not need drainage tile and allows the site to be worked throughout the year without causing significant damage to soil structure and other physical soil properties. The farm has a south-west aspect which is ideal for growing needs receiving maximum sun exposure throughout the year. All of these features are well suited for farm activities throughout the year providing opportunities for much needed cash flow throughout the fall and winter months.

Soil has been sampled annually in the market garden production area since 1999 and average values have been presented in Table 3. The pH of adjacent forest soils would normally be in the range of 4-5. However, due to the annual additions of manure and the occasional use of lime, the pH has been raised to meet the growing requirements of almost every crop. Total nitrogen values are adequate for crop needs from annual additions of manure. Boron is the only exchangeable nutrient that may cause deficiency symptoms in some crops. All other exchangeable nutrients are adequate for most crop needs. The most interesting value from the chemical analysis is the level of organic matter (O.M.) of 8.5-12.45. Normal values of O.M. in adjacent forest soils would be in the range of 2-4 %. Continuous manure/compost

additions to the soil have successfully raised O.M. to very high levels that will add to total N levels and other micronutrients. High O.M. levels also improve the cation holding capacities of the soil that normally would be low in such coarse textured soils typical in this biogeoclimatic zone. The health of the soil could most likely be rated as good to excellent based on the chemical analysis. This indicates that the organic management at the site has created a soil fertility situation based on minimal soil inputs.

Site	pH	pH	E.C. mmhos/cm	O.M.	C %	N	C/N	P	K	Ca	Mg	Cu mg/kg	Zn	Fe	Mn	B
Upper	6 2	\	0.37	12.45	7.23	0.35	20.7	229 50	107.50	2150	150	0.50	23	22.50	50	0.15
Lower	5 8	6.7	0.52	8.50	4.93	0.20	25.1	121.33	96.67	1067	88.33	0.83	9.10	18	25.33	0.13

Table 3. Average chemical soil analysis (1999 – 2002) in the upper & lower market garden areas.

UBC Farm Land Use Plan for CFSC: Carrots, Onions, and Garlic:

Rather than relying on yield data from the UBC Farm provided by Mark Bomford, yields have been estimated based on typical planting design and densities as seen in the following figures. Based on the typical design for commercial onion production (Figure 2), 12 onions could be grown in an area of 1m X 30cm without any additional crops planted in companion.

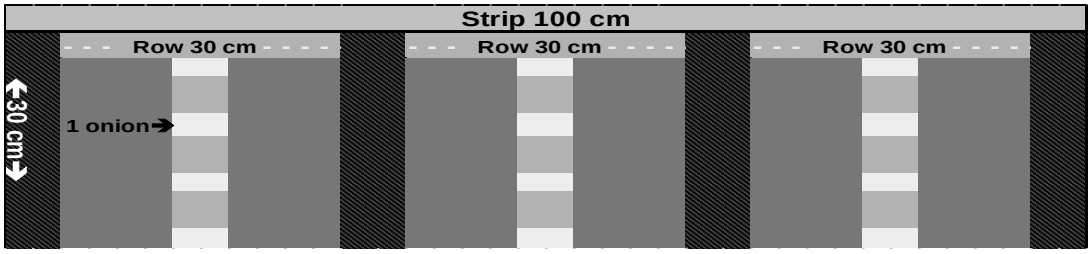

Figure 2. Diagram of typical planting design for commercial onion production.

Elliot Coleman a veteran organic farmer from Maine, USA describes how onions naturally grow in clumps and therefore can be planted or transplanted four or five seeds at a time (Coleman, 1989). Eventually, the sprouting seeds will become a cluster of four or five onions expanding space in the soil as they grow. Weeding is more efficient because it can be done with a hoe rather than by hand before seedlings grow tall enough to compete with weeds for light, water, and nutrients (Figure 3).

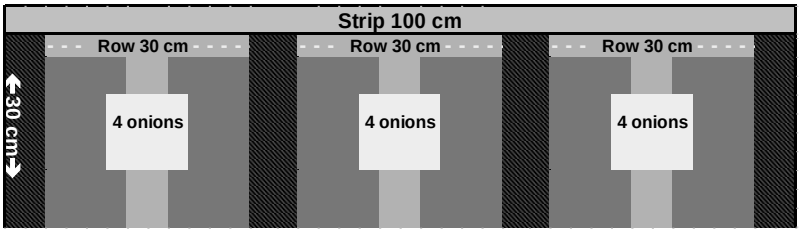

Figure 3. Planting scheme proposed by Elliot Coleman of onion production in clumps.

