

UBC Social Ecological Economic Development Studies (SEEDS) Student Report

**The University of British Columbia Food System Project (UBCFSP) Scenario 2:  
Incorporating Seasonal BC Food Items into Campus Food Provider Menus**  
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**The University of British Columbia Food System Project (UBCFSP)**  
**Scenario 2: Incorporating Seasonal BC Food Items into Campus Food Provider Menus**

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**Term Paper**



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## **ABSTRACT**

Our group's contribution to the University of British Columbia Food System Project (UBCFSP) explored methods of incorporating more seasonal and local BC food items into UBC menus. Over the course of our degree as students from the Faculty of Land and Food System, we have learned the importance of sustainability, especially pertaining to food systems. UBCFSP is an opportunity for students to practice their previous four years of education with a significant goal of the project being to use it as a model for the challenges of the larger, global food system. It is hoped that through the progress of the UBCFSP, UBC will provide more sustainable sources of food, and that consumers on campus will more socially, and environmentally-responsibly practice food purchasing. Our group (group 6) researched the feasibility of incorporating local foods into the UBC food establishments' menus. We chose two very different campus food outlets, Café Perugia and 99 Chairs as our main focus. The specific foods that we looked into were root vegetables, eggs and chicken. The objectives did not simply require us to substitute ingredients into existing menus with local items, but we also attempted to meet UBC food provider's quantity, quality, seasonality, and cost requirements. In addition to the analysis and suggestions our group created for the UBCFSP, we also compiled a "local/seasonal foods" recipe bank for our two case studies to implement in the future. We designed a food logo to clearly represent local food items in new menus to assist in the marketing of local foods. Finally, we also investigated the possibility for the UBC Farm to build a root cellar with the purpose of increasing the availability of more off-season vegetables from the farm onto campus.

## INTRODUCTION

Today food travels farther and is controlled by a smaller number of global entities than ever before (Halweil). In the United States, food travels an average of 2,500 to 4,000km before reaching the consumer's plate (Halweil). The increasingly sprawling nature of our food system has been viewed as a result of technological advances which have allowed for more distant, less costly shipping and have increased the duration of storage times (Halweil). Cheap gasoline and the incorporation of transportation subsidies have facilitated the expansion (Halweil). This globalization of the food system is threatened by multiple environmental, social and economic menaces which hinder its sustainability.

Longer distance transport is associated with an increase in fossil fuel burning and subsequent greenhouse gas emissions that have been shown to contribute to climate change (Halweil). In addition, when food production is controlled by a small number of global entities there is pressure to maximize capital and labor efficiency. To do so these producers often rely upon intensive agricultural practices with known ecological consequences, such as reduced biodiversity due to mono-cropping and water contamination due to an increased use of fertilizers and agrochemicals (Lang and Heasman). In global food systems, people are becoming increasingly distant from their food, resulting in difficulties identifying and making connections with the producers and processors of their food (Lieblein). Individuals therefore may place less priority on agriculture, food systems, natural resources, and long-term sustainability (Lieblein). In a global food system a smaller percent of the purchasing cost of a food item is being re-allocated to the farmers (Pretty). With reduced incomes for farmers, there is often less financial contribution to local economies (Pretty). Additionally, without government subsidies, many

smaller local farms cannot compete with the larger global competitors, and failure to do so will result in the loss of valuable employment for many communities.

Sustainability is a holistic concept in which we integrate the long-term viability of ecological, social and economic factors with the ecosystems of which we belong in order to enhance and protect it rather than degrade or destroy it (University of California). The possible long-term effects of continuing to operate an unsustainable global food system have generated grave concern. In many respects, the University of British Columbia (*UBC*), food system serves as a microcosm of the larger global food system. Thus, the UBC food system can assist in evaluating the ramifications of operating a global food system, as well as permitting us to explore possible alternatives. To complete this task, the University of British Columbia Food Systems Project (*UBCFSP*) was developed in 2002. The UBCFSP is a five year community-based research project to assess the sustainability of the UBC food system. The UBCFSP collaborators have proposed research designs, models, methods, and indicators for analyzing the sustainability of the food system.

In past years, students have examined the vulnerabilities in our food system as a result of people becoming increasingly removed from their food sources. In this the 5<sup>th</sup> year of the UBCFSP, as a member of scenario 2, our task was to increase local food procurement practices on campus. To complete this assignment we have explored and will propose how we can incorporate more seasonal BC food items into the existing campus menus of Café Perugia and 99 Chairs. To facilitate this transition, we have explored what has been accomplished to incorporate BC food items into off-campus menus. In our proposal we have taken into account the factors which govern UBC's food procurement requirements, namely; volume, quality, seasonality and price.

