PATHS TOWARDS A JUST, SUSTAINABLE AND FOOD SECURE UBC FOOD SYSTEM: 2004 UBC FOOD SYSTEM PROJECT (UBCFSP) REPORT

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The UBC Food Systems Project is a collaborative Community Based Action Research Project initiated jointly between the Faculty of Agricultural Sciences and Social Ecological Economic Development Studies (SEEDS) program of the UBC Campus Sustainability Office (CSO). Key project members include: Faculty of Agricultural Sciences (students and teaching team of AGSC 450 class), UBC Food Services, UBC Alma Mater Society Food and Beverage Services, UBC Waste Management, UBC Farm, SEEDS and the CSO.

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ACKNOWLEDGEMENTS

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AGSC 450 Students:

- 2004 AGSC 450 students (20 teams, 150 students) whose patience, hard work and dedication are what made this project possible.
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The author of this report, Liska Richer, is a M.Sc. student in the Faculty of Agricultural Sciences and a Teaching Assistant in AGSC 450. She was hired by the Campus Sustainability Office to work with the above UBCFSP members, namely to (1) Synthesize the findings of 2004 AGSC 450 students, (2) Organize a workshop with UBCFSP members and other key partners to facilitate a workshop to aid in creating a shared vision among stakeholders regarding what a sustainable UBC Food System looks like, and (3) Work with UBCFSP members to plan and ideally implement food system related initiatives.

EXECUTIVE SUMMARY

The UBC Food System Project (UBCFSP) is a collaborative, community-based action research project involving multiple stakeholders: UBC Food Services, AMS Food and Beverage Services, UBC Waste Management, UBC Farm, UBC Campus Sustainability Office (CSO), Social, Economic, Ecological Development Studies (SEEDS), and the Faculty of Agricultural Sciences (FAS) students and teaching team. It has a minimum five year plan.

The UBCFSP is part of an Agricultural Science 450 Land, Food and Community III course, a mandatory capstone course required for all 4th year FAS students. The Project commenced three years ago and has involved four generations of AGSC 450 students, 461 in all.

The main goals of the UBCFSP are to conduct a UBC food system assessment; identify barriers and create opportunities to enhance the sustainability of the UBC food system; and to make recommendations to UBCFSP stakeholders.

2004 was the third year of the UBCFSP. Based upon the findings of Years one and two, students in the Spring term were expected to: (1) Begin an attempt to reach a *shared* consensus about what a sustainable UBC food system should look like (vision), and how we should get there (model), and (2) to test the applicability of preferred models, principles, indicators, and research designs on one of eight assigned scenarios.

A summer term was also held in 2004.Based upon the findings of Years one, two and three, students were expected to: (1) further develop and refine proposed research designs to enable the 2005 class to engage in actual data collection, using two scenarios, and (2) to make recommendations on how to refine the best model.

This paper is a summary of the work of 155 students, working in 24 groups, on one of ten scenarios. The purpose of this paper is to integrate and summarize their findings and recommendations, prepare the groundwork for Year four, and facilitate initiatives among UBCFSP stakeholders.

Key General Findings

Best Models:

- 45% of students from the spring term chose group 9's model of a sustainable UBC food system (see Appendix C), and 15% chose a hybrid version of both group 9 and 14 models.

The following 9 guiding principles were cited by spring 2004 students the most frequently as principles that should guide us towards a sustainable UBC food system:

9 Best Guiding Principles for Chosen Best Models:

1. Distance food travels from where it is cultivated to where it is consumed in the UBC community (14)*****
2. Awareness among UBC community members regarding the concept of food system and sustainability (11)*
3. Availability of nutritious and safe foods on the UBC campus (8)*
4. Awareness among UBC community members regarding the benefits of local food (7)*
5. Level of collaboration UBC food providers have with local food producers and distributors (7)*
6. Amount of waste that is diverted from landfills as a result of waste reduction practices, such as composting and recycling (7)*
7. Profitability of food service operations (7)*
8. Affordability of nutritious foods on campus (6)*
9. Accessibility to a wide variety of diverse meals on campus (6)*

*****Number of groups who mentioned these guiding principles in parentheses.

Specific Findings: 2004 Spring AGSC 450 Groups

Scenario 1: What would a student-run Agora food service operation integrated with the Faculty's curriculum look like? (Group 7, 15)

- While Agora provides nutritious and inexpensive foods to its customers, and produces little waste, it is currently not economically viable, and "fails to make a significant contribution to the food security of the MacMillan community" (group 7).

- The main challenges facing Agora are namely that it lacks a HACCP (find out) plan and certification (group 15); lacks equipment and suffers from human resource limitations (group 7, 15).
- Agora could be better integrated in FAS's curriculum by acting as a case study for students to learn about consumer trends, preferences, marketing, food safety issues, and food service management. It can also serve as a site for FAS students to perform mandatory course volunteer hours (group 7).
- Agora should form contractual agreements for food supplies with UBC Farm and Squeez, a fresh organic food delivery service (group 15).
- Agora should "approach UBC Food Services, AGUS and the FAS with proposals for longer term funding", and "introduce recycling bins for food wrappers and other post-consumer wastes it generates" (group 7).
- Agora needs to determine the needs of its consumer base and needs to take steps to play its part in increasing food system awareness (group 7).

Scenario 2: **Costs of locally produced food: Best Practices for Sustainable Food Procurement**
2A: True costs of food (Group 8, 10)

- There are many environmental, social and ecological indirect costs associated with the food we eat, which are not paid for by the consumer directly. Environmental costs include: the release of carbon emissions into the atmosphere, contributing to ozone depletion, climate change, global warming, depletion of wildlife habitat, loss of genetic diversity and soil, air and groundwater pollution (group 8, 10). Social costs include the distancing of consumers from producers and their local community (group 8, 10). Economic costs include the declining of percentage return that farmers are receiving for their products, immense economic expenditures on climate change related epidemics, (group 10), health costs associated with increasingly poor eating lifestyles, and costs associated with food-borne illnesses (group 8, 10).
- A monthly information board should be displayed at UBC food outlets depicting a typical commodity chain for a conventionally and a sustainably produced food item and the costs associated with each, along with information about where the more sustainable food item can be purchased (group 8).
- Labels should be placed on food products sold by UBC food providers depicting 4 measurable externalities including ecological (food mileage and production practices), economic (local economic cycling "as the % of the food product that has been produced locally") and social criteria ("percentage of sale price returned to the farmer") (group 10).

2B: Feasibility of the re-localization response (Group 13, 17)

- Benefits of a re-localized UBC food system can include: reductions in transportation, packaging and processing costs, increases in economic returns for farmers, increases in the availability of fresh, tasty and higher quality foods, increases in social connections between farmers and consumers, boosts in the local economy, and increases in agricultural land preservation, which can help maintain biodiversity and maintain green space (group 13, 17).
- Drawbacks of a re-localized UBC food system can include: decrease in employment associated with transportation, packaging, advertising, and processing (group 13), limits in variety of foods since availability depends upon seasonality (group 13, 17), and potential increases in food prices (group 17).
- Posters should be displayed around campus to serve as educational pieces to increase awareness of local foods and ideally encourage purchasing of local food products (group 17).
- No written standards exist in UBC Food Services and AMS Food and Beverage Services "Request for Bid" forms, purchasing codes and/or policies, regarding locally grown foods (group 13).

Scenario 3: Food mileage (Group 6, 19)

- Some impacts that are associated with the distancing of consumers from food sources include: decreases in consumer knowledge about their food system which can contribute to poor consumer food choices (group 6, 19) and weak or non-existent relationships between farmers and consumers are weak or non-existent (group 19).
- "Eco-labels" should be placed on food products served on campus, which would show the distance a food item has traveled from its point of origin to place of consumption; the label could "include a mileage meter that estimates the environmental impact of its transportation"(group 6, 19).

Scenario 4: UBC Farm: Assessing the Potential of Forming Market Relationships with Campus Food Providers (Group 9, 14)

- The UBC Farm's costs greatly exceed its revenue and it has suffered from a "lack of committed leadership beyond the FAS, uncoordinated management and neglect" (group 9).
- The Farm has "many opportunities for market expansion, including the expressed interest of both AMS and UBC Food Services, and the untapped demand of the quickly expanding University Town" (group 9).

Scenario 5: Assessing the potential for a student-run cooperative organic grocery outlet in UBC's Student Union Building (Group 1, 5, 11)

- Potential positive contributions that the UBC Food Co-op may have on the overall sustainability of the UBC food system include: increasing the affordability of sustainably produced foods (group 1), increasing support for fair trade foods, increasing the overall economic viability of the UBC food system (group 11) and providing employment and volunteer opportunities for UBC students (group 1, 11). The Co-op may also provide support for organic farmers, reduce food miles and contribute to waste reduction (group 1), as well as contribute to strengthening relationships between producers and consumers, and enhancing UBC community knowledge and awareness about food security, food system and sustainability issues (group 1, 5, 11).
- The main challenges that the Co-op may face in contributing to the sustainability of the UBC food system include: remaining an economically viable operation (group 1, 11), providing easy accessibility to its products and services (1, 5, and 11), reducing food miles, and remaining competitive with other food providers (group 1).
- The UBC Food Co-op could be better integrated into the FAS's curriculum by serving as a problem based case study for students to investigate local food sources for purchasing, developing nutritional meals using seasonal foods, designing business plans (group 1, 11) and food safety manuals, as well as providing a site for students to conduct mandatory course requirement volunteer hours (group 1).
- The Food CO-op could supply goods to the Agricultural Undergraduate Society, the UBC Farm (group 1) Agora (group 1, 11), UBC Food Services and AMS Food and Beverage Services (group 11).

Scenario 6: Develop a definition of food security for the UBC campus (Group 20)

- For students living on campus affordability of food is a concern when compared to the average cost of monthly eating amounts for students living off campus. Accessibility to food is limited for students living on campus because they are dependent on UBC food provider's hours of operation, where as for students living off campus accessibility to food is high. Acceptability of food for students living on campus varies by specific residence, such as at Place Vanier (recently underwent renovations) is said to offer the greatest cultural and personal variety of food, whereas at other cafeterias food is generally regarded unfavorably, and for students living off campus, acceptability of food is higher because they typically have the facilities at home to prepare their food, and choice over the ingredients. Finally, food safety is a small concern for students living on campus since food is prepared and served by food safety certified staff and in accordance with strict food safety policies, where as for students living off campus food safety is more of concern, since many household members do not have adequate knowledge regarding food safety practices (group 20).
- Both UBC Food Services and AMS Food and Beverage Services play a huge role in campus food security since together they run over 30 food service outlets on campus and employ a considerable number of students (group 20).

Scenario 7: Customer awareness of and participation in sustainability (Group 12, 16, 18)

- Proposed future UBC food sustainability marketing and educational campaigns include: using the September Imagine UBC Campaign as a forum to introduce first year students to current UBC food system initiatives, implementing a food week in the SUB with the participation of UBC food providers, UBC Farm, other local producers and processors could set up booths to increase community awareness about the food system and sustainability issues (group 18), implementing a sustainability awareness week in the form of a farmers market with the participation of UBC food providers, Dieticians of Canada, SEEDS, UBC Farm and other local farmers (group 12). Food mile menus could be incorporated in UBC food provider menus, whereby the origin of selected items is displayed (group 18).