The cluster of onions creates room for a second crop that is grown between the onions (Figure 4). Growing carrots and onions together as described by Coleman (1989) can increase productivity and labour. Garlic can be grown in the same space as the carrots based on how many are needed. Before the area is planted in the spring, the proposed area would grow a mix of vetch and winter wheat that is ploughed in and used as a green manure as described by Gleissman (2000). Compost produced by UBC Waste Management from the new in-vessel composter is another possible option to achieve soil fertility. Additional compost produced on the farm may be added to the field before the growing season as needed.

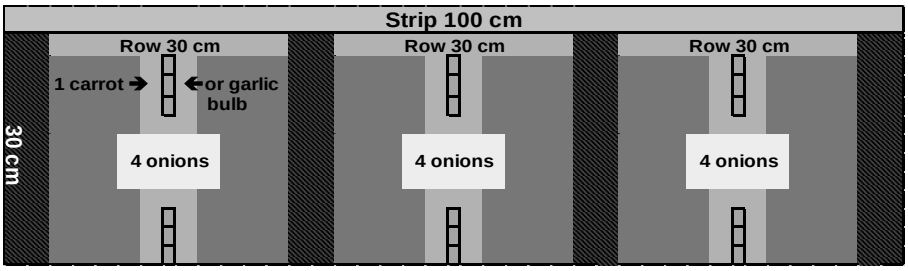

Figure 4. Companion planting design of onions, carrots, and garlic recommended for the UBC Farm.

As seen in Table 4, the amount of space needed to produce the desired products is very small. The production capability is an estimate based on the chosen production design, and the estimated cost is based on seed costs, compost, and labour. Labour is the largest cost and is based on a 3 month growing period and approximately an hour of maintenance a week at 10 $/hour. Garlic has an extra associated production cost and needs to be grown in a greenhouse three months before the other products. Even three small ingredients for one meal require a large amount of labour.. A farmer should be employed to manage this field and could also produce more of the same products that could be sold to AMS food services, Sage Bistro, UBC Farm, etc.

Table 4. Space and cost estimate for the production of carrots, garlic, and onions at the UBC Farm.

Product	Amount Required (number)	Production Capability (plants / m^2)	Production Area Needed (m^2)	Cost Estimate		Total
				Production	Labour	
Carrots	225	25	8	10 $	100 $	110 $
Garlic	300 - 350	15	8	20 $	100 $	120 $
Onions	200	36	8	10 $	80 $	90 $
						320 $

Findings

Out of the 86 ingredients needed in our menu plans, we were able to use our four main distributors to supply 64 (***Appendix 2***). The distributors supplied prices for each of these items, as well as the quantities,

and we were able to calculate the exact amount each item would cost in the quantities we need for our menu. Furthermore, each item was designated Local (L), Semi-local (SL) or Non-local (NL) according to the descriptions given by the distributors. The remaining 22 ingredients had to be surveyed at the Vancouver retail grocery store, Superstore, for an estimate of their locality and price. The majority of the items we had difficulty finding distributors for were milk products and food seasonings. As a group, we recognize that the ingredients priced at Superstore will be inflated through the commercial retail taxes and consumer demand, and that they are incurred within the frame of an unsustainable global foodshed. We recommend that Nancy Toogood continue to search for local distributors to supply these items for their conference.

Each food group represented in our conference menu is designated as local, semi-local, or non-local in Table 5. The percentage of local ingredients varied greatly between these food groups. Overall, 43 of the 86 ingredients were locally grown and produced.

Table 5. Percentages of "local" success from our chosen food menu ingredients by calculating the ***number of items*** obtained locally, semi-locally, and non-locally.

