

**AGSC. 450 - UBC Food System Project Scenario 2**

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## **Abstract**

Scenario two of the UBC Food System Project (UBCFSP) for 2006 looks at the feasibility of introducing local food into a UBC food retail outlet. In order to observe tangible results, we chose one food service outlet, a pizza parlour, Pie R Squared (PRS) and one producer, the UBC Farm. We examined the constraints and interests of PRS and the UBC Farm by conducting interviews. Next we developed two pizza recipes and conducted a taste-test at PRS to determine customer acceptability. Currently, PRS and the UBC Farm are in discussion regarding implementation of the UBC Farm pizza for September of 2006. Additionally, to extend the length of time that UBC Farm can provide PRS with produce, we examined the feasibility of a root cellar at the UBC Farm. A root cellar can also help the farm fulfill its mandate as an educational centre. Based on our methodology, we created a model that can be applied to food service outlets both on and off campus. Finally, we provided a list of recommendations to the groups of Scenario two for Spring 2007.

## **Introduction**

As part of the 2006 continuation of the UBCFSP, the main objective for Scenario two was to incorporate seasonal BC produce into the UBC campus food provider menus, highlighting root vegetables if possible. To achieve this, we chose squash as our seasonal produce and developed two new recipes for incorporation into the menu at PRS, which is an Alma Mater Society's (AMS) food service outlet.

It is well documented that the modern food system has become unsustainable due to environmental damage, including pollution and loss of biodiversity (Hill 391, Conveney S97). Due to questions around the long-term viability of our current practices, scholars are now looking for ways to reorganize the food system (Lyson and Green 134). One option is to move

the food system back to a dependence on local food (Lyson and Green 134). For the purpose of this project, we have defined 'local food' as food that is grown within the political boundaries of British Columbia. The major considerations that shape our definition of 'local' are economic viability, food security, and environmental sustainability. Additionally, local will be defined as within BC based on the description of the problem statement provided to us in the UBCFSP outline (Rojas and Richer 7). In order for UBC food retail outlets to be economically viable, they must provide consumers with affordable food while making a profit themselves. By purchasing local, the food retail outlets are able to invest in the local economy and foster a sense of community (Lyson and Green 142). Purchasing local produce also increases the ownership of the local food system; farmers, business owners, and consumers wield more control in decision-making than they would in a global food system (Lyson and Green 142). Further, defining local as within the borders of BC helps to establish food security because food supply cannot be impacted by border closings. Localization of the food system helps to decrease the distance that food travels from farm to plate and empowers individuals to play an active role in environmental sustainability initiatives (Lyson and Green 141). For these reasons, UBC food retail outlets should consider sourcing products locally.

This paper will present a case-specific model for increasing the amount of local food in UBC campus menus, through the incorporation of seasonal UBC Farm produce into the menu of PRS, a popular pizza parlour on campus. We created two new items for the PRS menu and conducted a taste-test to determine the popularity of the two recipes. This paper will outline the process of incorporating local UBC Farm produce into the menu at PRS and will examine the feasibility of using this project as a model for use in other food retail outlets. Additionally, to be able to increase the farm's ability to supply other campus food retail outlets during the academic

year, we will look at the possibility of a root cellar at the UBC Farm. Increasing availability of local menu items in combination with increasing awareness among consumers will help to fulfill UBC Farm’s educational mandate.

*Problem Definition*

The problems presented to the AGSC 450 class of 2006 are divided into scenarios that look at improving the sustainability of the UBC food system, thereby using UBC as a model for the global food system. One of the partners of the UBCFSP, the UBC Campus Sustainability Office (CSO), has been at the forefront of developing initiatives to provide students and faculty members with a sustainable campus (Abramsom 3). With the input of UBC faculties and student organizations, the CSO developed eight major goals organized into the three pillars of sustainability: social, economic and ecological (Abramsom 5). These goals align with those presented by the UBCFSP, where each scenario addresses at least one of the eight goals (see [Table 1](#)).

**Table 1: Goals of the UBC CSO**

Social	1) Improve human health and safety 2) Make UBC a model sustainable community 3) Increase the understanding of sustainability and global citizenship inside and outside the university
Economic	4) Ensure economic viability 5) Strengthen our resource base
Ecological	6) Reduce pollution 7) Conserve resources 8) Protect biodiversity

Scenario two, as defined by the UBCFSP outline, contributes to increasing sustainability in all three pillars. The evidence for the need of maintaining social sustainability can be seen in the statement to provide food security to UBC consumers by offering “...an array of tasty, nutritious and affordable foods...” (Rojas and Richer 7). Economic sustainability for the retail food outlets can be maintained by providing locally grown options at similar prices to current

suppliers. Lastly, environmental sustainability can be improved by reducing food miles needed to get from farm to plate as well as encouraging that the UBC Food System purchases from farms that practice sustainable agriculture.