Scenario 8: What are the perceptions of UBC customers regarding prices of food at UBC? (Group 2, 3, 4)

- Identifying UBC customer perceptions regarding the price of food at UBC could be established by distributing a survey to assess customer purchasing behavior and their perceptions of food variety; current prices of food, willingness to support and pay for increases in variety and nutritious foods, and locally and environmentally sound produced foods (group 2, 4).
- A comparative analysis could be conducted comparing the monthly cost of nutritious foods for students living in UBC residences with the cost of a Healthy Food Basket (group 3).

Specific Findings: 2004 Summer AGSC 450 Groups

Scenario 1: Re-Localization of UBC's food system
1A: Desirability of re-localization (Group 1)

- A survey should be distributed to a random stratified sample of UBC students, staff and faculty, to assess the desirability of the UBC community to purchase local food, and their willingness to pay for local food products (group 1).
- Students should conduct two pilot tests, one before and one after the launching of a local food educational campaign, which will provide the opportunity to (1) document the impact of education awareness; (2) demonstrate the level of need for an educational campaign; (3) aid in tailoring an education campaign towards specific information gaps and demographic needs (group 1).

1B: Feasibility of re-localization (Group 2, 3)
- "Re-localizing fresh produce at UBC is very ecologically feasible, since 83% of the produce ordered by UBC Food Services and AMS Food and Beverage Services can be obtained from a local source" (group 2).
- Between July and October, BC has the most local produce available for purchasing, and thus these are key months where UBC food providers could increase their local produce purchasing (group 2).
- Some local commodities that are currently purchased by UBC food providers from Central Food Co. and Allied Food Services can be found at lower prices at Van-Whole Produce Ltd. (group 2).
- A table ad should be displayed on table tops at busy UBC food outlets along with posters around outlets, depicting a list of the benefits of local foods, a description of the corresponding broader educational campaign, a re-localization of food logo, a list of contact information, and a brief description of the UBCFSP (group 3).

Scenario 2: UBC Farm: To create a new production plan for the UBC Farm (Group 4)
- Activities at the UBC Farm should be divided into three areas: Market Garden, Education and Outreach, and Agroecological Research. Following the model at UC Santa Cruz, each area be made an economically self-sustaining program (group 4).
- UBC should implement a Community Supported Agriculture (CSA) Program, whereby UBC students, faculty, staff and/or UBC food providers purchase shares at the beginning of the growing season, and in turn, receive a box of assorted produce on a weekly basis (group 4).
- An Agroecological research centre should be developed to conduct collaborative research with "local organic farmers and producers, community gardeners, agribusiness and government agencies" (group 4).
- UBC farm should be integrated into UBC Student Orientation days, and Imagine UBC to promote awareness of its existence and to attract participation in the Farm (group 4).

Key Recommendations

Campus Sustainability Office (CSO):
- Should aid in promoting the UBC Farm as a site of production, and as a site for "valuable education, research and social services" (group 14).
- Should aid in increasing awareness about the UBC Food Co-op by integrating information about its services and the significance of these services into the CSO's Sustainability Circles, and also by facilitating collaboration between students, faculties, the UBC Farm and with the Co-op (group 11).
- Should continue to facilitate and strengthen communication between UBC food system stakeholders through CSO forums such as annual Sustainability Circles on food security issues (group 20).
- Should devote significant resources to education and marketing campaigns for UBC sustainability initiatives because "if the community has no knowledge of them, they will not participate, and there will be no support for programs" (group 16).
- Should attempt to "make a sustainability course a mandatory component of all faculties at UBC" (group 3).
- Should provide "support for community-orientated projects such as the student-run Agora, the Food Co-op, and the UBC Farm" (group 3).
- Should hire a student to further refine proposed educational pieces aimed at enhancing the feasibility of re-localization (group 3, summer).

UBC Farm:
- Should sell more produce (group 13) and secure contracts (group 14) with AMS Food and Beverage Services and UBC Food Services.
- Should set up carts and temporary stands around campus to directly sell its products to the UBC community (group 14).
- Should expand its operations to include winter production (group 14).
- Should develop contracts with AMS Food and Beverage Services and UBC Food Services to implement a Community Supported Agriculture (CSA) program (group 3, summer).

- Should propose a referendum "to increase AMS student fees as a mechanism to finance a large portion of the proposed UBC Farm CSA program" (group 3, summer).
- Should propose UBC bus service to UBC Farm (group 3, summer).

UBC's Major Food Providers (Alma Matter Society Food and Beverage Services and UBC Food Services):

- Should implement a monthly feature commodity which has low indirect costs (group 8),
- Should make a commitment to purchase at least 10% of their food products locally (group 17).
- Should develop "food procurement guidelines that include an outline for ethical decision making towards sustainability" (group 17).
- Should try altering their menus to include more seasonal food choices (group 13), and increase purchasing of local food products when availability peaks between the months of July-August (group 2, summer).
- Should implement a local food buying policy in their current written food procurement practices (group 13).
- Should "purchase locally grown foods when given the opportunity, and preference should be given to foods produced in an ecologically sustainable manner" (group 6).
- Should implement a food mileage labeling system to help justify the true cost of foods (group 6).
- Should "implement a 'true-cost' pricing system…that reflects environmental costs associated with foods that travel long distances" (group 19).
- Should implement strategies to increase demand and awareness among the UBC community for low mileage foods (i.e. discounts on local food items, sticker and labels on low food mileage items, Food Miles Goal Week, Food Miles Reward cards, pamphlets, posters and handouts advertising the benefits of low mileage foods (group 19).
- Should launch a campus wide campaign to increase awareness among UBC consumers about the benefits of local foods, and the implications of consuming foods with high food miles (group 6, 17).

UBC Waste Management:

- Should implement a color-coded waste system, whereby different colors are assigned to garbage, recycling and compost bins. Waste Management should partner with the UBC Food Co-op to educate UBC consumers about the use and benefits of the color-coded system. (Group 5).

The main strengths in the spring 2004 term included a high level of student energy and devotion, strong dedication to and high attendance at the class finale feast, and unique and creative ideas that emerged from group's work, especially when considering the overall complexity of their assigned scenarios. The main weaknesses in the spring 2004 term included technology failure, which interfered with group presentations on the last day of classes, the absence of a common language regarding the meaning of indicators and attributes, and ambiguity about the UBC food system boundaries and the concept of local food.

The main strengths of the UBCFSP in the summer term included the high level of student and teaching team enthusiasm. The main weakness was the brevity of the course (three weeks). This greatly affected student's ability to adequately reflect on course material and put as much time into their scenarios as desired.

INTRODUCTION

A UBC Food System Project (UBCFSP) was created in 2001 in an effort to improve the sustainability of UBC's food system. The UBCFSP is a Community Based Action Research Project initiated jointly between the Faculty of Agricultural Sciences and Social Ecological Economic Development Studies Program (SEEDS). The Project is radially organized involving multiple stakeholders: UBC Food Services, UBC Waste Management, UBC Farm, UBC Campus Sustainability Office, SEEDS, Faculty of Agricultural Sciences (AGSC 450 students and teaching team), and the Alma Mater Society (AMS) Food and Beverage Services. The project officially commenced in 2002, and has a minimum 5 year plan. The UBCFSP is part of an AGSC 450 Land, Food and Community III course, one of three interdisciplinary series courses that share a focus on sustainability and food system issues, and is required for all AGSC undergraduate students. Students are assigned specific case studies or scenarios in which they must work collaboratively in groups to develop plans for sustainability transitions. Each year students must build off the work of previous years of the project, in turn creating an immense collective memory that grows each year.

The **goals** of the UBCFSP are:
(1) Conduct a UBC food system assessment, using the 3 legged stool of sustainability approach (social, ecological and economic).
(2) Identify barriers that impinge on the ability of UBC food system stakeholders to make desired transitions towards sustainability and to identify and create opportunities to enhance the sustainability of the UBC food system.
(3) Create a shared vision among UBCFSP stakeholders regarding what a sustainable UBC food system should ideally look like.
(4) Develop a shared model among UBCFSP stakeholders regarding what our transition towards a sustainable UBC food system should look like.
(5) Develop and articulate recommendations to UBCFSP stakeholders, regarding what changes need to occur to facilitate and achieve transitions to sustainability within the UBC food system, by identifying barriers and opportunities to achieve the collective shared vision and goals.

2002: Year One

The UBCFSP commenced in 2002. Using an exploratory approach, 150 AGSC 450 students (17 teams) and the AGSC 450 teaching teams began the ambitious task of conducting the first stage of a UBC food system assessment. Students were assigned the general task to conduct "a preliminary assessment of the sustainability (social, ecological and economic) of one aspect of the UBC food system…propose research methods, indicators and make recommendations to the UBCFSP partners" (Bouris, 2003: 5). On the last day of class students had to present their findings, website and submit a report. Details of the tasks assigned to students in Year One can be found in Brunetti, A & Rojas, 2002. *The Sustainability of UBC Food System Collaborative Project II*. Online at: http://www.webct.ubc.ca

A summary of findings for Year 1 can be found in Brunetti, A. 2002. *Biting into Sustainability: The 2002 UBC Food System Collaborative Project Report*. Online at: http://www.webct.ubc.ca
Student websites and reports can be found in the Project Archives in the mywebCT course website.

2003: Year Two

Based on the findings of Year One, 2003 marked the second generation of students who began the continuation of the project. The main purpose of the 2nd year was to begin to come up with a vision of what a sustainable UBC food system should look like, and what are the steps necessary to make this transition to the vision (Rojas, A & Wagner, J., 2004: 3). Working from one case, 151 AGSC 450 students (20 teams) and the AGSC 450 teaching team began the task of developing a research methodology and design what they thought would act as a tool in assessing the sustainability of the UBC food system. Students were assigned the general task to "recommend a series of principles, procedures,

indicators, system maps and a conceptual model that would guide future research", as well as identify their value assumptions that influenced their approach to the project (Bouris, 2003: 6). On the last day of class, students had to submit a report, and present their findings and website to the class.
Summary of findings for Year 2 can be found in Bouris, K. 2003. *2003 UBC Food System Collaborative Project: Summary of Findings*. Online at: http://www.sustain.ubc.ca/matrix/seedsindexs/seedsfood.htm
http://www.webct.ubc.ca
Student websites and reports can be found in the Project Archives in the mywebCT course website.

2004: Year Three

Based on the findings of Year One and Two, 2004 spring and summer marked the Third and Fourth generations of students who began the continuation of the project. A regular 4 month spring term AGSC 450 course was held, as well as the first time offering of a 3 week intensive summer term AGSC 450 course.

Spring:

The **main purpose** of the 3rd generation (Spring 2004) of AGSC 450 course was to:

(1) Attempt to reach a shared consensus in regards to what a sustainable UBC food system should look like (vision) and how should we get there (Model of transition) within the AGSC 450 class *and* among the rest of UBCFSP stakeholders. Attempting to reach both this shared vision and model was to be reached through a process whereby a list of "general tasks" were assigned the entire class, where Spring groups were "engaged in critically evaluating and choosing the most appropriate research designs, models, principles and indicators proposed in 2003" (Rojas, Wager & Richer, Summer 2004: 3).