## **PROBLEM DEFINITION**

As a group of scenario 2, we were given the task of increasing the availability of local food on campus. Our group defines local as, food grown within BC, for economical, social and environmental purposes. To tackle the problem, we began with reviewing the work that had been done previously by our colleagues of the UBCFSP. In spring 2004, group 17 started a series of surveys that looked at the feasibility of food re-localization from ecological, social, and economic aspects. Furthermore, group 2 in summer 2004 investigated local fruits and vegetables, and found that “83% of fresh produce ordered by UBC Food Services and AMS Food and Beverage Department can be obtained from a local source”. Additionally, some local products were found to be of the same quality and price as non-local products that are currently purchased by these UBC food providers. Group 6 in 2005 analyzed other common items used by food providers such as eggs, poultry, and beef, and found more distributors providing these items from both locally and sustainable produced sources. The findings from our colleagues have demonstrated the feasibility of increasing the availability of local food on campus in terms of volume, seasonality and price. Based on information provided in the feasibility analysis, our partners in the UBCFSP showed their interest in increasing procurement of seasonal BC food items. One way of initiating change was to analyze current menus and incorporate more local root vegetables into them. However, the accomplishment of our task is not simply to substitute ingredients in existing menus with local items, but to meet UBC food provider’s quantity, quality, seasonality, and cost requirements.

## **VISION STATEMENT**

It is our underlying values that determine the way we interpret sustainability and provide the “lenses” through which we, as individuals, view the UBC Food System. Therefore, before



we can begin to define the pathway to sustainability, we must establish the collective values of our team. As a group, we are reflective of the UBC student body, composed of members of different cultures and backgrounds. As such, each member has brought to the group their unique values and views for the UBC Food System. From these differing perspectives we have formed a utopian view of what a sustainable UBC Food System should encompass.

As a group our desire to make the UBC Food System sustainable is founded on weak anthropocentric principles. Weak anthropocentrism is a value system that acknowledges the interconnectedness of humans and other species in the natural world (Norton). While we place a higher value on our own species, we must also consider that our continued survival and well-being as a species depends on maintaining a healthy ecosystem in which to live (Murdy). In this regard, making the link between the well-being of ourselves, and our surroundings allows us to recognize that by enabling ecological sustainability we will also benefit humanity. In creating our vision for the UBCFSP, we realized that before we can strive for long-term viability we must first acknowledge this linkage of our values, which exists within the larger system that is our natural world.

First and foremost, we believe that a sustainable UBC Food System should rely as much as possible on local food production, processing, distribution, and marketing with the use of crops that are suited to the local agricultural environment and climate, particularly the UBC Farm. Additionally, foods should only be selected from producers who utilize both socially and ecologically conscious production methods. In order to facilitate this transition to more sustainable practices, we feel it is necessary that farmers receive fair prices for their products, in turn making these foods affordable and accessible to the members of the UBC community.

With respect to our views on community and individualism, we feel that our existence will be strengthened by a coordinated effort that benefits the community as whole. Re-localization of the UBC Food System allows for the re-connection between farmer and consumer, creating a feeling of community-belonging and heightening awareness of local food production, hopefully promoting our cause for local foods.

## **METHODOLOGY**

Our project goal was to incorporate locally produced and seasonal foods into the existing menus of UBC food providers, encouraging a realistic and highly feasible approach to supporting local food consumption on campus.

We utilized case studies of two UBC food outlets as the main research method for our project. This allowed us to gain an understanding of the complexity of the problem, and to add to the bank of knowledge already known through previous groups' research. To examine real-life situations and provide the base for the application of our ideas, we chose Café Perugia and 99 Chair as our two case studies. Our major research question was how can we incorporate local foods into their menus? Before targeting this question, we conducted a literature review to establish what research had been previously conducted to guide us to a more focused research objective. We also collected data through examination of current menus and interviews with the managers from our two case studies. By examining the current menus, and outside literature we determined which foods were seasonal, and which foods were locally available to implement into the existing menus. After choosing specific foods of interest, we checked current prices and quantities required, and then compared them with those provided from local producers and suppliers. Based on the data we obtained, as well as that from previous papers, we were able to suggest some realistic changes to menu items for our two case studies.

We also investigated the possibility for the UBC Farm to have a root cellar on site. UBC farm is the closest local provider for food outlets on campus, and building a root cellar in UBC farm could increase the availability of more off-season vegetables to provide campus produce year-round.