In the summer of 2004 our scenario two colleagues looked into the feasibility of increasing local food procurement practices and concluded that a majority of produce can be sourced from local suppliers (Group 2). Last year our colleagues focused on specific food items used and provided alternative distributors for these items (Group 6). We took this a step further by focusing on incorporating seasonal and local produce from the UBC Farm into the UBC Food System. We aimed to start a relationship between a campus food retail outlet and the UBC Farm that we hope will become mutually beneficial. Our methods were extrapolated to create a model that can be applied to food retail outlets both on and off campus.

#### *Vision Statement and Value Assumptions*

Our group's reflections on the vision statement were influenced by our shared value assumptions. Overall the members of our group support a weak biocentric view of nature. We recognize the value in all life and not just the value of life as defined by human beings (Bourdeau 12). Within the group there are a range of value assumptions from weak anthropocentric to relatively strong biocentric positions. There is a place for all of these views within this paper as we see social and economic sustainability relying primarily on anthropocentric values, while environmental sustainability has strong roots in biocentricity. Therefore, by considering the three pillars of sustainability, we are also including the variety of positions within the group.

The UBCFSP vision statement has outlined seven guiding principles that are integral to a sustainable food system; they aim to promote ecological diversity and improve access to food for all people (Richer 27).

1. Food is locally grown, produced and processed.

2. Waste must be recycled or composted locally
3. Food is ethnically diverse, affordable, safe and nutritious
4. Providers and educators promote awareness among consumers about cultivation, processing, ingredients and nutrition
5. Food brings people together and enhances community
6. Is produced by socially, ecologically conscious producers
7. Providers pay and receive fair prices

Although the second principle is essential to a sustainable food system, waste management is not within the scope of this paper and it is being looked at in depth by scenario five. Therefore this paper will focus on the six remaining guiding principles. The first principle is the focus of our problem definition: incorporating local food into campus menus. We chose to look at one food service outlet, PRS. We will use this to create a model that can be applied to other food service outlets on campus, and ultimately the global food system. We feel that the third principle, which promotes ethnically diverse and affordable food is already a reality on campus. We are working within this setting to increase the availability of ecologically responsible choices. The fourth principle is closely linked to social sustainability and although this scenario does not focus specifically on consumer awareness, incorporating local food into a food service outlet is an important part of consumer education. It is our hope that the addition of a menu item featuring local produce will help develop a sense of community and foster a connection between consumers and the UBC Farm, thereby linking our project to the fifth guiding principle. Since this paper focuses on the UBC Farm, which is a socially and ecologically sustainable operation, the sixth guiding principle is an integral part of this project. Finally, ensuring that the UBC Farm receives fair prices for produce sold satisfies guiding principle seven.

## **Methodology**

This section describes the methodology used for both our main project focus—the introduction of local food into the menu of PRS—and our secondary focus, the development of a



root cellar at UBC Farm. The methods discussed in this section were used to create a generic model for future introductions of local food into the UBC Food System and is introduced in the Discussion section of this paper.

We chose PRS as our primary focus because we felt our chances of accomplishing tangible change in the UBC Food System would be maximized by focusing on only one outlet. We also felt that any changes accomplished could then help us develop a model that could be applied to other campus food service outlets. PRS was chosen over other outlets because of its popularity among patrons of the Student Union Building and due to the ease with which the menu can be changed. We chose to focus on UBC Farm produce because the farm can benefit from a new client and greater exposure within the UBC community, both of which can be made possible through the high-profile outlet of PRS.

Once these decisions were made, we drafted a set of questions (see [Appendix I](#)) to pose to Nancy Toogood, AMS Food Services General Manager and collaborator with the UBCFSP. These questions gave us an understanding of the conditions under which PRS would sell a pizza featuring UBC Farm produce. We then met with Nancy to propose this new menu item and pose our questions. Next, we approached Warren Harshenin, manager of PRS, to determine the logistics behind introducing a new pizza to the menu at PRS.

With support from both Nancy and Warren to develop one or two new pizzas, we obtained a list from UBC Farm Production Coordinator Greg Rekken, of the produce the farm grows, commodity prices, and seasonal availability. The next step was to develop two possible pizzas that would feature UBC Farm produce. To satisfy PRS's conditions for selling a new item, it was necessary that the pizzas had good consumer acceptance, contained ingredients available in large amounts over the winter academic term at UBC, and met food cost

requirements. With these challenges in mind we developed six new pizzas and chose the two our group thought would fair the best in a taste-test among consumers.