(2) To test the applicability of group's preferred best models, indicators, principles and research designs in one of eight assigned scenarios/case studies. Scenarios were developed between the AGSC 450 teaching team in consultation with all other UBCFSP partners, reflecting partner information needs, wants and the broader agenda of the project. Each scenario reflected "very real problems needing investigation to better identify the actions needed to move the UBC food system towards sustainability" (Rojas, Wagner & Richer, and summer 2004: 3).

A total of 143 students were divided into 20 working groups and were assigned 1 of 8 scenarios listed below that explore UBC food system sustainability in greater depth. A set of corresponding specific tasks were also assigned with the Scenario. All groups had the option of choosing 3 or more of the specific tasks depending upon the complexity of the tasks.
Scenarios were developed based upon consultations with the Campus Sustainability Office, the Agricultural Undergraduate Society (AGUS), UBC Farm, UBC Food Services, AMS Food and Beverage Services and upon findings of Year 1 and 2 of the UBCFSP (Rojas & Wagner, spring 2004: 6).

Scenario #1: What would a student-run Agora food service operation integrated with the Faculty's curriculum look like? (Group #7, 15)
Scenario #2: Costs of locally produced food: Best Practices for Sustainable Food Procurement
2A: True costs of food (Group #8, 10)
2B: Feasibility of the re-localization response (Group #13, 17)
Scenario #3: Food mileage (Group #6, 19)
Scenario #4: UBC Farm: Assessing the Potential of Forming Market Relationships with Campus Food Providers (Group #9, 14)
Scenario #5: Assessing the potential for a student-run cooperative organic grocery outlet in UBC's Student Union Building (Group #1, 5, 11)

Scenario #6: Develop a definition for food security of the UBC campus in the context of UBC's efforts to become a sustainable campus and reviewing carefully what has been done in other areas of sustainability at our university (Group #20)
Scenario #7: Customer awareness of and participation in sustainability (Group #12, 16, 18)
Scenario #8: What are the perceptions of UBC customers regarding the price of food at UBC? (Group #2, 3, 4) (Rojas & Wagner, Spring 2004: 5)

All groups were assigned the following **General tasks:**

1. From the 2003 working teams' projects, choose the best model for the sustainability of the UBC Food System. We suggest that you concentrate on the "Four Best UBCFSS 2003 Papers and Websites;" however, you may wish to browse through all the 2003 papers and websites and choose another one. Provide a rationale for your choice.

2. Using this model, and adapting it as necessary, briefly asses the problem definition provided by your colleagues last year in your chosen model. If needed, critique and modify that problem definition.

3. Assess whether the criteria and indicators of sustainability presented in your chosen model can be applied to locate the UBC Food System in the 'Sustainable-Unsustainable" continuum.

4. Identify at least three sustainability indicators (one economic, one ecological and one social) to assess the contribution of the Scenario assigned to your group to the overall sustainability of the UBC Food System. Your choice of indicators should be consistent with the model for the sustainability of the UBC Food System chosen by your team; the indicators may be ones already identified in 2003, or if necessary you may identify or develop more appropriate indicators.

5. Design the instruments (e.g. interview guide or questionnaire or other data gathering procedures) to collect the data needed to measure the indicators selected for your assigned scenario.

6. Prepare a report to be professionally presented in both written and verbal forms to the relevant client or audience for your assigned scenario (e.g. Agriculture Undergraduate Society, the Faculty of Agricultural Sciences, UBC Food Services management and staff, AMS Food Services management and staff, Campus Sustainability Office, UBC Farm, etc.). The report will make recommendations for further research. (Rojas & Wagner, Spring 2004: 5).

7. Identify the underlying value assumption(s) in your working-team's report. The task is a straightforward identification of whether your group's analysis is informed by an eco-centric, anthropocentric (weak or strong), community-based or individual freedom-based ethical perspective. Report if there was more than one position in your group. Based on this perspective(s) identify what aspects of food system sustainability your group considers more desirable and significant. Identify also limitations of your perspective(s).

8. Recommendations to the UBC Office of Campus Sustainability on ways to make the Food System more sustainable at UBC with reference to your specific task. (Rojas, Spring 2004: 6).

Results were to be presented in both written and oral format. The written report was supposed to constitute a 15 page paper plus appendices, table of contents, tables, abstract and bibliographies. Findings were to be presented in a 25 minute oral presentation, where students had to present both their findings and their website to the class and invited UBCFSP guests.

On the second last day of classes, all groups had to present their papers and websites to the entire class and teaching team. On the last day of class, all groups had to submit a report and 4 of the best presenting groups that were selected by the teaching team with input from the class, had to present their findings and website to the class, as well as UBCFSP members who could attend. A "feast" was held in Agora (Macmillan building) after class to celebrate the class finale. Members of the AGSC undergraduate Society (many who were students in the class), AGSC 450 teaching team, AMS Food and Beverage Services and UBC Food Services all contributed to the event by either staying up late preparing and cooking food, collecting money, offering equipment donations, and organizing the event.

Attendance was overwhelming and lots beverages were offered from beer to punch, and a wide choice of food was prepared from vegan burgers to organic beef burgers.

A full description of the case scenarios, general and specific tasks assigned can be found in **Appendix A.**

Summer:

The **main purpose** of the 4th generation of AGSC 450 course was to:

(1) Begin to further develop and integrate findings from 2002 and 2003 AGSC 450 classes, to enable 2005 AGSC 450 class to actually go out in the community and engage in actual data collection, and to aid in planning of new initiatives involving all UBCFSP partners in the summer and fall.
(2) To either develop a detailed step by step methodology (what, why, by/with whom, when, where and how?) and if necessary a method of data collection (questionnaire, focus groups, etc.) to address the research questions in group's assigned scenarios, or if ready, actually begin to collect the data needed to address the research question (informal interviews, secondary data analysis).
(3) To make recommendations on how to better refine the chosen best model of sustainability (Group 9, 2003) (Note: students were given the opportunity to choose a former AGSC 450 model or develop a new one).

A total of 12 students (initially 60 students were enrolled but had to drop because they did not meet the course pr-requisites) were divided into 4 working groups and assigned 1 of 3 scenarios listed below that explore UBC food system sustainability in greater depth. A set of corresponding specific tasks were also assigned with the Scenario. All groups were asked to complete all of the specific tasks (note: students were given the option that if they felt the tasks were inadequate or excessive they could negotiate with the teaching team to focus on another or work on a different task). Scenarios were based upon findings from Year 1, 2 & 3, developed by the teaching team in consultation with other partners, and were based upon what we thought was the most pertinent to moving the project ahead, and at the same time, what we thought would be feasible for students to accomplish in a 3 week time span.

Scenario #1A: Desirability of re-localization
Scenario #1B: Feasibility of re-localization
Scenario #2: UBC Farm: Creating a new production plan for UBC farm

All groups were assigned the following **General tasks**:

- Briefly assess the chosen model (Group 9: 2003) in terms of its adequacy to guide the transition of the UBC food system towards sustainability, and if needed, critique and modify it.

- Recommendations to the UBC Office of Campus Sustainability, UBC Food Services, AMS Food and Beverage Services, UBC Waste Management, and/or UBC Farm on ways to make the Food System more sustainable at UBC with reference to your specific task.

- Methods you recommend for next year's data collection and any needed instrument (questionnaire, semi-structured interviews, interviews for key informants, etc).

- Identify the underlying value assumption(s) in your working-team's report
  The task is a straightforward identification of whether your group's analysis is informed by an eco-centric, anthropocentric (weak or strong), community-based or individual freedom-based ethical perspective. Report if there was more than one position in your group. Based on this perspective(s) identify what aspects of food system sustainability your group considers more desirable and significant. Identify also limitations of your perspective(s).

Results were to be presented in both written and oral format. The written report consisted of a 25 page report including appendices, abstract, table of contents and bibliographies. Findings were presented in a 25 minute oral presentation, where students had to present their findings using a PowerPoint presentation to the class and teaching team. Presentations took place on the last day of classes, and reports were submitted shortly thereafter.

A full description of case scenarios, general and specific tasks assigned can be found in **Appendix B.**

Purpose of this paper:

In total 20 different group papers were prepared by AGSC 450 in spring 2004, and 4 different group papers were prepared by AGSC 450 in summer 2004. This amounted to approximately 700 pages of findings, proposed methodologies, and recommendations, based upon 10 problem based scenarios or case studies.

The purpose of this paper is threefold:

(1) To integrate and summarize key findings and recommendations developed by AGSC 450 students involved in the UBCFSP in 2004 (both spring and summer terms) for UBCFSP partners.
(2) To aid in preparing the groundwork required for Year 4 (AGSC 450, spring 2005) of the project.
(3) To aid in initiating, strengthening and coordinating communications and initiatives among UBCFSP stakeholders.

PROJECT METHODOLOGY AND DESIGN

Methodological Perspective:

Community Based Action Research (CBAR) serves as the overarching methodological perspective in the UBCFSP. CBAR can be defined as an "inquiry or investigation that provides people with the means to take systematic action to resolve specific problems"; it enables "people (a) to investigate systematically their problems and issues, (b) to formulate powerful and sophisticated accounts of their situations, and (c) to devise plans to deal with the problems at hand" (Stringer, 1999: 17). The tasks of CBAR are to capture participants' pluralistic voices and to situate their experiences within larger contexts. The goals of CBAR are to produce knowledge through open discourse; produce action and change, and to give research back to the community in which it originated. The process of CBAR is an iterative one, whereby research is conducted through a "look, think, act" routine, which involves a "constant process of observation, reflection and action" (Stringer, 1999: 19).

In the UBCFSP, AGSC 450 students (assigned in groups between 3-8 people depending upon size of the class) are primarily responsible for designing, conducting research and planning initiatives. Other UBCFSP partners are involved namely in designing and planning initiatives, and in acting as resource persons. The AGSC 450 teaching team primarily acts as resource persons, facilitators, and in planning the entire project based upon student work and discussions with stakeholders.

Methods of Data Collection:

Secondary sources:

Typically, students obtained the majority of their information form analyzing secondary sources. The most popular secondary sources used by all groups were course readings, materials from AGSC 450 course webCT site, and electronic and written material from UBCFSP partners and stakeholders.

The AGSC 450 webCT site contained archives of all previous AGSC 450 students' papers and websites involved in the UBCFSP, relevant information and links helpful to their scenarios and general tasks posted by the teaching team, and summaries of findings of the UBCFSP from previous years.

Presentations:

Information was obtained by students from invited guest speakers who typically gave a brief presentation to the class and then opened the floor for questions and discussion. Guest speakers during the spring 2004 term, included representatives form UBC Food Services, Alma Mater Student Food and Beverage services, UBC Campus Sustainability Office (CSO), UBC Social Economic Ecological Environmental and Development Studies (SEEDS), UBC Farm, Dieticians of Canada, City of Vancouver Social Planning. Guest speakers during the Summer 2004 term, included representatives from UBC Food and Beverage Services, AMS Food and Beverage Services, CSO, SEEDS, City of Vancouver Social Planning, Faculty of Agricultural Sciences, and the UBC Farm.