Lastly, we briefly examined an off-campus Vancouver restaurant called Monsoon that offers local foods. This provided a real-life model to link to the UBC Food System Project and our two case studies to the greater picture of global food systems. Monsoon is located at 2526 Main St. It is an east-west brasserie, which blends Asian flavors with modern West Coast bistro style cuisine. It was their chef, Patrick Lynch's idea to serve local produce and organic meats whenever possible (Brian). Freshness is their primary reason for Monsoon to serve local organic food. Because Monsoon is very flexible with their menu, they do not have any problem for finding suppliers and they do not consider seasonality as a barrier for them to serve local food.

When asked about the feasibility of having more restaurants serve local foods or what would influence people to purchase local food, Monsoon's manager, Brian, believes budget would be the principal determining factor (Brian). Most suppliers require restaurants to order a fixed amount for a better price. Therefore, it would be difficult for those restaurants to order local food, because local food is more expensive and the production is relatively unstable.

## **RESULTS & DISCUSSION**

As mentioned earlier 99 Chairs and Café Perugia were our two case studies. These two establishments were selected because they represent opposite ends of the dining experience spectrum when it comes to volume, service, and style on campus; 99 Chairs being a high volume, fast-food, pub style restaurant, while Café Perugia being a higher-end less busy dining experience. The specific foods that we examined in detail while conducting a literary review, a

menu analysis, and manager interviews were root vegetables, eggs and chicken. However, there were some obstacles that were faced when trying to incorporate different menu items and ideas, and these are mentioned throughout the following recommendations.

### **Café Perugia:**

#### **Results**

Café Perugia is located at the Life Sciences Centre. It considers itself a higher-end establishment when compared to other food outlets on campus. Its menu contains a variety of items, all of which are homemade fresh in their kitchen on a daily basis. The menu at Café Perugia consists of breakfast sandwiches, paninis, wraps, quarter-chicken meals, pasta, pizza, quiches, salads and rice bowls. Their best sellers being the panini, chicken pie, pizza, Greek-style ¼ chicken and penne with meatballs (Midha). A complete copy of Café Perugia's menu plan can be found in the Appendix 1.

Chicken is a very popular menu item at Café Perugia. They use 15 quarter chickens per week, and are supplied with the following chicken parts: breast, wing, leg and thigh (Midha). Unfortunately, however, Café Perugia does not use free-range chicken in the current menu due to the higher cost (Midha).

Eggs are used in breakfast sandwiches only (Midha). Breakfast sandwiches at Café Perugia are made with bread, ham, cheese and eggs. Eggs are supplied in liquid form every 2-3 weeks in 1- 2L cartons (Midha). Café Perugia does not have a stovetop and therefore the eggs are cooked by microwave for they do not have the necessary facilities to fry eggs (Midha). They feel that health is important and do not like the idea of cooking eggs with butter or lard and therefore they only use olive and canola oil (Midha). Similarly to free-range chicken, Café Perugia does not use free-range eggs in the current menu due to the higher cost (Midha).

Café Perugia receives a small order of vegetables, with the number varying based on consumer demand (Midha). For example, they generally receive two pounds each of apples, oranges and bananas every two days and 15 lbs of tossed salad that usually sells in a day (Midha). They receive around ten heads of eggplant, six green and red peppers, five pounds of zucchini, and five pounds of bok choy which last for a few days (although Café Perugia does incorporate a variety of vegetables into their menu, they do not use many root vegetables) (Midha). When compared to bigger facilities such as Totem or Vanier, their chicken, egg, and vegetable orders are significantly smaller amounts, but they receive the same prices.

Discussion:

The food and menu items listed in the results are typical menu items for Café Perugia, and have become the expected dining items for Café Perugia's clientele. Although manager Josie Midha did express her willingness and enthusiasm to add local foods to her menu items, she was not certain of the present public demand for such items. Josie was open to the idea of our group compiling a recipe bank of local foods for her use. She values food diversity in selection and is proud to serve menu items (such as locally produced foods, and organic products) in a fashion that is not seemingly common on the UBC campus (Midha).

In regards to chicken parts, Café Perugia does not want to change the present chicken parts they use as they feel these chicken parts (e.g. legs, thighs, ¼ lb chicken, etc.) are preferred and expected by clientele of a higher-end restaurant, as well as aesthetically attractive to customers. As mentioned above, chicken is an essential part in many of the popular items, such as the Greek quarter chicken. Since chicken is used often in items that sell well, and also due to Café Perugia's customer partiality towards to certain chicken parts used, our group felt that it is best to incorporate chicken by keeping consistent with the present recipes that Café Perugia uses.