Vegetables			Semi-Local	-----
Local	90.5%		Non-Local	70%
Semi-Local	-----		**Grain Products**	
Non-Local	9.5%		Local	16.7%
Fruit			Semi-Local	50%
Local	100%		Non-Local	33.3%
Semi-Local	-----		**Other**	
Non-Local	-----		Local	21.4%
Meat & Meat Alternatives			Semi-Local	28.6%
Local	87.5%		Non-Local	50%
Semi-Local	-----		**Total Products**	
Non-Local	12.5%		Local	50.6%
Milk Products			Semi-Local	16.5%
Local	30%		Non-Local	32.9%

As shown in Figure 5, 50.6% of the menu items are locally produced, 16.5% are semi-locally produced, and 32.9% are globally produced. Evaluating the effectiveness of our menu through the locality of each menu item has left us quite short of our goal. 50.6 % is still rather far from our projected goal of procuring 80% locally produced foods. An inclusion of the semi-locally produced items only gives us a value of 67%.

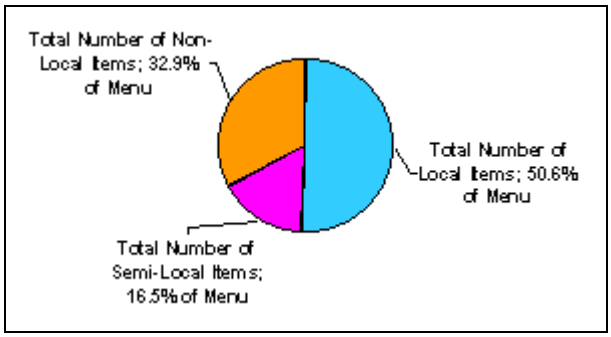

Figure 5. Diagram representing the percentages of local, semi- local, and non-local food items for our conference menu. Budget was calculated estimating 750 guests at $13.29 per peson.

We felt that it was also important to measure the estimated percentage of money our menu items would recycle back into the local, semi-local, and global food economies. This analysis is represented in Table 6. This method of evaluation is a good socio-economic indicator of the success we have had in trying to re-localize the UBC food system. The onions, garlic, and carrots from the UBC Farm were omitted in this analysis, as well as the two items for which we could not obtain any price estimation (***Appendix 2***). We have determined that $6897.90 would be directly recycled into the local BC food system using our menus and distributors, as well a large portion of the $1165.31 from the semi-locally produced food items.

Table 6. Cash Flow analysis to examine the "local" success from our chosen food menu ingredients is shown by calculating the ***Cost of items*** obtained locally, semi-locally, and non-locally. The percentages of money coming from the local, non-local, and semi-local sectors in each category are shown next to the dollar value.

Vegetables			Semi-Local	-----
Local	$1759.6 (95.5%)		Non-Local	$492.14 (61%)
Semi-Local	-----		**Grain Products**	
Non-Local	$82.84 (4.5%)		Local	$4.80 (0.4%)
Fruit			Semi-Local	$849.14 (77.2%)
Local	$1837.80 (100%)		Non-Local	$246.11 (22.4%)
Semi-Local	-----		**Other**	
Non-Local	-----		Local	$999.56 (42.3%)
Meat & Meat Alternatives			Semi-Local	$316.17 (13.4%)
Local	$1981.37 (98%)		Non-Local	$1046.32 (44.3%)
Semi-Local	-----		**Total Products**	
Non-Local	$33.75 (1.7%)		Local	$6897.90 (69.2%)
Milk Products			Semi-Local	$1165.31 (11.7%)
Local	$314.75 (39%)		Non-Local	$1901.16 (19.1%)

Approximately 69% of the total money spent for items in our proposed menu are locally produced foods (see Figure 6). 11.7% of the total menu cost is semi-locally supplied, and another 19% is non-locally supplied. This is a significant change from the previous indication that we only reached 50.6% of our goal.

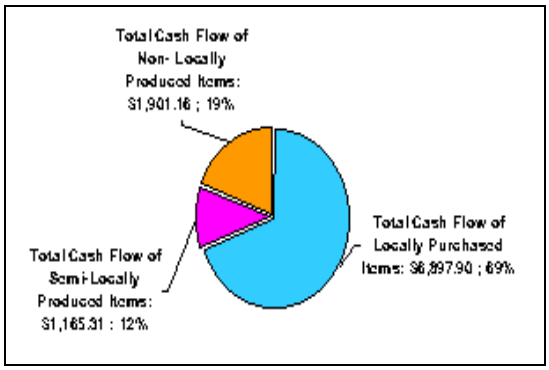

Figure 6. Diagram representing the total amount and percentage in the menu budget that is being spent on foods produced locally, semi-locally, and non-locally.