Informal interviews:

Information was obtained by students through informal email and telephone inquiries or interviews. Depending upon the scenario groups were assigned, information was obtained from UBCFSP partners, other UBC stakeholders, and outside product distributors to highlight a few sources.

OVERVIEW OF GENERAL PROBLEM DEFINITION

The UBCFSP was initiated in 2001 because of the lack of integration of food and related issues in UBC's campus sustainability policy, and has continued because of growing realities that transitions need to be made in many areas in UBC's food system to increase its sustainability.

All groups in both the spring and summer 2004 AGSC 450 terms had to begin their project by giving a definition of problem(s) in UBC's food system. Groups in the 2004 spring term were also given the task of assessing the problem definition provided in the group's chosen best model's paper from 2003.

The rationale behind assigning groups the task of defining problem(s) in UBC's food system is that it allows one to answer the vital question: Why do we need to study the sustainability of the UBC Food System in the first place? The responses of this question serve as a starting point to begin a UBC food system assessment, and in addressing identified problems with initiatives and action plans.

Why study the sustainability of the UBC food system?

- Lack of awareness among UBC community regarding their food system, concepts of sustainability and current sustainability initiatives (group 4, 6, 8, 11, 12, 16, 18).
- Lack of participation in current UBC sustainability initiatives (group 12, 18).
- "The future of food security at UBC is highly dependent on the sustainability of the food supply entering the campus" (group 20).
- Food has traveled excessive miles to get to UBC, and excessive food mileage is associated with negative environmental impacts and decreased nutritional value (group 6, 19).
- Perception that a lack of affordable food exists on campus (group 5, 6).
- Lack of access to unprepared food on campus (group 5).
- Low availability of organic and other ecologically sound produced goods (group 11).
- Lack of access to locally produced foods on campus (group 6, summer group 3).
- "Although there are a number of recycling systems interspersed around campus, these types of systems require substantial improvements to increase the efficiency of on-campus composting and recycling programs in order to divert more solid waste from the landfill" (group 6).

- "Food is essential to our survival and the maintenance of our health and vitality, as well as a central figure in out culture, traditions, and values" (group 19).
- UBC food providers face many demands, on the one hand they need to be financially self-sustaining, and at the same time "provide a full range of food products and services to a diverse clientele, at low prices, within a narrow a fluctuating window of time, while simultaneously contributing to campus sustainability and the sustainability of the local, regional and global ecosystems" (group 7).
- Need "to find the right balance of locally produced, seasonal and imported foods purchased that would most feasibly support a 'sustainable diet' in terms of environmental, economic and social impacts" (group 10).
- Food system is characterized by compartmentalization, "where consumers have very little connection to the producers and food production systems" (group 11, Summer Group 1).
- UBC Farm "is an under-utilized, under-developed resource that lacks shared vision among all stakeholders involved and consolidated leadership within the UBC community" (Summer Group 4).
- UBC Farm is currently economically unsustainable (Group 9, 14, Summer Group 4).
- "Every year there is a turnover of students, faculty and staff, therefore changing the stresses placed on the UBC food system" (group 20).
- "Lack of a sustainability clause and food purchasing policy in the UBC Food Services mission statement" (group 6).
- UBC's "current administration is doing little to support sustainability on campus" (group 3).
- "Although more nutritious options are becoming available, the majority of food currently offered on campus is not nutritious, nor is nutritional information provided" (group 5, 6).
- UBC continues to experience significant population growth, associated with this trend is loss of green space, urban development encroachment, increased fossil fuel use, loss of agricultural land, greater demand on the food system, increased food miles and waste (group 16, Summer group 1 & 4).
- "We must all seek to lead more sustainable lives, and recognize that it is not only important to be *aware* of the options, but we must also be *active* participants in the move to become more sustainable" (group 18).

SUMMARY OF VISIONS OF A SUSTAINABLE UBC FOOD SYSTEM

All groups in both the spring and summer 2004 AGSC 450 terms were assigned the task to develop and present their position in relation to the sustainability of the UBC food system. Specifically, groups were asked "What is your vision of a sustainable UBC food system?" and "What does a sustainable UBC food system look like?" Group responses ranged from listing very specific attributes, to very broad and encompassing visions of what a sustainable UBC food system should look like.

Based upon both the Spring and Summer 2004 AGSC 450 group papers, the summary of findings from 2003 AGSC 450 class in "2003 UBC Food System Collaborative Project: Summary of Findings" (Bouris, 2003), and in consultation with the principle investigator of the UBCFSP, I have presented a summary of UBC food system sustainability visions. These visions and specific attributes have been summarized and/or broken down into 7 guiding principles, which make up a single vision statement. This vision statement will be presented at a UBCFSP stakeholder workshop in the Summer of 2004, where all stakeholders will be asked whether or not they agree with each principle of this vision statement, and for proposed revisions if they do not agree, in an effort to reach consensus about what *our* vision of a sustainable UBC food system looks like.

A Sustainable UBC Food System: Vision Statement

<u>7 Guiding Principles:</u>

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

OVERVIEW OF BEST MODELS OF A SUSTAINABLE UBC FOOD SYSTEM

Purpose of a model:

The purpose of a model is twofold: **(1)** To provide a visual framework to talk about a general vision, as well as, specific attributes of a sustainable food system; **(2)** To act as a central tool, through the use of indicators to measure to what extent components of the vision are being achieved. In other words, the model provides a central means of documenting just how well *or* how poorly we are doing in making *strides* towards sustainability and in what *areas*.

Spring 2004

In spring 2004, the AGSC 450 teaching team chose 4 models developed by the 2003 AGSC 450 class as the best models of a sustainable UBC system. The spring 2004 class was assigned the general task of choosing the best model, a hybrid of a few models from the 2003 AGSC 450 class 20 websites and papers, or to create an entire new model. In the interest of moving the UBCFSP forward, the teaching team recommended that groups choose one or more of the best four models (group 3, 9, 14, 18) selected by the teaching team.

Specifically, students needed to situate the UBC food system and their assigned scenario within their chosen model, evaluate the model's attributes, problem definition, indicators, esthetic appeal, and use value.

Spring 2004 Students Chosen Model(s)

Listed below is a breakdown of the preferred 2003 models and the corresponding number of spring 2004 groups that chose the preferred models:

Table 1: Best 2003 models indicated by 2004 AGSC 450 students

2003 models	*2004 groups*	*Total number*
Group 3 2003 model	(group 4)	***1**
Group 9 2003 model	(group 6, 10, 16, 18)	***4**
Group 14 2003 model	(group 1, 2, 3, 7, 8, 9, 13, 17, 20)	***9**

Group 18 2003 model		***0**
Hybrid of Group 3 and 9	(group 14)	***1**
Hybrid of Group 9 and 14	(group 11, 12, 19)	***3**
New model	(group 15)	***1**
No model	(group 5)	***1**

*Total number of groups who chose this model(s) as the best model

As **Table 1** indicates, 45% of AGSC 450 students chose group14 2003 model, 20% chose group 9 2003 model, 15% chose a hybrid version of group 9 and 14 2003 models, and 0.05% chose either group 3 2003 model, a hybrid version of group 3 and 9 2003 models, developed their own model or neglected to chose or create a model. No groups chose group 18 2003 model as the best.

Summary of spring 2004 Students guiding principles (including their recommended additions) for their chosen best model(s):

Groups were also assigned the general task to "assess whether the criteria and indicators of sustainability presented in [their] chosen model can be applied to locate the UBC food system in the 'Sustainable-Unsustainable' continuum" (Rojas & Wagner, Spring 2004: 5). In other words, groups assessed the indicators and criteria presented in their chosen model to determine how applicable they were to locate the UBC food system. Typically, groups agreed with at least some of the indicators and criteria presented in the model, but also presented new indicators or criteria that they thought should be added to improve the model. A summary of these additions are presented below in **Tables 1 to 6**.

A main flaw in the model (particularly group 9 2003's model) is that indicators (quantifiable measurements) were confused with attributes (qualitative characteristics) by many students. In hindsight, the AGSC 450 Teaching Team has realized that both in the spring and summer we neglected to point this critical error out during the term. As a result, a slippery slope occurred, whereby many groups submitted final papers that reflected this ambiguity in their creation and application of indicators and criteria. In turn, I have summarized group's proposed indicators and criteria by translating them into new categories when necessary. Listed below is a list of terms with corresponding definitions that hopefully will solve this problem in the future. Please note that in parentheses are the actual terms that many groups used in their papers and models.

Vision

- General overarching synthesis of ideas that describe attributes of a sustainable food system.

Dimensions (formerly referred to as indicators in model)**:**

- 6 overlapping areas (Social, Ecological, Economic, Social-Ecological, Social- Economic, Ecological-Economic Dimensions) that a vision operates through.

Guiding Principles (formerly referred to as attributes, criteria or characteristics in tasks and models)**:**

- Those specific attributes that should guide us or provide direction towards achieving a sustainable food system vision

Indicators (formerly confused with qualitative attributes, now named guiding principles)**:**

- Quantifiable expressions of the guiding principles, which measure precisely how well or poorly a system is doing.

6 Dimensions of the Vision and Corresponding Guiding Principles:

1. ECOLOGICAL – SOCIAL DIMENSION*

- Awareness among UBC community in regards to the benefits of local food (gr
  10, 11, 12, 13, 17, 19)
- Awareness among the UBC community of "the concept of food mileage and its implicati
  group sustainability" (group 19)
- Awareness among UBC community of externalities in the food system (gr
  14)
- Amount of knowledge that the community has of the concept of food security (gr
- "Use of sustainable food system initiatives on campus by faculty, staff and student
  18)
- Awareness of organic and fair trade food (group 11)
- Level of environmentally friendly practices being practiced by the UBC populat
  (group 5)
- Number of disposable products consumers use versus reusable products (gr
- Awareness among UBC community of sustainability initiatives (group 12, 16, 18)
- Awareness among UBC community of the food system and concept of sustainab
  (group 3, 4, 5, 9, 11, 12, 13, 14, 17, 18, 19)

2. SOCIAL DIMENSION*

- Access to organic and fair trade foods (group 11)
- "Accessibility to a wide variety of culturally appropriate and diverse meals" (group 5, 6, 7, 8, 14, 20)
- Perceived accessibility to both processed and unprocessed foods on UBC campus (group 5, 14)
- Availability of nutritious and safe foods (group 2, 5, 6, 7, 8, 14, 17, 20)
- Awareness among the UBC community of nutritious foods (group 1, 9, 20)

3. SOCIAL – ECONOMIC DIMENSION*

- Profit return for local producers (group10)
- "Affordability of nutritious foods" (group 3, 5, 6, 9, 14, 20)
- Social equity of profits made within the food system (group 10)
- Affordability of UBC farm products (group 14)
- Affordability of organic and fair trade goods (group 11)
- Perception of current food prices at UBC (group 3)

4. ECONOMIC DIMENSION*

- Hours of operation of food services (group 5)
- "Amount of local economic cycling" (group 10)
- Profitability of food service operations (group 4, 5, 10, 11, 14, 18, 19)
- Profitability of local food producers (group 10, 14)
- Profitability of UBC Farm (group 10, 14)
- Profitability of a *sustainable* UBC food system (group 16)

5. ECONOMIC – ECOLOGICAL DIMENSION*

- "Money saved from compost materials diverted from a landfill" (group 6)
- Price of locally produced and conventional food products on campus (group 3, 13)
- Amount of food available on campus where prices reflect real costs (i.e. social and environmental costs) (group 3)

6. ECOLOGICAL DIMENSION*
• Distance food travels from where it is cultivated to where it is consumed in the UBC community (group 1, 2, 4, 5, 6, 8, 9, 10, 11, 13, 14, 18, 19, 20)
• Weight of ecological footprint (group 4, 8)
• Amount of waste that is diverted form landfills as a result of waste reduction practices, such as composting, recycling, etc. (group 5, 9, 11, 14, 16, 18, 20)
• Level of collaboration UBC Food Providers have with local food producers and distributors (group 3, 5, 9, 11, 14, 15, 18)
• Water quality health (group 10)

*Guiding principles are grouped under the following 6 Dimensions (group 9 2003 called indicators).