Unfortunately, with the current high discount rate that Café Perugia receives from the UBC Food supplier there is almost no opportunity for another supplier to offer free-range chicken at a lower or equal cost. The main reason Café Perugia does not use free-range chicken and eggs, is for one reason – cost. Our group feels that Café Perugia is not willing to pay more for these items, simply because they receive the same prices for their chicken and eggs as Vanier and Totem, from the same supplier even though they order much less (Mihda).

Café Perugia does not see how they would be able to obtain prices as low as their present prices if they were to use a different supplier. It could also be because suppliers must be authorized through UBC. This can make it difficult to contact a supplier different from the ones they already use. Additionally, Café Perugia also does not want to increase their current prices as the majority of their customers are students, and while they are a “higher-end” restaurant they do not want to be considered the most expensive place on campus (Midha). Café Perugia’s lack of a stovetop may also be an obstacle for future groups to look into. However, we feel that there is no need for Café Perugia to use recipes that require a stovetop. Our group therefore, does not find Café Perugia’s lack of a stovetop a large obstacle for implementing more local foods into their menu.

Café Perugia does not use local root vegetables in the current menu due to the higher cost, and their opinion is that in general there is little consumer demand for root vegetables (Midha). However, the manager claims to value food selection diversity and would like to have a bank of recipes to be able to implement into their menu at opportune times (Midha). Ideas for different types of fillings for present menu items are also welcomed. She is open to the idea of locally produced root vegetables in things like soups, stews, and marinated grilled root vegetables (Midha). However, they feel that root vegetables are winter vegetables and would not

be popular in spring or summer. In the spring they like to serve items such as asparagus salads (Midha).

Our group feels that this would be beneficial for incorporating local root vegetables into the Café Perugia's menu, and that it will compliment the UBCFSP as there is a much higher student volume during the fall and winter months, putting greater demand on UBC food establishments. We would, however, recommend the continued root vegetable menu implementation during the spring since there is still a high student volume and root vegetables may also sell during such a time (i.e. March, a spring month, is nutrition month with the vegetable of the month being squash for 2006). Although Café Perugia is open during the summer from May – June, and also the last week of August, there will be a lower student volume and less demand in general, therefore this not being a favourable time to implement local root vegetables.

Café Perugia also sells baked goods and coffee. Presently, they use Torrefazione Italia (a Starbuck brand of coffee), which is a high end Italian coffee that no other place on UBC sells (Midha). While the focus of our paper is on chicken, eggs and root vegetables, we felt that local coffee (perhaps fair-trade and organic brands) and local baked goods could be an area for future groups to explore to incorporate into their menu. However, baked goods are presently delivered to Café Perugia by UBC Food Services, and the sale of Torrefazione was directed by UBC Food services to be implemented under their jurisdiction while in contracts with Starbucks (Midha), so these obstacles may be a challenge for future groups wishing to explore this area of menu modifications. Another point our group finds important is that the staff working at Café Perugia are well paid, approximately \$15/hr plus benefits (Midha). Their food and labour costs are already quite high and therefore, if their food costs increase then labour wages may have to

decrease and this is not something that they want to happen. In addition, Josie feels that at UBC there is a general lack of demand for local, free-range chicken and eggs and root vegetables (Midha), so this maybe (other than cost) a strong deterrent and a primary reason why Café Perugia and other UBC food outlets may not be as enthusiastic to incorporate local produce and foods.\*

### **99 Chairs:**

#### Results

Located on Main Mall and Agricultural Road next to David Lam Center, resides the youthful, cheery upbeat '99 Chairs' restaurant on the UBC campus. It is a fully licensed liquor establishment run by UBC Food Services (UBCFS) that has a friendly atmosphere that serves pub style foods. It is a large restaurant with high a volume of customers, with a quick service style. The hours of operation are Monday to Friday 8am - 8pm and the summer hours are 7:30am- 4pm, thus it is open all year round for business for UBC students and staff.

An interview with the Manager, Brian, informed us of some important numbers regarding volume, quality and price when it comes to ordering food for the restaurant. Brian mentioned that approximately 1000 people visit the restaurant everyday, whether it is for a cup of their fair trade "Seattle's Best Coffee" or for breakfast, lunch or dinner. It was also mentioned that customers like to be in and out of the restaurant as fast as possible as well as they want menu items to be affordable.