The variety of approaches that could be used to measure the success of planning a local food conference are each important. Maintaining a high number of locally produced items is the easiest and most general way to indicate progress, however, we have also shown that having a high amount of non-local items does not directly correlate with having a large amount of monetary power within the food system. Although it still may be possible to achieve our 80% local food goal for this conference if we were able to supply our Superstore items through another distributor, we value the fact that our indicators are viable within the framework of the current UBC food system sustainability model.

Discussion

The UBC food sustainability model, developed by former AGSC 450 groups and the core instructional team lead by Dr. Alejandro Rojas, has been criticized by some UBCFSP students as being too arbitrary to actually be a gauge of sustainability progress. However, the development of the local food percentages in the findings our conference design is a good example of how indicators can be designed within future UBC Food Security Projects to make use of the sustainability model. The fact that we were only able to achieve 50.6% of our menu items from a truly local source is a good economic and socioeconomic indicator in our project. Not only is the 50.6% a measured value, it has the potential show progress in the continued effort to relocalize the UBC foodshed if the conference design is manipulated in the future.

The use of sustainability indicators in our project represents a good method of qualitatively evaluating the effectiveness of our conference design to meet our goals of the UBCFSP and all its stakeholders. In the future, a nutritional analysis of such a food conference could provide a better indication of overall food security. There are, however, some limitations of using the UBC food sustainability model. Some of the

model indicators lack a practical method for evaluation in different situations. For example, our study did not contibute and measureable indicators of improved ecological sustainability. With these considerations, our research team generally agrees with the concensus of previous UBCFSP groups, whom all suggest that there is a further need to clarify the effectiveness of the model in applied evaluation projects.

Recommendations

- Continued Cooperation with UBC services – AMS Catering and associated campus services should continue to work with AGSC 450 students & Farm Staff developing a model that could be used to market future conferences. Further participation and integration of the UBC food system will make possible the goals of the AGSC 450 UBC foodshed relocalization project.
- UBC Farm & Labour – The farm is not limited by growing space to produce food. Capital investment into farm wages would help increase the sustainability of the UBC Farm. Greater buisness trade between UBC food distributors like the AMSFBD would encourage the growth and development of the UBC Farm as a powerful educational resource.
- Farm volunteers & conference volunteers – Students have potential to increase labour force at the UBC Farm, but need proper supervision and organization. Further development of the pilot internship program developed by Stephanie Fung may increase the regulation of the farm buisness and provide a more consistent labour base.
- Corporate sponsorship – British Columbia, and Vancouver in particular, is home to many businesses that could act as potential sponsors. Involvement of sponsors in the development of a AMSFBD local food conference would help alleviate some of the financial burdens associated with locally produced food.
- Create stronger ties with local food distributors – Effort on behalf of the AMSFBD to supply a greater proportion of local foods in their event menu planning can create a positive reinforcement loop with distibutors to actively seek out and supply more of these local products. Thus, the UBC Food Systems Projet has the potential to postitively influence the relocalization of the surrounding Vancouver foodshed, and pioneer a more sustainable system of responsible food distribution.
- UBCFSP and the food sustainability model – The UBC Food Security Project should continue to assess the value of the previously developed food sustainability model within the applied projects for the fifth and final year of the study.

Conclusion

The findings and recommendations of our research group's examination of the feasibility of holding a local food conference for the CFSC in conjunction with AMSFBD, are based on our determination that it is financially feasible to hold the conference. Through analyzing past research projects on the feasibility of relocalization and on the UBC Farm, and through extensive review of the literature and data, we have determined a budget of $17.75 CAN per person, (about $13,312.50 CAN for the estimated 750 attendees),

is sufficient to fund the event. After extensive review of the various distributors located within the Greater Vancouver Area, we have chosen to go with four distributors as to avoid excessive distribution costs and further environmental damage due to fossil fuel consumption and carbon dioxide emissions. Having used the definition of local being foods produced and processed in BC, we then were faced with the dilemma of how to define foods that were processed in BC but not grown in BC, using the term semi-local to define these products. Having categorized the food products used into the three categories of: Local, Semi-Local and Non-Local, we then were able to analyze our findings based on number of items and cost of items to determine whether or not we were able to meet our decided upon goal of having 80% of our food products defined as local. Reviewing these findings, we have determined that without combining the terms local and semi-local we were not able to meet our goal with reference to the cost associated or number of items purchased. We were able to meet the goal with reference to the cost of the items when combined.