Next, we conducted a taste-test at PRS. This involved providing recipes to PRS for making both pizzas, which we handed out as samples to students coming into and passing by the outlet. These students were then asked a standard question about how they rated the new pizza. With the results, 'fact sheets' were produced, including the details and conditions necessary for PRS, so that they could make a decision about incorporating the new pizzas into the menu (see [Appendix II](#)).

In exploring the possibility of a UBC Farm root cellar, our methodology involved basic research into the building of a root cellar, and considerations of potential benefits for the farm and local food, to be introduced in the Discussion section of this paper.

## **Findings**

The meeting held with Nancy Toogood provided us with details relevant to our project (Nancy Toogood, personal communications, March 8, 2006). We were provided with monthly transfer information from the AMS storeroom to PRS so we could determine current amounts and prices of goods used in the food outlet. AMS does not have exclusive contracts with their supplier and so ordering specific items from UBC Farm or another supplier is a possibility. Additionally, PRS does not have a set menu, so the incorporation of a new pizza could begin by making it once per day and then increasing the number of pizzas made as popularity grows. PRS sells approximately 300 pizzas per day, of which 25% are vegetarian. The staff at the outlet are not open to charging extra for certain pizzas; customers are not willing to pay more than the current \$2.75 per slice. Finally, AMS would be willing to accept produce from UBC Farm if it could be delivered during AMS receiving hours (6:30-10:30am). They are also willing to pre-

order in the spring to ensure the farm can plant enough of the crop to sell to AMS during the fall and winter. However, the AMS Executive Committee, to whom Nancy Toogood is accountable, must approve any changes made within AMS. At the time of the meeting, none of the recommendations made by previous AGSC 450 students to AMS Food Services (e.g. a change to a more sustainable poultry supplier) had been incorporated, due to excessive costs.

In the second phase of our research, we met to develop the new pizza recipes. We tested six different pizzas with varying combinations of squash, leeks, mustard greens, scallions, sour cream, tomato sauce, rosemary, sage and various cheeses. In order to free up food cost for the cost of organic produce, we decided to develop only vegetarian pizzas. After sampling the six varieties of pizza, the group agreed on the two following recipes:

1. Sour cream base, garlic, fresh UBC Farm rosemary, scallions, and roasted UBC Farm butternut squash with Gouda and mozzarella cheese.
2. Tomato sauce base, garlic, chopped UBC Farm mustard greens, and roasted UBC Farm squash with Edam and mozzarella cheese.

The recipes were then sent to Warren and Nancy for approval and a date was set for sampling the new pizzas at PRS. A subsequent meeting with Warren resulted in the following decisions (Warren Harshenin, personal communications, March 15, 2006). The preferred time for sampling was set for 3pm to avoid the lunch rush and yet ensure a sufficient number of consumers were available to try the pizzas. Additionally, the produce from UBC Farm needed to be delivered to PRS the day before the taste-test so the pizzas could be dressed and refrigerated before cooking on the day of the taste-test.

The pizzas were made by PRS and were distributed in the food outlet by our group. Three group members recruited students passing by to sample the pizza, two group members served the

pizza, and two members collected the responses to the question “Would you buy this pizza?” These were tallied; the sour cream-based pizza received 36 Yes and 15 No responses (n=51), while the tomato-based pizza received 46 Yes and 52 No responses (n=98) (see [Appendix II](#)). There were a few factors that proved to be limitations in our survey. Normally, the vegetarian option is marketed towards vegetarians, while meat-eaters tend to choose meat-based pizzas. Unfortunately, not all of the respondents during our taste-test were vegetarian and when asked if they would buy the pizza, many responded ‘no’, only because they would have chosen a meat-based pizza. Also, twice as much tomato-based pizza was made as compared to the sour cream-based pizza, and as such, the number of respondents for each type of pizza was different. However, the sour cream-based pizza also received the most positive reviews from the PRS staff and our group.

While making the pizzas, Warren weighed every ingredient used so the costing of the pizzas could be determined. Through discussion with Greg of UBC Farm and comparison to current AMS storeroom prices, the prices of the squash, rosemary and greens were determined to be \$1.50/kg, \$20.00/kg and \$6.00/kg, respectively. This made the final pizza costs \$7.62, for the sour cream-based pizza, and \$7.83, for the tomato-based pizza (see [Appendix II](#)). This equated to 34.6% and 35.8% of the total revenue possible for the pizzas, which is in accordance with current food costs incurred by PRS.