The breakfast menu has a selection of four items, which include breakfast sandwich, a full breakfast (two eggs) a mini breakfast (one egg) and Belgian waffles. The lunch and dinner

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\* A binder of local root vegetable recipes, our group's compilation for a recipe bank for Café Perugia to implement into their own existing menu has been also submitted as a part of this project.



menu have a wider selection from burger, sandwiches, panini's, salads and pasta. Because our group decided to only choose local root vegetables, egg and chicken, there were a few items we look at in great detail.

One of the most important aspects of incorporating local foods into this menu was to determine the volume that is needed to supply the demand of each food item. 99 Chairs alone orders approximately \$200 a day of fresh cut vegetables from Allied foods to supply the menu options, as well as they order about 50 pounds of chicken breast a week and approximately 15-20 pounds of wings (Brian). When it came to viewing the volume and price of eggs it was noted that the restaurant goes through almost 15 dozen eggs every two days and the cost of each egg worked out to be about 6.5 cents each, which is very inexpensive. The main root vegetable that is consumed there is the potato in the form of French fries, and they came pre-cut, frozen from McCain foods.

Discussion:

After collaboration of the results we asked if the restaurant was interested in carrying some free-range eggs as an option for breakfast and free-run chicken breast as an option for burgers, as well as incorporate new menu ideas for root vegetables. The response was a concern of keeping cost down as much as possible, for there is a price cap established by UBC foodservices of \$7.75 per menu item (Brian).

From previous work done by colleagues of AGSC 450 information regarding eggs and chicken helped inform us of the details relating to suppliers and costs. It was noted by Group 6 of Spring 2005 that analysis of their findings for the feasibility of chicken and eggs suggested that UBC already obtains these products from local suppliers and UBCFS utilize eggs from Vanderpol's Eggs Ltd., which are delivered via Neptune Food Services (Group 6 spring 2005).

This piece of information promoted the idea of then going the next step and possibly looking at free range eggs for a 'healthier' menu option for breakfast and the free run chicken for the burger option. (Group 6, spring 2005). Upon observation of a comparison chart created by group 6, it was observed and expected that the cost of these two products were more expensive. For instance regular boneless skinless chicken breast is purchased at \$8.36/kg versus the free run boneless skinless chicken breast can be purchased for \$14.30 /kg from Kidd Bros. (Group 6, Spring 2005). When comparing the prices of eggs, large eggs are purchased at \$1.94 per dozen and free run option can be purchased for \$3.10 per dozen (Group 6, spring 2005). Although this option of free run are considerably more expensive, the possibility of having free run product of chicken or egg at a slightly higher cost could be a positive option for a customer of '99 chairs'. Thus our group suggests to '99 chairs' having the option of free-range eggs at a slightly higher cost as an option for a breakfast. This can be effectively done by advertising; for instance paying 50 cents more for the full breakfast could make it a healthier selection by substituting the regular eggs for free-run. Also a suggestion for the restaurant is that they trial having free run chicken burger as a special item for the day for lunch on the specialty board at a slightly higher cost than the regular chicken burger. This could give the restaurant an idea to see what kind of response and demand they receive from offering such items. We feel that if the item sells well that there should be the possibility of incorporating the free run options into their regular menu. A proposal for future groups working on this project is to follow through with this idea and help with marketing and promoting the free-range products in the restaurant and throughout campus.

The other area of interest that our group sought out was the possibility of incorporating local seasonal root vegetables and over-wintering crops in to the menu. We looked at specifically UBC Farm grown vegetables such as carrots, beets, kale, and cabbage and squash. The menu

ideas that we decided on included a selection of different local soup flavors, such as; 'Carrot, Ginger and Beet' or 'Tuscan Winter Vegetable' or the famous 'Potato Leek' soups (see binder for recipes). These are all local winter grown vegetables at the UBC Farm and therefore our group suggests to '99 Chairs' that these soups have a trial period in the restaurant as a special daily choice, and to advertise them as a BC local choice for lunch or dinner at a reasonable cost.

The barrier here is the lack of supply at present on how much quantity the farm can supply of each vegetable. However with the collaboration of other scenarios ideas of increasing production of the farm, and with the use of the root cellar (elaborated on later) the supply of vegetables for the menu items can hopefully keep up with the demand.

Upon investigation with the seasonality and growth of local root vegetables, our group was initially interested in looking into 'yam' or sweet potato to incorporate them into the menu to make them an option of fries for the restaurant. Unfortunately after speaking with Mark Bomford from UBC farm we found that it is not typical for the province of BC to grow this root vegetable. The reason the vegetable is hard to grow is due to the high heat growth condition and therefore most sweet potatoes are imported from California, thus not defining our definition of local (Bomford). Based on California trials, they need about 800 GDD above 15C to reach maturity, and the growing conditions in BC do not even hit 200 GDD growing degree days above 15C in a growing season. Even Osoyoos, the hottest place in Canada, only gets about 600-700 GDD above 15C in a growing season (Bomford). However, Mark did state that it is not impossible for the growth to happen and that there is opportunity in the future to look into growing the root vegetable on the farm.