In exploring options for the use of the farm, we had initially wanted to design our menu so that one ingredient per recipe would be from the farm, however, our research group discovered that there are many challenges that must be considered when using the farm, and we therefore decided upon the use of the three ingredients (carrots, garlic and onions), as to best utilize the farm space and minimize production costs. In order to use the farm it has been determined that a contract must be set up ahead of time, as to allow for adequate funding of staff and cultivation of the land. It is our hope that after reviewing this paper, we will have abolished some of the misconceptions that AMSFBD may have in regards to local foods, and therefore persuade AMSFBD to become a more active contributor to achieving long-term sustainability of our UBC food system. [redacted]

Appendix 1: Example Recipe

Recipe Category: Local Food Conference- LUNCH

Squash Soup

Yield: 500 **Preparation Time: 60 min**
Cooking Temp: N/A **Cooking Time: 65 min**

INGREDIENTS	*AMOUNT*	*AMOUNT OTHER*	*STEP*	*DIRECTION*
			1	Preheat oven to 350 F
Butternut or Acorn Squash	150 kg		2	Slice in half
Olive Oil	2485 L		3	Rub on cut faces of squash
			4	Place squash cut side down on baking sheets and roast in the middle of the oven for about 40 minutes
Unsalted Butter	1.5 L		5	Melt in soup pot over medium heat
Onion (diced)	55			
Carrot (peeled and diced)	115		6	Add onion and carrot, sauté for 4 minutes
Garlic Cloves (diced)	175			
Curry Powder	800 mL		7	Reduce heat, add garlic and curry powder, sautee for 2 minutes longer
Chicken Broth	85 L		8	Add chicken broth
			9	Scoop the squash out of its skin and into the soup pot. Heat on medium high and bring to a gentle boil. Cover and simmer for 20 min
			10	Remove from heat and puree.