Currently, negotiations are under way between AMS Food Services and the UBC Farm to develop a contract for a set amount of squash and rosemary, to be planted this spring for delivery to AMS starting in Fall 2006 when the pizzas will first become available. Confirmation has been received from Nancy that the project will go ahead, if the prices indicated for the UBC Farm produce can be secured (see [Appendix III](#)). Of the fifty vegetarian pizzas made per day, Nancy

has suggested that 20% of these pizzas could be our squash pizzas. If PRS plans to make ten squash pizzas per day, requiring 1 kg of raw squash (1/2 kg cooked squash) per pizza, UBC Farm will need to provide approximately 300kg per month, at a cost to AMS of \$450. It has also been determined that this is a feasible amount for the farm to grow, however storage past January will require a root cellar. UBC Farm will also have to provide approximately 600g of rosemary per month, at a cost to AMS of \$12, and this is also a feasible amount for the farm to supply.

These findings indicate that AMS is receptive to purchasing local produce if it does not detract significantly from their revenue. The successful incorporation of seasonal squash, from UBC Farm, into the pizza rotation at PRS, can now be used as a model for how to introduce more local items into UBC food outlets as well as outside of UBC.

## **Discussion**

### *The use of a root cellar at UBC Farm*

When investigating the possibility of a root cellar for the UBC Farm, two major questions must be considered:

1. How many people should the farm strive to feed on a year-round basis; should the focus involve making a real impact on the local community's food system, or does the farm simply maintain token representation for educational and awareness purposes? With an academic mandate to promote research, a balance between these goals must be realized.
2. How big should the root cellar be? This involves consideration of the production potential of the farm, and determination of an appropriate ratio of winter storage to main season sales. Assessing this potential becomes more complicated as one considers the diversity of crops suited to the farms climatic environment.

From a purely economic rationale, the presence of a root cellar will extend the farm's revenue-generating season, allowing it to maintain year-round staffing, while providing a source of funds when it is most needed: spring start-up. This is especially important considering the farm's persistent hindrance of funding uncertainty.

This year the farm is embarking on the development of a pilot Community Shared Agriculture (CSA) program. This means that customers sign up at the beginning of the season, placing a deposit for the purchase of produce boxes that will be available weekly through the growing season. The program will commence mid-June and continue for 20 weeks. The target this year is to attract 25 customers, with each box providing enough produce for two people at a cost of \$25 per week. Each share costs \$500, with the total gross revenue expected to be \$12,500. With the addition of a root cellar, combined with over wintering field crops, the CSA could potentially be a year-round venture. Taking the current customer load as an example, the CSA program alone could generate \$32,500 per year, that is an additional \$20,000 in sales, primarily due to the addition of a root cellar. Without the root cellar, it is unlikely that the farm could produce adequate quantity and diversity to satisfy box customers through the winter. This will increase off-season productivity of the farm, not only in terms of revenue and food production, but also for education and outreach when it is most needed: during the academic year. The cumulative impacts of such an investment may help to ensure the farm's survival through program development, and increased awareness by the UBC community of an agrarian institute that remains largely anonymous.

While a CSA program has the potential to satisfy the farm's revenue needs, it is the incorporation of farm produce into the UBC food system that will solidify the farm's place in the UBC community, while stimulating awareness for the farm and the importance of local, seasonal

food. As such, provisions should be made for the storage of produce to be consumed through food outlets on campus. Taking the topic of this paper as an example, the UBC Farm would have to store approximately 1200kg of butternut squash in order to supply PRS for four months, at an assumed consumption rate of ten pizzas per day.

With all these considerations, we recommend that the farm begin with a 20 by 20 foot root cellar, which will allow for expansion to a 50 box CSA, and some increased on-campus sales. A CSA in New Jersey maintains a 140-member program through the winter, with the bulk of supply coming from two 8 by 12 foot root cellars (Sayre). For the UBC Farm, a single 20 by 20 structure, divided into two rooms would allow for differing climatic conditions to suit a range of storage needs.

Most UBC Farm produce can be stored in a root cellar, especially crops such as squash, onions, leeks, carrots, beets and garlic. This may increase the potential for a long-term contract between the UBC Farm and PRS. Because root cellars increase shelf life, the UBC Farm will be able to supply produce for a much longer period of time. As a result, PRS could be supplied with UBC Farm produce to make the newly introduced vegetarian pizzas for most of the academic year.

#### *The structural details of a root cellar*

The root cellar should contain 2-3 rooms separated by cement walls, where the room farthest from the exit door of the root cellar is used for produce requiring relatively low storage temperatures. Produce that does not require near freezing temperatures, such as squash and potatoes, can be placed in the room closest to the exit door of the cellar (Bubel 135). The frame of the root cellar will be supported by a 6-inch thick cement ceiling supported by crossed, tied reinforcing bars and 8-inch thick concrete block walls with gravel fill to the exterior for drainage (Bubel 175). The floor can remain as soil, or alternatively 8-inches of gravel can be used. If the

moisture level is too low, the gravel can be sprayed with water to increase the humidity (Bubel 138).