### *The Case of Root Cellars – underground galvanized culverts*

One method to incorporate more seasonal BC (and sustainably produced) food items (most notably root vegetables) into current menus of campus food outlets could be through the use of a root cellar at the UBC farm. At present, UBC food providers have been receptive to the concept of increasing purchase of local foods, however, lack of information and means to do so has been a constraint to the creation establishing an economically stable root cellar. The construction of a root cellar at the UBC Farm will help contribute towards the goal of providing year-long produce to food outlets on campus. According to Mark Bomford and Greg Rekken, UBC Farms' production coordinators, root crops such as carrots, beets, and over-wintered crops such as kale, chard, brussel sprouts, broccoli, and cabbage can be stored even from late fall to spring through the use of root cellars (Bomford). Furthermore, the location of a root cellar on the UBC Farm will help add to ecological sustainability of UBC Food Systems (UBC Farm, 2006). Although the UBC Farm is not organically certified, it has fully upheld to the COABC policies pertaining to crop management since the year 2000 (UBCF, 2006). As the UBC farm methods are modeled around sustainable organic practices, produce that comes from the UBC farm's root cellar support environmental sustainability; they are ecologically produced products (UBCF, 2006). According to the UBC Farm Production Coordinators, construction of a root cellar is feasible, and highly supported (Bomford). As a root cellar does not need such utilities as connection to power lines, the proposal is completely within building regulations for the land (Bomford).

#### *Construction & Processes:*

Root cellars are underground storage facilities used to preserve fruits and vegetables (Durtschi). These establishments have been used for over a hundred years to keep fruits and

vegetables from spoiling due to high temperatures (Durtschi). By extracting the low temperatures of the earth, root cellars provide an ideal cool place to store food throughout the year, especially during the summer months (Durtschi). “People not only put potatoes and carrots in their root cellars, but their preserved meat, milk and cream, fruits and vegetables – literally anything they needed to keep cool” (Durtschi). During the summer months, temperatures in a root cellar are usually 30 to 40 degrees F colder than daytime temperatures (Durtschi).

In building a root cellar there are many aspects that one needs to consider (Durtschi). Temperature is of the highest concern as a cold temperature is essential for food preservation (Durtschi). “You must go down a full 10 feet before complete temperature stability is reached” (Durtschi). Also prevention of heat access during warmer months can also increase storage effectiveness (Durtschi). This can be accomplished through using good insulation and building the cellar under shade (trees or at the north side of a hill) (Durtschi). In preserving fruits and vegetables, maintaining constant humidity is also essential, as low humidity causes food deterioration - the best method for maintaining humidity having an earth of dirt floor within the cellar (Durtschi). Air circulation is also essential as air vents prevent spoilage or sprouting through maintaining proper humidity and preventing condensation (Durtschi). As herbaceous material naturally releases gases that promote spoilage and ripening, ventilation is needed to maintain preservation (Durtschi).

With respect to the Food Systems Project, a large storage volume is necessary. This leads our group to promote a modern advanced underground storage facility: galvanized culverts (Durtschi). Underground storage spaces can be now constructed using galvanized culverts – thin steel pipes that are lightweight, durable, rustproof and relatively inexpensive material (Durtschi). In terms of storage space, culverts provide volume beginning at 2400 cubic feet (Durtschi).

There is no theoretical limit to the size of an underground culvert (Durtschi). In terms of labor, culverts can be pre-purchased and are relatively inexpensive, where a 2400 cubic feet culvert would only cost \$5000 to \$10000; this is 50 foot long, 8 foot diameter culvert (Durtschi). These materials can be bought cheaply because they are mass produced for other industrial operations (Durtschi).

Our group proposes that a 2400 cubic feet culvert will become the model for our root cellar at the UBC Farm. This would ensure an adequate volume not only for the present produce production, but also for a successful response to future demands of UBC Food outlets. Furthermore, our group believes that other local farms (with similar standards of the UBC Farm), could also store their produce in the UBC root cellar to effectively support and incorporate local BC Food items into campus menus. According to UBC Farm Program Coordinator Mark Bomford, this concept is feasible and supported. Please see our appendix for more detailed construction plans of a Root Cellar on the UBC Farm.