The majority of spring 2004 AGSC 450 groups chose group 14 2003 as the best model. However, while reviewing their papers, I found that the majority of the groups found that group 9's breakdown of indicators into 6 overlapping ones (now called dimensions) was the most effective conceptually, practically, and most useful division of dimensions. Thus, the majority of the groups favored group 14's problem definition, and favored group 9's model for the pictorial, practicability, and usefulness of the 6 interconnecting dimensions. See **Appendix C** for Group 9 2003's model.

Summer 2004

In the summer 2004, the AGSC 450 teaching team chose Group 9 2003 model as the best model of a sustainable UBC food system. Group 9 was chosen because of its excellent pictorial image, 6 interconnecting dimensions, usefulness and practicability. As mentioned above, even though most of the 2004 spring students preferred Group 14's problem definition, the majority of the class favored the actual visual representation and characteristics of Group 9's model.

The summer 2004 class was assigned the general task to "briefly assess the chosen model (group 9 2003) in terms of its adequacy to guide the transition of the UBC food system towards sustainability, and if needed, critique and modify it" (Rojas, Wagner & Richer, 2004: 6). Students were also given the opportunity to dispute the choice of Group 9 as the best model, by proposing a different model or creating a new model altogether. A summary of groups additions to Group 9 2003's model is outlined below in **Table 1 to 3**. Note that in only two of the four group reports submitted were any assessments of group 9's model noted explicitly.

Summary of summer 2004 Students Assessment of Chosen Model

1. SOCIAL DIMENSION
• **Physical health of UBC community members (group 4)**
• **Spiritual and emotional health of UBC community members (group 4)**

2. ECOLOGICAL DIMENSION
• **Levels of biological diversity on campus (group 4)**
• **Quality of water health**

- **Quality of soil health**
- **Ecological soundness of farming practices (group 3)**

3. ECONOMIC DIMENSION

- **Long term financial stability of food system providers and producers (group 4)**
- **Profitability of local food producers (group 3)**

Group 3 adapted Group 9 2003's model, based on their own critical additions, and also integrated components of group 14 and 18 2003's model into a brand new model. Group 3 repositioned all of the scales used in group 9's model so that they were consistent and centered. Rather than having scales go outside of the Dimension circles, they incorporated the scales within the boundaries of the circles. They also adopted Group 14 2003's use of scaled rainbow colors to group 9's model, because they thought this would add clarity in the process of inserting indicators into the model, by making them easier to interpret. Each color in the 3 three dimensions corresponds with a sustainability rating on a scale of 1 (unsustainable) to 6 (sustainable). See **Appendix C** for Group 3's new model.

Revised Best Model

Based upon recommendations made by both spring and summer groups and consultation with members of the AGSC 450 teaching team, I have presented a revised best model. See **Appendix D** for the draft revised best model. Please note that the graphics (the circles are not centered and there are spokes in the circle) in the model are incomplete. This model will be presented to the rest of UBCFSP partners to reach a final consensus on the model.

Overview of 2004 Spring Scenario #1: What would a Student-run Agora Food Services Operation Look Like?

Summary of Specific Problem Definition

In the Winter session of 2003, Agora, a food outlet located in MacMillan Building, was closed by UBC Food Services due to its low profitability and limited hours of operation, food variety, and general level of dissatisfaction by patrons. However, both UBC Food Services management and the Agricultural Undergraduate Society have shown interest in creating a student-run operation that would provide experiential learning opportunities, and aid in contributing to a sustainable UBC food system.

General Research Question:

To determine what a student-run Agora should look like, and how it should be integrated with the Faculty of Agricultural Sciences curriculum.

Summary of Scenario Specific Sustainability Indicators & General Principles and Proposed Methods of Data Collection

Social Indicators (I) and Guiding Principles (GP):

- Level of food security (GP) (group 7)
- Level of knowledge held by the UBC community about issues affecting the UBC food system (GP) (group 7)
- Number of hours of operation and volunteers at Agora (I) (group 15)
- Availability of nutritious and appropriate foods at Agora (GP) (group 15)

Proposed method of data collection:

- "Agora's contribution to food security of the MacMillan community be assessed via a survey that measures the acceptability, affordability and availability of the food products and services it provides" (group 7). See **Appendix F** for group 7's questionnaire.
- A questionnaire should be distributed to all Agora visitors and consumers to assess their level of knowledge of issues affecting the UBC food system (group 7). See **Appendix F** for group 7's questionnaire.
- The number of hours of operation and volunteers at Agora can be measured by recording the total number of hours that Agora is open each week and the total number of volunteers, the hours that each worked, the number of shifts missed, and the number of hours where no volunteers were available to work that week (group 15).
- The availability of nutritious foods at Agora can be measured by examining the number of items on the menu that are consistent with recommendations in Canada's Food Guide to Healthy Eating" and the number of items that are inconsistent with their recommendations (group 15).

Economic Indicators (I) and Guiding Principles (GP):

- Economic viability of Agora (GP) (group 7)
- Affordability of food sold at Agora (GP) (group 15)
- Fair profitability at Agora (GP) (group 15)

Proposed method of data collection:

- The economic viability of Agora should be measured in two ways: the degree to which it is "independently profitable (revenues exceeds costs) in the year of examination, or if it has guaranteed funding sufficient to meet its fixed costs for the next three years". Specifically, Agora should be deemed "0% economically sustainable if its revenues are less than its costs in the year of operation *and* if it does not have guaranteed funding sufficient to meet its fixed costs for either that year or any future years". A percentage scale can be used to assess the economic viability of Agora (group 7). See **Appendix E** for group 7's percentage scale.
- The affordability of food sold at Agora could be measured by conducting a comparative price analysis of items sold at Agora with other campus food outlets (group 15).
- Fair profitability at Agora can be measured by examining the percentage of revenue that Agora invests into projects that benefit the Faculty of Agricultural Sciences and by examining "monthly financial statements prepared by the Agora committee to determine if all variable costs are covered by net income" (group 15).

Ecological Indicators (I) and Guiding Principles (GP):

- "Percentage of waste generated by Agora that is recycled" and/or composted (I) (group 7,15).
- Percentage of disposable cutlery used versus the number of re-usable containers used by Agora patrons (I) (group 15).
- Percentage of local food purchased by Agora (I) (group 15).

Proposed method of data collection:

- To measure the percentage of waste generated by Agora that actually ends up getting recycled and/or composted, a count could be conducted regarding the number of recyclable and compostable materials entering Agora, as well as counting Agora items placed in surrounding compost and recycle bins (group 7).

- Percentage of disposable versus reusable cutlery used by Agora patrons could be measured by conducting weekly counts of the amount and type of cutlery used by Agora patrons (group 15).
- Percentage of local food purchased by Agora could be measured by examining "the number of contractual agreements/collaboration with local producers, including UBC Farm" (group 15).

Summary of Findings

Description of Agora

Model	• Operates under a "community model, which is based upon the loyalty and dedication of its community members" (group 7). • "Governed by a student committee from the Food Nutrition and Health (FNH) Department of FAS" (group 7). • Non-profit, volunteer-based operation (group 15).
Hours of Operation	• Monday to Wednesday, from 9:30am to 12:30pm (group 7, 15).
Location	• MacMillan Building, 1st Floor (group 7, 15).
Services	• **Daily:** o Sells organically grown and fair trade coffee and uses local foods when possible (group 7, 15). o Sells "a variety of convenience items such as juice boxes, granola bars, and packaged crackers" (group 15). o Sell baked goods, such as assorted squares and muffins (group 7, 15). • **Wednesdays (bi-weekly):** o Sells lunches such as soups, wraps and sandwiches (group 7, 15).
Funding and Revenue	• Holds an Agricultural Science Undergraduate Society grant (group 15). • Receives waived monthly rental dues from UBC Food Services (group 15). • Has a "daily turnover of approximately $40" and any profits made are reinvested in the business, such as towards equipment purchases (group 7).
Distributors	• Café Etico supplies Agora with organically grown and fairly traded coffee (group 15).
History	• In April 2003, UBC Food Services closed its operations in Agora due to negative profit margins (group 15). • A FNH student committee signed a 2 year agreement with UBC Food Services to "operate the kiosk as a non-profit, volunteer-based operation to serve the Faculty of Agricultural Sciences" (group 15). • Agora's term of license expires in August 31, 2005, and will then be up for negotiation with UBC Food Services (group 7, 15).

See **Appendix E** for a group 7's full description of Agora's business model.

Assessment of Agora's Business Model

Social Sustainability	• "Provides inexpensive but nutritious foods to its customers". • "Currently fails to make a significant contribution to the food security of the MacMillan community, since its limited food offerings and hours of service are insufficient to outweigh its low prices, and it also fails to make a significant contribution to food system issue awareness".
Ecological Sustainability	• Produces little waste: o Coffee grounds are composted. o Recycling and composting are Agora policy goals. • Waste that is produced is "mostly post-consumer food wrappers and coffee grounds".
Economic Sustainability	• Agora is not "currently economically viable, because it fails to make a profit and has failed to secure long-term guaranteed funding sufficient to meet its fixed costs".

(Group 7)

Challenges Facing Agora: Operational Requirements and Limitations

Challenges	Effects

• **Lack of equipment and appropriate types of equipment:** o Agora facility is equipped with two soup wells, a single basin sink, a microwave, beverage cooler, refrigerated display case, oven, microwave, and shelf space (group 7, 15),	• Agora can only offer a limited variety of foods and heated foods (group 15). • "Volunteers often bake muffins, squares and other goodies at home, and donate them to be sold by Agora" (group 15). • Staff have to use an alternative kitchen (FNSC Room 140) if they want to prepare heated items on campus; which is a "considerable inconvenience because the transportation of hot meals requires hot holders to maintain food temperatures within the recommended safety range" (group 15).
• **Lack of a HACCP plan and certification:** o Agora has no HACCP plan which is required for all BC food establishments by the government of BC (group 15). o Currently, not all Agora volunteers have a Food safe Level 1 Certificate for safe food handling practices (group 15).	• Agora may be forced to shut down, if a HACCP plan is not acquired soon (group 15).
• **Human resource limitations:** o Agora is a volunteer based operation who relies on a small number of volunteers (group 7, 15).	• It is "difficult to retain workers and schedule regular hours of operation" (group 15).