Installing a proper drainage is essential, as it prevents pressure on the rear wall from the expansion of frozen or wet soil, minimizes excess water, and controls the humidity level. A perforated 4-inch drainpipe should be inserted horizontally along the exterior of the back wall, continuing around both sides to drain out the front. Partly over the pipe, heavy roofing paper or six-mil plastic sheeting will be tucked to avoid silt from clogging it. Starting from center back down both sides, the drainage pipe should slope one-inch in eight feet. Gravel will then be backfilled above the pipe. (Bubel 172)

Having an appropriate drainage system is important, but it is also crucial to maintain a good airflow circulation in the root cellar. The fresh air inlet will be built low to allow cool air to enter through low intake, and the stale air outlet will be placed high on the opposite side of the room to allow warm air to be released (Bubel 140). In addition, to conserve space in the root cellar and allow air circulation, shelves must be built two inches from the wall. The shelves can be made from cedar, oak, locust, or Douglas fir for durability. The produce can be kept in crates and placed on top of the shelves in an organized fashion to maximize space (Bubel 145).

#### *Introduction to the Generic Model:*

After developing a methodology to incorporate local and organic produce into a menu item at PRS, we adapted this strategy into a general model, which will be referred to as our generic model (see [Table 2](#)). This model can be applied to the UBCFS and areas of the global food system. We focused on one food service outlet because we wanted to see tangible changes. By starting with small changes in one food service outlet, we aimed to create a model that can be



used across campus to incorporate local, seasonal produce into campus menus. Additionally, this generic model is broad enough to be applicable to food service outlets outside of UBC.

Waltner-Toews describes a three-stage process that is necessary when introducing new conceptual models, paradigms, and methodologies that aim to solve complex problems (Waltner-Toews 686). We believe these stages are relevant to the introduction of local food into food service retail outlets, both on campus and as part of the global food system. The three stages are:

1. The old way of doing things must be seen to be inadequate to the task
2. A new way must be proposed and suggested to be a possible better alternative
3. The new way must prove to be a better alternative. (Waltner-Toews 686)

Although the article suggests that the first two steps have already been accomplished, we believe that the global food system, which encompasses a diverse range of sectors and people, is at varying stages in this model. The application of the Waltner-Toews model to our generic model, the UBCFS, and the global food system will be discussed in more detail in the following sections. It should also be noted that the third stage of the model is not within the scope of this paper; it relates to other scenarios in the UBCFSP that are focusing on the markers of sustainability.

### The Generic Model

We recognize that the generic model we have created can be applied to the UBCFS as well as the global food system, and therefore the individuals who will be carrying out the tasks will be different depending on the context. Within the UBCFS, AGSC 450 students as well as the owner or manager of the food service outlet can use this model. In the global food system the owner of a food service outlet can use this model, or this will be a job that can be contracted out.

**Table 2: Generic Model**

<i>Step</i>	<i>Action</i>	<i>Considerations</i>	<i>Justification</i>
<b>1</b>	Choose a retail	i) Obtain: a menu, an inventory of	Step 1 is aiming to make a

	outlet	<p>produce purchased including quantities, prices and state of preparation (i.e. chopped, washed, etc.), food costs of each menu item, and acceptable percentage of food costs.</p> <p>ii) Decide whether you are substituting an existing menu item with local/organic product or introducing new menu item/product. Consider whether there is a niche market that is not being tapped into.</p>	<p>small, measurable and long-term change within the food system, by choosing a specific site of action.</p>
2	Choose a local food distributor or producer	<p>i) Consider whether the distributor/producer can meet price requirements, quantity requirements and if they have an appropriate selection.</p> <p>ii) Find out if organic standards are met if this is a priority of the food service outlet.</p> <p>iii) Find out the date that the distributor/producer must have the order by.</p> <p>iv) Ensure the distributor/ producer has a back up plan in case of crop failure.</p>	<p>Step 2 ensures that the distributor or producer can meet the requirements of the food service outlet. It aims to strengthen the local economy supporting local producers and distributors (Halweil 24-25).</p>
3	Customer acceptability of the new local menu item	<p>i) Consider conducting taste tests, focus groups (Ross 102) and time limited introduction into the menu.</p>	<p>Step 3 focuses on building a relationship between the producer, consumer, and the food service outlet. This strengthens community support for new product (O'Hara &amp; Stagl 542).</p>
4	Signing contracts and establishing a working relationship between the producer and food service outlet	<p>i) Consider the type of contract, incorporate both the producer's needs and the food service outlet's needs. This includes the initial investment, installment of payments, and the delivery schedule.</p> <p>ii) Ensure that the division of responsibility is clear and stated in the contract – i.e. who is responsible for delivery, preparation, etc. of the produce.</p>	<p>Step 4 aims to ensure economic sustainability of the proposed change. Additionally, it further solidifies the relationship between the local producer or distributor and the food service outlet.</p>