Cream (35%)	15 L		11	Add right before serving

Appendix 2: Ingredient List

INGREDIENT	AMOUNT	DISTRIBUTOR	PRICE	ORIGIN
- VEGETABLES -				
Broccoli florets	15 kg	DO	136 26	L
Cabbage, purple	30 kg	DO	169 00	L
Carrots	13 5 kg	UF	110 00	L
Cucumber	1 5 kg	DO	19 00	L
Eggplant	14 kg	DQ	57 75	L
Garlic	1 kg	UF	120 00	L
Green beans	20 kg	DO	182 61	L
Green onion	4 5 kg	DO	56 50	L
Green pepper	10 kg	DO	140 00	L
Mushrooms	2 0 kg	S	7 58	L
Onion	22 kg	UF	90 00	L
Parsley	1 5 kg	DO	6 10	L
Potatoes	12 kg	DO	11 00	L
Purple pepper	4 5 kg	DO	43 00	L
Red potatoes	35 kg	DO	127 82	L
Romaine lettuce	75 kg	DO	471 00	L
Spinach	8 5 kg	S	51 94	NL
Squash	60 kg	DO	243 00	L
Tomatoes, diced, canned	10 kg	DO	30 90	NL
Tomatoes, fresh	30 kg	DO	81 25	L
Zucchini	1 kg	DQ	7 75	L
- FRUIT -				
Apples	52 kg	DO	57 30	L
Cantaloupes	65	DO	154	L
Honeydew	50	DO	227	L
Peaches, sliced (fresh)	35 kg	DO	472 00	L
Raspberries (frozen)	5 5 kg	DO		L
Watermelon	35	DO	927 5	L
- MEAT AND MEAT ALTERNATIVES-				
Chicken Breasts	50 kg	SC	372 90	L
Chicken broth	12 5 l	DO	50 86	L
Eggs	87 dozen	SC	176 91	L
Hazelnuts	1 5 kg	DO	19 40	L
Peanut butter packages	7 5 kg	DO	33 75	NL
Round roast	70 kg	HF	882 00	L
Sliced smoked turkey	12 kg	SC	162 62	L
Turkey sausages	28 kg	HF	316 68	L
- MILK PRODUCTS-				
Butter, unsalted	11 kg	S	92 25	L
Cheddar cheese	4 5 kg	DO	53 00	L
Cream	75l	S	216 75	NL
Cream cheese	9 kg	S	62 88	NL
Milk	150 L	S	169 50	L
Mozzarella cheese	6 kg	S	60 73	NL
Parmesan cheese	1 2 kg	S	26 28	NL
Ricotta cheese	6 kg			
Sour cream	2 5 kg	S	10 36	NL
Sweetened condensed milk	280 oz	S	52 74	NL
Sliced cheeses	96 Slices	S	62 40	NL
- GRAIN PRODUCTS -				
Bran Flakes	8 kg	DO	9 53	NL
Brown bread	24 loaves	DO	239 04	SL
Corn starch	1 5 kg	S	2 40	L
Croutons	500 g	S	2 40	L
Lasagna noodles	400 oz	DO	229 43	SL
Long grain white rice	3 5 kg	DO	13 50	NL
Multi grain Pancakes	6 5 kg	DO	116 37	SL
Oats	25 l	DO	47 30	SL
Rice Krispies	10 kg	DO	180	NL
Self-rising flour	3 75 kg	DO	7 00	SL
Sourdough bread	14 loaves	DO	210 00	SL
Wild Rice	3 0 kg	DO	43 08	NL
- OTHER -				
Apple cider vinegar	6 l	DO	19 14	NL
Black pepper	500 ml	S	3 90	NL
Bottled water	1500 btl	DO	825	L
Brown sugar	16 5 kg	DO	41 25	SL
Cinnamon	125 ml	DO	1 80	NL
Coffee – Regular	250 l	DO	108 00	SL
Coffee- Decaf	125 l	DO	60 00	SL
Curry powder	500 ml	S	13 40	NL
Dijon mustard	2 l	DO	20 32	NL
Graham cracker crumbs	1 8 kg	S	6 84	SL
Ground Taragon	25 g	DO	15 00	L
Honey	4 l	DO	38 00	L
Lemon juice	1 5 l	DO	13 28	SL
Maple syrup	5 L	DO	63 00	SL
Mayonnaise	5 l	S	16 6	L
Mustard powder	150 ml	S	4 96	L
Olive oil	20 l	DO	379 20	NL
Orange juice	35 l	DO	373 00	NL
Pineapple juice	4 l	DO	16 60	NL
Poppy seeds	500 ml	S	1 90	SL
Raspberry jam	10 kg	DO	100 00	L
Salt	725 g	S	2 26	NL
Tea	1000 bags	DO	185 80	NL
Vanilla	175 ml	S	1 33	NL
White sugar	10 kg	DO	21 90	SL
White vinegar	1 l	S	0 97	NL
Worchestershire Sauce	375 ml	S	3 2	NL
Yellow mustard	2 5 l	DO	25 40	NL

LEGENDS:

Distributors:
Discovery Organics (DO); UBC Farm (UF); Sysco (SC); Hillside Farms (HF)

Origin:
Local (L); Semi-Local (SL); Non-Local (NL)

Appendix 3: Advertisement Table Tents

Appendix 4: Sponsorship Letter

Fresh Is Best: Sustaining the Local Food System

With a Local West Coast Flavour

March 16, 2005

Dear (**insert name here**),

AMS Catering at the University of British Columbia is interested in hosting a local food event on campus. We are a group of students from the Faculty of Agricultural Sciences who have been assigned to investigate whether this is feasible. Currently, we are establishing partnerships with local distributors to supply BC grown produce for our conference, but we also need support from organizations, such as yourselves, who support the concept of local food systems. We are hoping that your business might be interested in sponsoring our endeavour to enhance the partnership between local businesses and high quality local food providers.

AMS is interested in hosting this type of event in August. As of now, there is not an event scheduled for this summer, but the plans we are creating will serve as a template for future endeavours and potentially assist the AMS in expanding its catering menu. By sponsoring this exciting event, your organization will benefit from the hundreds of people who will be exposed to the advertising we will provide. This type of conference is estimated to attract approximately 600-800 people, and, once established, more local food events may be scheduled regularly. The publicity from sponsoring this important, ecologically-sound concept of local food systems could positively enhance your community image and business. We are happy to discuss with you what type of sponsorship you can provide. We hope that your organization is interested in participating.

Sincerely,

(Whoever sends this out)
Include contact information

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