Proposed Business Plan for Agora

Agora's business plan should include:
1. "Spell[ing] out how it can better understand and meet the demands of its consumer base". In order to determine the demands and needs of Agora's customers, a survey should be distributed to assess current and potential customer's perceptions of Agora's menu and services (group 7). See **Appendix F** for group 7's food security and customer demand questionnaire.
2. "Tak[ing] active steps to increase food system awareness". To increase food system awareness, Agora could "provide a physical facility (such as magazine racks or shelves) for the display and exchange of information on food system issues, and investigate the feasibility of hosting weekly/biweekly interdisciplinary presentations. In order for Agora to determine how well it is doing in creating food system awareness among its customers, a survey should be distributed to assess customer's purchasing behavior and level of knowledge, awareness, and perceptions of food systems issues and sustainability concepts (group 7). See **Appendix** F for group 7's food system awareness questionnaire.
3. Placing "its funding arrangements with Food Services and the AGUS on more permanent footing". Agora should "approach UBC Food Services, the AGUS and the FAS with proposals for longer term funding, exploring with these stakeholders what they would expect in return for funding, and how Agora can meet these demands while remaining true to its core values" (group 7).
4. "Intoduc[ing] recycling bins for food wrappers and other post-consumer wastes it generates, and develop plans now for how to deal with the food waste it will generate in the future as its operations expand" (group 7).

Proposed Plan for how a Student-run Agora can Fit into the FAS Curriculum and Values

Rationale for Integrating Agora into FAS Curriculum and Values	1. Agora already shares many of the same values and principles that the FAS embodies (group 7). 2. "Agora is a living example of the abstract ideas being taught in many FAS courses, and so offers the potential to provide valuable experiential learning opportunities to students" (group 7). 3. Agora needs secure funding, and it is believed that FAS can provide this funding (group 7). 4. "Agora attracts customers from all parts of FAS, and so offers the opportunity for interdisciplinary communication and learning" (group 7).
Proposed Methods of Integrating	Agora can be integrated into FAS's core values and principles in the following ways: **Principle/Value #1:** Sustainable systems: balancing ecology, economy and community to provide for a positive future for society

Agora into FAS's Core Values and Principles	to provide for a positive future for society. Agora offers the opportunity to demonstrate the sustainable systems concept in action. By ensuring that Agora meets our criteria for economic, social and ecological sustainability we can ensure that it not only conforms to this core value but is also an example of it for others to follow. **Principle/Value #2:** Food: the necessity to provide safe, nutritious and adequate food supply. This is analogous to our food security indicator. By ensuring that Agora provides a variety of safe, culturally acceptable and affordable food products we can ensure that Agora conforms to this core value. **Principle/value #3:** Health: focus our contributions on the determinants of health which are related directly to sustainable systems, to food supply, and to clean air, water and soil. By ensuring that Agora offers only safe, nutritious foods it will meet this core value. By using Agora as an outlet for the dissemination of food safety and nutrition information it can become an even greater contributor to this effort. **Principle/value #4:** Environment and community: Whatever the human enterprise, activities are connected to the land and have to do with individuals, their environment and community. Human interactions and issues of social justice and rights are part of the whole ecosystem and therefore are essential ingredients to sustainability. Human capital is a key resource for managing sustainable systems. Agora can contribute to human capital by giving students valuable experience in designing and running a food service operation that incorporates the core values of the host institution and demonstrates social, ecological and economic sustainability. **Principle/value #5:** Excellence: All activities of the Faculty aim for excellence. By focusing on food safety, nutrition and sustainability Agora can reflect this drive for excellence and be an example of faculty excellence in action. **Principle/value #6:** Flexibility and responsiveness: Over time the Faculty must be able to move with changing contexts and be flexible and responsive in its evolution. Agora has already demonstrated this flexibility – when food services decided to close Agora due to its lack of profitability it evolved into a student run operation. We are now reassessing Agora again. By regularly assessing the demands of its clientele via customer surveys, and by responding to these demands, it can continue to meet this core value. **Principle/value #7:** Give priority to learning and learners. To develop innovative learning experiences to assist their success in meeting the challenges of the workplace As a student-run operation integrated with FAS, Agora clearly falls under the description of an innovative, practical learning experience for those involved in its operation and management. **Principle/value #8:** Integrate an interdisciplinary world view with a global perspective & intercultural understanding. Encourage interdisciplinary and intercultural systems approaches. Agora can meet this goal by ensuring that the committee expands from an FNH committee to an interdisciplinary committee including students from agroecology, FRE and other departments, and by acting as a clearing house for information and exchange between departments, peer groups and disciplines. **Principle/value #9:** Emphasize problem-solving and opportunity-seeking. Organize our research, learning and administration around interdisciplinary teams as a way to generate and consolidate knowledge required to address land, food and community issues.

	As above. **Principle/value #10:** Create an environment for intellectual debate. Agora can organize the food and agriculture equivalent of “philosophy cafes”, whereby they provide a space for organized weekly/monthly debates on food system issues with coffee, cookies etc, and a moderator, or panel, drawn from or organized by the Agora committee. **Principle/value #11:** Connect students and researchers to workplaces and experiences. Ensure that learning and research is connected to the everyday world as a context for learning and an anchor for sustainability; Provide students with numerous "connecting" strategies in their university experience. As above. **Principle/value #12:** Integrate and collaborate within the university and our own diverse clientele. Again, provide a range of foods, use customer surveys to ensure we are meeting our client’s needs, organize debates, involve all disciplines in the committee etc. (group 7).
Proposed Methods of Integrating Agora into FAS’s Curriculum	Agora can be integrated in the following FAS courses: **AGSC 100** New students can be introduced to the MacMillan building and Agora when they meet AgUS and FNH committee representatives (possibly a field trip?). Agora can be one of the volunteer opportunities for students to complete their mandatory volunteer hours within the faculty. The questionnaire on food system knowledge can be used to assess new students’ awareness of food system issues when they take AGSC 100, for comparison with their knowledge in second, third and fourth year. This will enable the measurement of both Agora and FAS’s success in raising awareness among students of food system issues. **FRE 302: Small Business Management in Agri-Food Industries** Agora can be used as a case study in this course, or as a business model for students to directly apply their knowledge in human resource management, accounting, marketing, etc. Agora can be used as a case study in this course of an alternative business model – one focused on social rather than financial profits, for example, or one that puts sustainability at its core. Students in this course can be tasked with reviewing Agora’s current business model and suggesting changes that improve upon this model without sacrificing Agora’s core values. **FNH 301: Food Analysis** Students can test/analyze the food items produced and sold in Agora to practice their acquired analytical skills. Results from the analysis can be made available to consumers in Agora who wish to know the nutrition information of the food items. Conduct sensory perception experiments and report findings to Agora for feedback about consumer preferences, etc. **FNH 340: Food Theory** Identify appropriate quality standards of the food products and be able to account for the failure to achieve these standards.

	Understand the function/role of food ingredients and their interaction in the preparation of foods. Understand the basic principles and concepts involved in the preparation, processing and storage of food and food products. Instructor can use Agora's food items as an example in discussions regarding quality standards of food products; students can assess the quality of Agora's food items. Knowledge gained from this course can be applied to preparation, handling, and storage of Agora's food items. Students could be given an assignment to prepare a food handling manual for Agora volunteers for example, and/or run training courses on the subject for these volunteers and other interested students. Working with FAS to gain accreditation by provincial food-safe officials for this manual/course would serve to increase both social sustainability (via human resource development and increased awareness) and human health and so food security. **FNH 341: Food Theory Applications.** This laboratory course involves the preparation of large quantities of food items, can be adapted so that excess food items made by students can be sold in Agora or designed specifically for Agora. OR students can voluntarily make more batches of food that can be sold at Agora in lieu of paying the Lab fee (i.e. Agora can reimburse the Lab for the cost of ingredients and in return the students will volunteer their services) **FNH 342: Consumer Aspects of Food** Agora can be a case study for learning about consumer trends, preferences, etc. Students can apply their knowledge about merchandising techniques and consumer psychology to promote Agora as a food outlet Use this class to review, improve and monitor questionnaires on food demand and food system issue awareness. Also on how respondent's socio-economic and cultural backgrounds influence their food demands and awareness. **FNH 440: Food Service System Management** Students can develop a menu plan, recipe costing & specifications, marketing plan, production schedule, and HACCP Food Safety plans for Agora as an assignment (these tasks are already part of the course assignments) Students can analyze Agora in a discussion about the human resource management. **GRS 290/390** This is a one credit "forum" course where GRS students meet every other Wednesday evening for presentations on food system issues, exchanges abroad and other topics of shared interest. Use Agora for information displays and presentations. Set up an events committee of GRS students, under the Agora Committee to liaise with other FAS departments and students and to facilitate a "Monday Night Forum" whereby students get together over coffee and cookies to exchange information and viewpoints and for presentations on food-system issues from an interdisciplinary perspective. (group 7)

Proposed Forms of Collaboration between Agora and Local Producers

UBC Farm	• **<u>Agora should make contractual agreements with UBC Farm</u>**: o The UBC farm would supply Agora with a weekly box of assorted

	produce and herbs (group 15). o Agora would adopt their menu to any seasonal fluctuations in produce and herb availability (group 15). o See **Appendix E** for group 15's proposed UBC Farm food supply contract.
Other Local Producers/Distributors	• **<u>Agora should make contractual agreements with Squeez, a fresh organic food delivery service:</u>** o Squeez would supply Agora with a weekly produce box of assorted organic produce, "which would allow Agora to sell fresh organic fruits and vegetables year round" (group 15). o Squeez is chosen as the most suitable off-campus food distributor because "it is convenient (offers day and evening delivery), affordable (only a minimum of $27 order), and can customize a bin to our requirements/requests at any time" (group 15). o See **Appendix E** for group 15's proposed Squeez food supply contract.

Feasibility and Desirability Assessment of a Business/Mentor Relationship between UBC Food Services and the New Agora

Proposed Business/Mentor Relationship
• A business/mentor relationship with UBC Food Services be established because it would be highly beneficial to Agora (group 15). • UBC Food Services could offer Agora "experienced advice and prevent Agora from making the same mistakes that they themselves may have made in the past" (group 15). • Since UBC Food Services has been "in business for many years, they could offer invaluable knowledge to Agora on running a successful business" (group 15). • Agora could benefit UBC Food Services by "serving as a case study for a volunteer operation and may provide them with ideas with how to improve the sustainability within their existing operations" (group 15).

Lessons and Principles from Other University/College Student-Run Food Operations

University or College and Name of Operations	**Successful Experiences**
University of Massachusetts (UM)	• UM has numerous student-run food operations that offer a diversity of food at decentralized locations including: "Earthfoods Café, and ovo-lacto vegetarian co-op, Sweets N' More for baked items and snacks in residence, Sylvan Snack Bar, a residential snack bar open late, and Greenough Sub, another residential snack bar" (group 7).
University of Toronto (UT)	• UT has a "student-run Vegetarium Café, which is praised for meeting the needs of vegetarian students on campus that are not met elsewhere". However, the Café has limited hours of operation, and there prices are not as affordable as other food providers on off-campus (group 7).
McGill University	• McGill had 20 student-run food operations until they became privatized through re-negotiation with the University. As a result, major budget reductions occurred for many student societies, serving as an example of how "a successful student-run business is not necessarily secure as financial conditions and leases are largely manipulated by the University" (McGill Tribune, 2003 in group 7).
Vancouver Community College	• Uses student-run restaurants to "provide students with the opportunity to learn cooking, serving, and managerial skills within foodservice establishments" (group 7).
Hendrix College	• Students "successfully increased in-county purchases from 1% to 15% and in-state purchases from 6% to 30%" which greatly benefited the local economy (Feenstra, 1997 in group 7).