5	Re-evaluate goals and sustainability indicators (both the producer and food service outlet)	i) Consider what the goals of the producer and food service outlet are. ii) Select appropriate indicators of sustainability to measure the impact of incorporating local produce into the food service outlet's menu.	Step 5 is focused on evaluating the success of incorporating local food into the food service outlet. Additionally, it ensures that the relationship between the producer and food service outlet will continue to grow, providing opportunity for further incorporation of local foods into the menu.
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*Application of the Generic Model to UBCFS:*

While the model we developed is very specified in that we were targeting one AMS Food Service retail location (PRS) with one ingredient (squash) for a new pizza, we discovered that, with adequate planning and the squash model as a template to work from, this model could be extended to encompass the incorporation of other UBC Farm vegetables into other menu items at other food service outlets on campus. In effect, the model could become generic (as described above) and UBC Farm, through agreements with AMS Food Services for small amounts of specialized produce, would become a food distributor. In researching the importance of local alternatives to an emerging global food system, O'Hara and Stagl agreed that the link between producer and consumer created by a CSA-type relationship is stronger than simply through economic ties alone (O'Hara & Stagl 535-536). The potential increase in UBC grown produce in menus at UBC can be seen as a step towards increasing sustainability in all three pillars. UBC Farm produce travels less than 2km to get to food service outlets on campus. This is in stark contrast to the average of over 1000 miles that food travels in North America from farm to plate (Halweil 21). Although the UBC Farm is far from being economically sustainable, acquiring the food service outlets of UBC as clients, means taking a step in the right direction with regards to economic viability. Additionally, the potential to impact social sustainability on campus is

almost unlimited. While they are on campus, students have the opportunity to be exposed to local, fresh produce from UBC Farm, and with the aid of Scenario four in increasing awareness of the benefits of local food, students may begin to question the larger food system around them as they leave campus (O'Hara & Stagl 546). Being exposed to UBC Farm produce compounds the question of *what* to eat, with *where* (food miles) and *when* (seasonality) to eat it (Stagl 148). Essentially then, with minimal revision, some additional time, and the right people, this generic model can be used to promote local farm produce off-campus and apply the model to parts of the global food system. We recognize that the UBC Farm does not exist primarily to supply food outlets with mass amounts of produce, nor is it feasible to do so. Rather, the proposed UBC Farm/UBC relationship can be viewed as an example for promoting locally grown foodstuffs in regional food service outlets.

#### *Application of the Generic Model to the Global Food System*

It is important to note that in introducing local foods outside of the UBC food system, we agree with Dupuis and Goodman, who study the politics of local foods, suggesting that the “emphasis is not on creating an ideal utopian ‘romantic’ model of society” (Dupuis and Goodman 361). Rather, we would like to think of our PRS experiment as an indication that several small changes in the same direction, will lead to tangible global change. Making small changes is especially important to consider in the context of Waltner-Toews’ three-stage model to improving the sustainability of a system (Waltner-Toews 686). Our generic model can be applied in multiple locations, which will satisfy populations who may be at different stages of the three-stage model, as well as satisfying the small-scale nature of our model. In this setting, the model will likely function optimally. Our generic model is not meant to make leaps and bounds overnight; rather, we would like to see it used to have a cumulative, accruing effect on the way

the world views local foods. While studying the implications for local foods in the context of food retail trends, Guptill and Wilkins predict that in the coming years, more globalization will occur, leaving very few companies controlling the food supply chain (Guptill and Wilkins 41). They suggest that the market will increase dramatically for local food suppliers in response to the centralization of the food system (Guptill & Wilkins 41). It is our thought then, that our generic model will not only have a use, but will thrive in this environment.

We recognize that although our model appears to have a future within the global food system, it also has its limitations. The model may be widely applicable in the UBC Food System, but it is not applicable to all parts of the global food system. The generic model applies to “Western style” food distributors, found primarily in developed countries, as well as most urban centres around the world. This model may not apply to villages and smaller towns where food procurement occurs differently than in larger cities.

## **Recommendations**

As Group 13, Scenario two, of the UBCFSP 2006, we recommend the following:

1. AMS Food Services should solidify a contract with UBC Farm in April 2006 for an order of squash (approximately 70kg/week for 12 weeks) and rosemary (600g/week) to begin delivery and usage by PRS in September 2006.
2. AGSC 450 students in January 2007 should determine whether the implementation of UBC Farm squash and rosemary onto PRS pizza occurred and was successful. They should also attempt to renew and extend the contract for subsequent years.
3. The model that we have developed based on incorporation of UBC Farm squash onto PRS pizza, should be used by the UBCFSP, AMS Food Services and UBC Farm, to incorporate more locally and sustainably grown items into UBC food outlet menus.