## **RECOMMENDATIONS**

Our group has created four main areas for recommendations for the UBCFSP. Our first area of recommendation is towards the construction of a root cellar at the UBC Farm. A more in depth economical review of a root cellar may be necessary to ensure that it will be economically feasible given the Farm's restrictive budget. A root cellar, in addition to being a functional place for produce storage, should be a place of learning and education for the farm. Our group would like to see that produce suppliers (other than the UBC Farm) use the root cellar to store vegetables to be consumed on campus on site.

Pertaining more directly to our original problem of incorporating local foods into menu items, our group would like to see the continued work of the UBCFSP to effectively implement

more local foods into campus menus. For this, it appears that the implementation of a “local or UBC” food logo is highly recommended as well as an aggressive marketing and consumer awareness campaign to increase knowledge and importance of consuming local foods. Our group designed a menu logo to represent the local food items in new menus. The idea of legends is originated from the heart symbol for Healthy Choices. The legend consists of an arm flexing into an “L” shape, which represents local (Appendix 3). The muscle in the arm signifies local power. Local power symbolizes self-sufficiency and consumer power. Supporting local foods will encourage local crop diversity. An increase of local diversity helps to reduce dependence on suppliers from other countries (Halweil). As local producers become more confident in expanding their production, self-sufficiency is reinforced. As people move further away from their food sources, they loss control in the food marketplace (Halweil). Because the general public is excluded from the management of these foods, the method and location of food production are often a mystery. When people purchase from their local producers, they are more likely to learn about how their food was produced. In return, they would have more power to control the use of their local landscape (Halweil). The function of our legend is to remind consumers about the importance of local foods.

For the AGSC 450 2006 colleagues, it is also recommended that evaluations of the implementation of local foods through several measures such as sensory evaluation and surveys be conducted. Additionally, since customer demand is crucial to the practice of increasing local food procurement, future groups of our scenario may want to collaborate with other scenarios dealing with increasing market and consumer awareness.

For our two case studies, it is recommended that Café Perugia attempt to implement recipes of our “local foods” recipe bank in the fall with the start of the new academic school year

as well as more seasonally suited time for root vegetables. Research into fair-trade coffee and locally produced baked goods may also be an area of research for future groups. At 99 Chairs we suggest a trial period of the implementation of a free-range egg breakfast and free-run chicken burger option as well as incorporate daily vegetable soups. At both establishments, our group would like to see increased marketing of local foods as well as to investigate how UBC Food Service could supply more competitively priced locally produced foods.

## **CONCLUSION**

Increasing local food procurement practices on campus is a complex challenge, with many barriers. After careful examination of two UBC food outlets, one small scale, and the other higher volume our group has concluded that cost and a perceived lack of consumer demand are the most significant deterrents for incorporating more local foods into UBC campus menus. Unfortunately, for these reasons, at this time a switch to free-range chickens and eggs would not be economically feasible. We do however; find more promise in the incorporation of local root vegetables into UBC campus menus. To facilitate the transition to a more 'local' menu, we have created a bank of local root vegetable recipes designed to suit the styles of the two food outlets examined, Café Perugia and 99 Chairs. We are optimistic that these recipes can and will be easily incorporated into their existing menus thus helping to increase awareness of local foods on campus. Our group also examined the possibility of constructing a root cellar on the UBC Farm as a means to help support locally grown produce and consumption on campus as well as serve as an educational tool. It seems that with greater collaboration of other scenarios increasing the amount of local foods on campus is a strong possibility despite some noted challenges. The UBCFSP is a smaller model of the global food system and it is hoped that our seemingly minor



changes and constructive examples towards a more sustainable system at UBC, will incur greater benefits and provide leadership for food systems around the world to follow.

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## APPENDIX 1 – Café Perugia Menu Plan