Summary of Recommendations

Agora Staff and/or Volunteers:

- Agora "provide a facility for the display and interdisciplinary exchange of information on food system awareness... [and] investigate the possibility of hosting weekly/biweekly interdisciplinary discussion forums and/or presentations on food system issues" (group 7).
- Agora attempt to secure long-term funding from the Faculty of Agricultural Sciences, UBC Food Services and/or the Agricultural Undergraduate Society (group 7).
- Agora explore ways to further integrate itself with the Faculty of Agricultural Science's core curriculum (group 7, 15). An incentive for students to get involved with Agora could include the allocation of bonus marks for students based on the number of hours they volunteer at Agora (group 15).
- Agora should introduce and promote the use of recycling and composting bins for the collection of post-consumer food waste in close proximity to Agora (group 7, 15).
- Agora should distribute questionnaires (provided by group 7 in Appendix F) to its customers, to assess its impact on customer food system awareness, as well as to determine its customers' food needs and wants (group 7).
- Agora should design its menus in accordance to Canada's Food Guide to Healthy Eating (group 15).
- Agora should aim to expand its hours of operation to Monday to Friday from 9am to 4pm (group 15).
- Agora should purchase unprocessed food items from local producers (group 15)
- Agora should serve non-disposable cutlery, promote the use of reusable food and beverage containers (group 15).
- Agora should ensure that its profits supports the Faculty of Agricultural Sciences, that its prices are fair and competitive with AMS Food and Beverage Services and UBC Food Services outlets, by conducting a quarterly price comparison with these providers.

AGSC 450 Class:

- Students should get involved in Agora in order to maintain its services (group 15).
- Students should create and organize "a yearly-elected committee dedicated to the maintenance of Agora" (group 15).

Overview of 2004 Spring Scenario #2: Costs of Locally Produced Food - Best Practices for Sustainable Food Procurement

Scenario 2a) True Costs of Food

Summary of Specific Problem Definition

The price consumers pay for food often do not reflect the "real costs" of the food item itself. Many costs are hidden from the actual tagged value on the product, such as ecological, social and economic costs that occur during the production, processing, distribution, packaging and disposal practices that are associated with the product. One way of identifying these real or hidden costs is by conducting a commodity chain analysis (CCA) which serves as a tool to track down the physical journey the food product underwent from the point of production to distribution or consumption.

General Research Question:

To assess the true costs (both indirect and direct costs) of food served at UBC.

Summary of Scenario Specific Sustainability Indicators & Guiding Principles and Proposed Methods of Data Collection

Ecological Indicators (I) and Guiding Principles (GP):

- Ecological footprint of food service providers (GP) (group 8)
- "Distance that food travels from where it is cultivated to where it is consumed" (I) (group 8, 10)
- "Water quality within the regions where UBC's food is produced" (GP) (group 10)

Proposed method of data collection:

- A questionnaire should be distributed to UBC food providers that they can give to both their current and prospective suppliers, to assess suppliers' awareness of their food product origins and rationale for purchasing non-local items (group 8). See **Appendix F** for group 8's questionnaire).
- UBC food outlets should be surveyed to aid in determining the "source of various food items, and then calculating how far in kilometers that source is from UBC" (group 10). Determining food mileage of specific items will aid in highlighting specific areas for improvement, and aid UBC Food Services, AMS Food and Beverage Services, and UBC Village in assessing the importance of purchasing local foods. Each food item assessed can be given a specific value from 1 to 5 to highlight the distance each food item traveled (group 10). See **Appendix E** (table 1.2) for group 10's proposed food mileage values.
- Water quality can be assessed by measuring levels of agricultural runoff (manure, fertilizer, agrochemicals, etc.) in UBC food producers' surrounding waterways. The water quality assessment should be conducted by determining origins of food consumed at UBC, and by obtaining information and/or conducting research regarding the regional water quality. Final water quality reports will aid in determining the hidden ecological costs of food consumed at UBC (group 10).See **Appendix E** (Table 1.1) for group 10's proposed water quality values.

Economic Indicators (I) and Guiding Principles (GP):

- "Food affordability" (GP) (group 8)
- Profitability of UBC Food Services and AMS Food and Beverage Services operations (GP) (group 10)
- "Amount of local economic cycling" (GP) (group 10)

Proposed method of data collection:

- A questionnaire should be distributed to UBC population to determine their willingness to pay for the *full* costs of food (both indirect and direct costs) (group 8).
- Profitability of UBC food providers can be determined by conducting both a short and long-term analysis of their annual fiscal revenues. Annual fiscal revenues of food providers will aid in recognizing minimal levels of profits required to incorporate externalities of food items in food prices (group 10). See **Appendix E** (Table 1.3) for group 10's proposed profitability values.
- The degree of local economic cycling should be determined by examining the commodity chain of food items purchased at UBC with the amount of support from local (BC) businesses in food production, processing and distribution (group 10). See **Appendix E** (Table 1.4) for group 10's proposed local economic cycling values.

Social Indicators (I) and Guiding Principles (GP):

- "Food availability/Food Security" (GP) (group 8)
- "Awareness and knowledge of external costs" of food (GP) (group 10)
- "Social equity of profits made within the food system" (GP) (group 10)

Proposed method of data collection:

- A questionnaire should be distributed to UBC population to assess perceptions of food affordability and safety, and cultural and nutritional appropriateness (group 8).
- A survey should be distributed the UBC population (students, faculty, staff, and food providers) assessing knowledge and awareness of external costs of food purchased and consumed at UBC (group 10). See **Appendix E** (Table 1.5) for group 10's proposed knowledge of external costs of food values.
- Assessing the social equity of profits in UBC's food system should be conducted by analyzing the "differences in profits received by the farmers (producers) of goods compared to the distributors in the UBC food system". Determining the social equity of profits will aid in determining the "portion of profit returning to the farmer so that he or she can maintain the farm environment, pay sufficient wages to any hired help, and contribute to the rural community (group 10). See **Appendix E** (Table 1.6) for group 10's proposed social equity of profits values.

Summary of Findings

True Costs of Food: Differences Between Direct Costs Paid at the Cash Register and Indirect Costs

Environmental Costs	• Transportation required to support prevailing dominant food choices is releasing carbon emissions into the atmosphere, contributing to ozone depletion, climate change, global warming, depletion of wildlife habit, loss of genetic diversity, and soil, air and groundwater pollution (group 8, 10) • The global food system is characterized by industrialized, highly mechanized, and monoculture farming practices, where pesticide and herbicide use prevails, contributing to soil erosion, agricultural run-off, destruction of habit and wildlife diversity (group 8, 10) • The increasing concentration and centralization of farm production is pressuring small farmers to intensify production in order to remain competitive in the global market, resulting in corresponding pressures being placed on the earth's natural limits and regenerative capacities (group 10)
Social Costs	• The concentration of food production is contributing to the de-skilling of rural communities (group 8) • Small scale farmers are losing control over their food system due to the concentration of production into a few multi-national corporations (group 10) • The global food system generally promotes the distancing of producers from consumers, which contributes to many consumers lack of awareness and knowledge of their food system. As a result, consumers may unwillingly purchase a product that supports poor environmental regulations and unethical labor practices (group 8). • Consumers reliance on imported foods is contributing "little to food security and social connections to the local community" (group 10)
Economic Costs	• Farmers are increasingly receiving a small percentage of return for the actual consumer dollar spent on their food products (group 10) • Concentrated and industrialized farming practices that are highly mechanized employ few people and contribute little to local economic cycling at the community level (group 10). Specifically, "marketing and input supply firms, which are not attached to any given community, control food system assets [and]…their profits are invested in institutions that are controlled by distant anonymous stockholders" (Lyson & Green, 1999 in Group 10) • Current "external costs of agriculture in the US are estimated at 34.7 billion dollars each yet" (Pretty et al., 1999 in group 10) • Climate change associated with the global food system has contributed to immense

	economic spending on natural disaster recovery (group 8) • Health costs associated with increasingly poor eating lifestyles (particularly highly processed foods), and costs associated with food-borne illnesses are proving to be an increasingly problematic economic burden on health care systems (group 8, 10)

How Commodity Chain Analysis (CCA) can be Used to Assess the True Costs of Food

• CCA is an interdisciplinary approach that can be used to track each stage that product endures form stages of production to consumption (group 8, 10). See Appendix E for group 8's list of specific steps suggested to conduct a CSA
• By exposing the length and type of commodity chain, CCA can aid in revealing hidden environmental and social costs associated with processes in the food system (group 8, 10)
• CCA aids in revealing how the global food system is linked to local food consumption; how "food choices in one place can affect the natural resource use and social conditions in another" (group 8)
• CCA is a useful comparative approach to reveal "differences and similarities in cost between various production to consumption pathways" (group 8)

Other Methods that can be Used to Assess the True Costs of Food for AMS Food and Beverage Services & UBC Food Services

Conduct a food miles commodity assessment	1. Identify food items main ingredients, "ones that make up at least 80% or more of the item, so as not to have to struggle with assessing flavorings and spices" 2. Identify place of origin at least 80% of item content 3. Assign the food item a corresponding value from 0-8 (0 reflecting sources nearest to consumption and 8 reflecting sources farthest from point of consumption). See **Appendix E** for group 8's point based-assessment model 4. Finally, reduce the overall value by 1 point if the food item endured final processing and/or assembling on the UBC campus (group 8)

Commodity Chain Analysis for a Meal Offered at Student Residence Dining Facilities

- Conducted a CCA of a breakfast offered at Totem Park Residence
    - Breakfast included: 2 slices of bacon, 2 eggs, and 4oz of hash browns, toast with butter or margarine, 250ml of milk, and 1 banana (group 8).
    - See **Appendix E** for group 8's complete CCA analysis for each breakfast component.

- Environmental costs noted to be associated with breakfast components:
    - **Bacon**: Pig manure is produced through pig production which contains high levels of phosphorous and nitrogen, which can cause groundwater contamination, "degradation of aquatic ecosystems, air pollution from odors and ammonia emissions, diminished soil quality and biodiversity" (group 8).
    - **Eggs**: Hen manure is produced through egg and poultry production which contains high levels of phosphorous if the hens are not given an enzyme to allow it to be absorbed in their diets. High levels of phosphorous are "dangerous to the environment as P can leach into ponds or streams and cause eutrophication" (group 8).
    - **Milk**: Cow manure is produced through dairy production, which can cause "groundwater contamination, degradation of aquatic ecosystems, diminished soil quality and ammonia emissions" (group 8).
    - **Potatoes and Bananas**: Ecological impacts of grain, legume and fruit production vary depending upon the types and amount of inputs used. Certain fertilizers containing "nitrogen, phosphorous and potassium can lead to leaching into groundwater, ponds, and rivers". Different types of tilling practices can also cause varying levels of soil erosion. If monocultures are used, biodiversity is reduced. Pesticide, herbicide and fungicide use can cause water and soil pollution, as well as reduce biological diversity (group 8).