4. AGSC 450 students should look at local restaurants that are predominantly using sustainably produced foods (e.g. Aphrodite's Café and Pie Shop, Bishop's, Rain City Grill) as models for the conversion to a more sustainable UBC food system.
5. We recommend that future AGSC 450 students perform a cost-benefit analysis to see whether building a root cellar would be economically feasible in the long term. The cost of building the cellar includes labour, rented and purchased machinery, gravel, cement, framing supplies, drainage, crates, shelving, and maintenance.
6. We also suggest that future AGSC 450 students examine the possibility of further expansion, such as providing produce for other restaurants and grocers, as well as increasing the current pilot-proposed CSA to 50 or more members.

## **Conclusion**

Local food procurement at the level of UBC food service outlets is a way to improve sustainability of the UBC Food System. AMS Food Services' outlet PRS has all but signed a contract to introduce UBC Farm grown squash and rosemary into two pizzas successfully taste-tested. To be feasible, the UBC Farm must look into building a root cellar, which would have a two-fold effect on economic viability of the farm. First, it would allow the farm to supply PRS with squash during the entire academic year and second, it would allow for a year-round CSA. We believe that the successful introduction of the proposed two new pizzas, along with a campaign to increase awareness of local foods, has the capability to influence consumer purchasing both on and off campus. When applied in an incremental manner outside of the UBC Food System in the global food system, the use of local foods in retail outlets, grocery stores, and at home has the potential to have substantial positive effects in all three pillars of sustainability.

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## Appendix I: Interview Questions for Nancy Toogood and PRS

1. Can we obtain a list of distributors used? Is it even possible to change distributors (what are their contracts like)?
2. Can we obtain a list of volumes/weights of ingredients purchased per week/month as well as what state they arrive in (sliced, whole, frozen etc)?
3. a) Hypothetically, would you be willing to change some of your menu items to include more local ingredients (if the cost to you was not changed)?  
  
b) Do you think there is a market for slightly higher priced organic, local slices? (Organic & fair trade coffee at Blue Chip is costlier, and still seems to still sell...)
4. How does PRS operate with regards to procedures, prep time, kitchen space, storage space? (we must be able to accurately estimate what the effect of changing an ingredient will be on the logistics of the company)
5. Can we get an idea what your current menu is like? (what type of pizzas you already have?)
6. Can we get an idea of what the best seller is? (ie how many of each menu item are sold per day/week)
7. a) Are you currently using fresh ingredients or frozen or preserved canned ingredients? (important to know because may change the cost in labor section)  
  
b) What herbs does PRS use for its pizzas and in what quantities and are they fresh or dried?
8. Is your menu set, or do you come up with new pizzas every week/day/month?
9. If it is set, how difficult would it be to have a more varied menu based on seasonality?
10. Would there be any difficulties in getting ingredients from UBC Farm (self pick up)?
11. Would it be possible to provide an estimate for the farm regarding the amount of produce needed before the growing season?
12. Have you taken into consideration any of the suggestions made by previous UBCFSP groups? Any changes made (ie distributors)?

## Appendix II: Findings Fact Sheet

### The UBC Farm Seasonal Pizza: An Information Sheet

#### Option # 1: Sour Cream Base

#### Ingredients and Cost

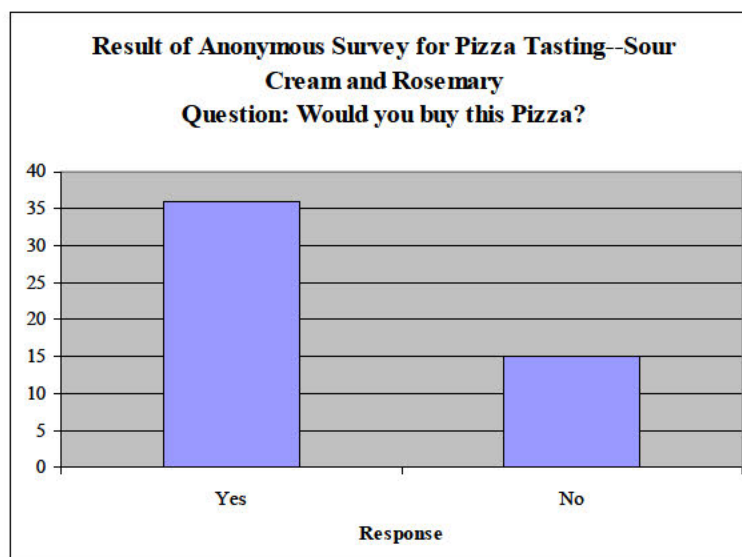
Ingredient	Amount Used	Price (AP)	Cost per item
Plain Crust	9 inch round		\$ 0.58
Sour Cream	0.320 kg	\$ 2.70/L	\$ 0.86
Garlic	0.010 kg	\$ 2.20/lb	\$ 0.05
UBC Farm Fresh Rosemary	0.015 kg	\$20/kg	\$0.30
UBC Farm Squash	0.550 kg (cooked) [1.1 kg (raw)]	\$1.50/kg	\$1.65
Green Onion	0.250 kg (1/2bunch)	\$ 0.36/bunch	\$ 0.18
Gouda	0.200 kg	\$ 11.07/kg	\$ 2.21
Mozzarella	0.200 kg	\$ 8.94/kg	\$1.79