Week 2	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
Breakfast	Breakfast sandwich	Breakfast sandwich	Breakfast sandwich	Breakfast sandwich
VEGGIE	Roasted peppers/ bocconcini pesto mayo 2” foccacia	Roasted eggplant/ cheddar/spinach sundried tomato mayo multigrain grain loaf	Grilled peppers/ swiss/tomato pesto mayo mini rustic filone	Roasted zucchini/ bocconcini avocado mayo country French loaf
MEAT #1	Ham/cheddar/ spinach Dijon mayo country french loaf	Turkey/red onion/ havarti avocado mayo 2” foccacia	Roast beef/tomato/ cheddar chipotle mayo multigrain grain loaf	Turkey/cheddar/ spinach chipotle mayo 2” foccacia
MEAT #2	Roast beef/havarti/red pepper chipotle mayo mini rustic filone	Ham/Monterey jack/tomato pesto mayo country french loaf	Turkey/havarti/Spinach Dijon mayo 2” foccacia	Ham/swiss/red pepper Dijon mayo multigrain grain loaf
WRAP	Mexican chicken wrap chicken/beans/cheese/ rice/salsa	Mexican chicken wrap chicken/beans/cheese/ rice/salsa	Mexican chicken wrap chicken/beans/cheese/ rice/salsa	Mexican chicken wrap chicken/beans/cheese/ rice/salsa
ENTRÉE	Greek-style ¼ chicken Penne/meatballs	Greek-style ¼ chicken Penne/meatballs	Greek-style ¼ chicken Penne/meatballs	Greek-style ¼ chicken Penne/meatballs
Daily entrée	Chicken pie Macaroni and cheese	Chicken pie Macaroni and cheese	Chicken pie Macaroni and cheese	Chicken pie Macaroni and cheese
PIZZA	Ham/mushroom Roasted veggie	Ham/mushroom Roasted veggie	Ham/mushroom Roasted veggie	Ham/mushroom Roasted veggie
QUICHE	Ham/leek Broccoli/red pepper	Ham/leek Broccoli/red pepper	Ham/leek Broccoli/red pepper	Ham/leek Broccoli/red pepper
SALAD #1	Greek	Greek	Greek	Greek
SALAD #2	Marinated roasted veggies	Marinated roasted veggies	Marinated roasted veggies	Marinated roasted veggies
SALAD #3	Asian noodle salad (no onions)	Asian noodle salad (no onions)	Asian noodle salad (no onions)	Asian noodle salad (no onions)
SALAD #4	Shrimp/pasta shell salad (no onions)	Shrimp/pasta shell salad (no onions)	Shrimp/pasta shell salad (no onions)	Shrimp/pasta shell salad (no onions)
SALAD #5	Mexican bean salad	Mexican bean salad	Mexican bean salad	Mexican bean salad
Rice bowl	Curried beef	Curried beef	Curried beef	Curried beef

## **APPENDIX 2 – Root Cellar Construction**

With respect to construction, on opposite ends of the culvert, 0.30 meter diameter ventilation tubes exiting from the ceiling must be made (Durtschi). Also, 2 air intake vents should be placed near the bottom center of the root cellar and away from the outlet vents to allow complete circulation (Durtschi). These tubes are also made from galvanized culvert steel (Durtschi). Air flow patterns are arranged through these placements of air intake and outlet vents (Durtschi). As cold air enters from the intake vent near the bottom of the cellar, it will begin to circulate around the shelves of produce (Durtschi). This will cause the air to warm and rise, as warm air is less dense than cold air (Durtschi). Lastly the warm air will be released through the outlet vent into the atmosphere (Durtschi).

An entrance to this storage space must also be constructed at this time. Another smaller culvert, with a diameter of approximately 1.20 meters should be made perpendicular to the central axis on one end of the main culvert (Durtschi). In the central storage space, the floor must also be made. It is recommended to have a 1.50 meter wide floor made of plywood, approximately 0.30 meters above the bottom of the culvert (Durtschi). Lastly, 2 doors are needed to be attached to the entrance of the main culvert (Durtschi, 1996). Two doors provide improved temperature insulation (Durtschi, 1996). The inner door can be constructed of steel, while the outer door can be constructed with wood (Durtschi).

With the culvert storage area completed, the next labor task is to excavate the ground (Durtschi). This can be accomplished with tractors to dig up the foundation (Durtschi). According to Mark Bomford, this will be accomplished through the “UBC Land and Building Services”, and could cost between \$2000 to \$3000. It is recommended to dig stable soil, which is the least expensive material to excavate (as opposed to gravel) (Durtschi). It is also recommended to dig on flat ground, as it is both easier and cheaper than on a sloping surface (Durtschi). Digging can be accomplished in one day, and once complete the culvert is placed into the hole in proper orientation (Durtschi). Burying the culvert with soil is the final step, which can also be completed in one day (Durtschi). Also, at this time, one must build a staircase to the entranceway with a vertical door at the top of the staircase (Durtschi). This entire process can take as little as 3 days to accomplish with the proper equipment and manpower (Durtschi). Our group feels that this concept will act to satisfy the demand of root vegetables on campus, as well as serving as an educational and interpretive tool for UBC students, researchers, and visitors for promotion of sustainability.

## **APPENDIX 3- Local Power Menu Legend**