**Total Cost: \$ 7.62**

**Total Cost as a Percentage of Sales Revenue (\$2.75/slice x 8 slices): 34.63%**

**Seasonality:** UBC Farm can produce the Squash and Rosemary from late September through late January

#### **Taste Test Results:**

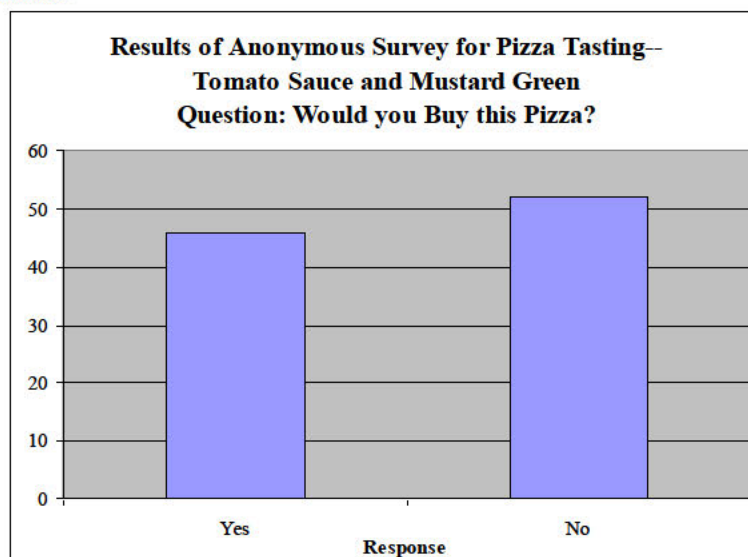


**Pizza Option # 2:** Tomato Sauce Base**Ingredients and Cost**

<b>Ingredient</b>	<b>Amount Used</b>	<b>Price (AP)</b>	<b>Cost per item</b>
Sauced Crust	9 inch round		\$ 0.86
UBC Farm Mustard Greens	0.270 kg	\$ 6.00/kg	\$ 1.62
Garlic	0.010 kg	\$ 2.20/lb	\$ 0.05
UBC Farm Squash	0.550 kg (cooked) [1.1 kg (raw)]	\$ 1.50/kg	\$ 1.55
Edam	0.200 kg	\$ 9.29/kg	\$ 1.86
Mozzarella	0.200 kg	\$ 8.94/kg	\$ 1.79

**Total Price: \$ 7.83****Total Cost as a Percentage of Sales Revenue (\$2.75/slice x 8 slices): 35.59%**

**Seasonality:** UBC Farm can produce the Squash and Mustard Greens from late September through late January

**Taste Test Results:****UBC Farm Ordering Requirements**

In order for UBC Farm to consistently provide the produce needed for either of these pizzas, the farm will need a commitment from AMS Food Services at the start of the growing season (April) as to the estimated amounts they will purchase, and a guarantee that payment will be provided upon delivery.

Once such a contract has been established, the Farm will provide weekly delivery during AMS receiving hours of the agreed upon amount of produce.

### Appendix III: AMS commitment by email from Nancy Toogood

From: Nancy Toogood [REDACTED]

To: Nicole Fetterly [REDACTED]

Cc: Jordan Marr [REDACTED]

Subject:RE: pizza cost,etc

Date:Wed Apr 05 14:15:42 PDT 2006

Nicole

This is comprehensive, useful and very well done. I think we can call this a go if Greg can commit to these prices for the next academic year 06/07

Consider this one a fait de complete and we will have signage up and have a least a couple of the sour cream/rosemary pizzas every day if possible.

Your group has done an amazing job....congrats!

Cheers

Nancy Toogood

AMS Food and Beverage Manager

Alma Mater Society of UBC

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]