Educational Piece Describing the True Costs of food

- Created a monthly information board to be displayed at UBC food service provider outlets. The monthly information board should contain:
    - At least one food item listing the "typical commodity chain for the highlighted item, including production techniques form cultivation to distribution, as well as approximate food miles count"
    - Food items on the board should consist of a conventionally produced and sustainably produced item with corresponding information highlighting food costs associated with each (i.e. free range versus conventional eggs, organic versus non-organic bananas).
    - Information should also be posted on the board regarding where the alternative more sustainable food item can be purchased (group 8)

Food Labeling System that can be used by UBC Campus Food Providers to Indicate the True Costs of Food

- Developed a label to be placed on all food products sold by UBC food providers. The label will:
    - Describe externalities associated with each food product
    - Only 4 of the most significant and measurable externalities should be placed on the product to ease feasibility of the task and facilitate simplicity of interpretation for consumers.
    - Externalities placed on the label should include ecological (food mileage and production practices), economic (local economic cycling "as the percentage of a food product that has been produced locally") and social criteria ("percentage of sale price returned to the farmer").
    - Each of the above externalities can be assigned an overall value of 1-5 as indicated in **Appendix E** (Group 10's Table 1.1.-1.6).
    - Once values for each of the specific externalities are determined, an checkmark can be placed on the food label only if the food product scored a value of 4 or higher in each of the externalities. (group 10)

Summary of Recommendations

AGSC 450 Class:

- Students should conduct a Commodity Chain Analysis (CCA) for an entire day's menu at Totem Residence. (group 8)

- Results of the CCA should be shared with food service providers. Based upon results of the CCA, students should investigate with food providers' ways on how they can go about reducing the indirect costs associated with the food that they provide. Specifically, students could investigate with food providers finding possible alternative products with less indirect costs and food distributors who carry more local products. Also, students can work with food providers on "ways to introduce healthier food preparation practices including those that monitor food safety" (group 8).

- Students continue to refine group 10's food label design and propose a method of implementation (group 10).

Food Providers:

- UBC food providers could implement a "monthly feature commodity, as a method to educate and raise awareness in consumers and producers" (group 8).
- UBC Food Services and AMS Food and Beverage Services place labels on their food products indicating the true costs of their food items, along with an educational campaign to inform the UBC consumers of the significance and meaning of the food labels (group 10).

SCENARIO 2B) FEASABILITY OF RE-LOCALIZATION RESPONSE

Summary of Specific Problem Definition

In order for UBC food providers to shift their food procurement practices to more local purchasing, they need to know whether local food distributors can meet their current procurement requirements such as quantity, quality, cost, and seasonality. Also, food providers need to know what kind of benefits and drawbacks will occur if they decided to make this shift.

General Research Question:

Analyze current food procurement practices of UBC food providers, to determine whether or not a shift towards more local food procurement practices is feasible.

Summary of Scenario Specific Sustainability Indicators and Summary of Proposed Methods of Data Collection

Ecological Indicators (I) and Guiding Principles (GP):

- "Proportion of fresh produce used at UBC that can be obtained from BC sources" (I) (group 17)

Proposed method of data collection:

- **Conduct a feasibility analysis**

  Ecological indicator can be measured by examining BC Agricultural Commodity List to determine availability of products grown/raised in BC. Next seasonal availability of products are entered into the analysis. After volume requirements are determined for UBC food providers, actual product quantities that are available for purchase locally are entered into the analysis. Values are assigned to indicate the volume and seasonal availability of that product for each month. A "sufficiency index" is used to summarize monthly values. The numbers generated from the sufficiency index is then compared to a "feasibility scale" to determine whether re-localization is feasible for products. See **Appendix E** for Tables, Sufficiency Index and feasibility scales (group 17).

Economic Indicators (I) and Guiding Principles (GP):

- Prices that UBC food providers pay for locally produced food compared to non-locally produced foods (I) (group 17).

Proposed method of data collection:

- Students research "current prices at which UBC Food Services buys various non-locally produced foods, and then search for alternative retailers of these foods here in the Lower Mainland" (group 17). If the costs of locally produced goods are the same or at lower prices than current purchased non-local foods, then re-localization of these products is economically feasible (group 17).

Social Indicators and Guiding Principles (GP):

- Percent of UBC community members willing to eat local and seasonal foods at UBC food provider outlets (I) (group 17).
- Percent of UBC community members willing to pay more for local food products (I) (group 13)
- Percent of UBC community members willing to support seasonal menu plans (I) (group 13)
- Level of knowledge among UBC communities regarding the benefits and drawbacks of local food (GP) (group 13).

Proposed method of data collection:

- To distribute a questionnaire that would assess the awareness and willingness among the UBC community to support more local and seasonal food on campus (See **Appendix F** for group 17's questionnaire).
- To distribute a questionnaire that would assess the level of knowledge of benefits and drawbacks of local food, and willingness to support seasonal menu plans and potential higher prices for local food products (See **Appendix F** for group 13's questionnaire).

Summary of Findings

Benefits and Drawbacks of a Re-localized UBC Food System*

Benefits	Drawbacks
• Reduction in transportation costs: dependence on fossil fuels, production of greenhouse gases which contribute to climate change (group 13, 17)	• Can limit degree of choice in variety of foods since availability depends on seasonality (group 13, 17)
• Reduction in packaging and processing costs: reduction in energy and materials (group 13).	• Local foods are often associated with higher prices, because of farmers higher transaction costs, lower economies of scale, etc. (group 17)
• Aid in preserving agricultural land which can help maintain biodiversity and preserve green space (Group 13)	• Likely decrease in employment associated with transportation, packaging, advertising, and processing (group 13)
• Increase economic returns for the farmer, due to a reduction in middlemen (transportation, packaging, processing, etc) (group 13, 17)	
• Boost the local economy, because increased need to hire local help to supply inputs (machinery, labor, fertilizers, etc,),and general re-investment of profits back into the community (group 13, 17)	
• Increased social connections between farmers and consumers, consumers and food (group 13, 17).	
• Increase availability of fresh, tasty higher quality food of reduced time that food spends on the road and in storage between production and consumption (group 13)	

* Benefits and drawbacks are based upon a group's literature review

No written standards exist either in UBC Food Services and AMS Food and Beverage Services "Request For bid" forms, purchasing codes and/or policies, regarding locally grown food (group 13).

Summary of Recommendations

AGSC 450 Class:

- A poster depicting the benefits of local food and the importance of re-localization be posted around campus to serve as an educational piece to increase awareness of local foods and ideally encourage purchasing of local food products. See **Appendix G** for group 17's poster. Depicted on the poster is "a possible slogan to attract people's attention could be: "Eat thoughtfully, Buy locally"", an explanation of what a local food system constitutes, differences between local and non-local foods, and a few key actions that consumers could take to support local foods. Before

the final poster is developed, students should distribute the awareness questionnaire first to gauge information needs and actual general level of awareness among community (group 17).
- Students should conduct "further research on the ecological footprint of local versus global food products" (group 17).
- Distribution of a survey to measure the awareness among UBC community regarding the benefits and drawbacks of local foods, willingness to pay more for local foods and level of support for more seasonal menu plans (group 13).
- Students should focus "research on determining raw food items to refine food origin analysis methods, which then can be applied to more complex scenarios such as processed food products" (group 13).

Food Service Providers:

- A commitment to purchase at least 10% of food locally (group 17).
- The "development of food procurement guidelines that include an outline for ethical decision making towards sustainability" (group 17).
- To increase "awareness on campus through the use of educational posters and offering more locally produced food" (group 17).
- "UBC's two major food providers (UBCFS and AMSFB) modify their food procurement standards, to include a clause which requires them to purchase a certain percentage of local food" (group 13). A "local buying policy [could be] written into the UBCFS and AMSFB procurement practices" (group 13).
- Food providers could try altering their menus to contain more seasonal choices (group 13).

UBC Farm:

- "The UBC Farm could also take a greater part in the UBC food system by selling more of its produce through AMSFB and UBCFS "(group 13).

Overview of 2004 Spring Scenario #3: Food Mileage

Summary of Specific Problem Definition

High food mileage has been argued to be associated with many negative social, economic and environmental issues. Ecological effects associated with high food mileage include excessive fossil fuel emissions, soil erosion, loss of biological diversity, and pollution of groundwater caused by transportation and infrastructure required to support method of transport. Social effects can include decreased knowledge that consumers have of their food system and distancing of relationships with producers. Economic effects can include decreased support for local food economies and economic returns local producers receive for their goods. Yet the majority of food we consume comes form a global everywhere, yet nowhere in particular.

General Research Question:

To assess the impacts of increased food miles within the food system. To determine a method to calculate the food miles of food items served at UBC, and options to potentially reduce food miles if deemed desirable.

Summary of Scenario Specific Sustainability Indicators, Guiding Principles and Summary of Proposed Methods of Data Collection

Ecological Indicators (I) and Guiding Principles (GP):

- "Distance that food travels in kilometers from the place of production to the place of consumption" (I) (group 6, 19)

Proposed method of data collection:

- Use Weighted Average Source Distance (WASD) equation to measure the distance food travels from its point of origin to its point of consumption and the total amounts of food products transported (group 6). See **Appendix E** for the WASD equation.
- Use a "food mileage check sheet that can be used to calculate the "food mileage value" (FMV) of several commonly consumed menu items served at UBC food outlets". Data required for the sheet are ingredients of food items, geographical origin of items, and the mode of transport used. Mode of transport used for the ingredient or product can be assigned a factor between 1 - 4 which should correspond with the degree of energy the item uses (i.e. a truck (factor 1) uses more ¾'s more energy than a train (factor 4) (group 19). See **Appendix E** for group 19's food mileage check sheet.

Economic Indicators (I) and Guiding Principles (GP):

- "Affordability of nutritious foods" (GP) (group 6)
- Percentage of "money saved from compost materials diverted from a landfill" (I) (group 6)

Proposed method of data collection:

- Based on secondary sources compare the costs of similar foods across campus with costs of similar establishments outside of campus (group 6).
- Money saved from diverting materials from the landfill could be measured by "weighing the truck loads of compost materials brought to UBC's designated site, and then determining the amount of money it would have taken to transport the materials to the dump" (group 6).

Social Indicators (I) and Guiding Principles (GP):

- "Accessibility to a wide variety of culturally appropriate diverse meals" (GP) (group 6)
- Level of knowledge the UBC community has about concept of food security (GP) (group 6)
- "Awareness of the concept of food mileage and its implications for sustainability" (GP) (group 19).

Proposed method of data collection:

- A qualitative survey "to assess what ethnic foods are available on campus and the level of satisfaction felt by customers", as well as consumers "willingness to support businesses that have made efforts towards a sustainable UBC" (group 6). See **Appendix F** for group 6's surveys.
- A qualitative survey for UBC food providers to "assess the willingness to support businesses that have made efforts towards a more sustainable UBC" (group 6). See **Appendix F** for group 6's survey.
- A set of surveys to be distributed to UBC consumers, suppliers and retailers to "assess their level of awareness with regards to the concept of food mileage and its implications with respect to sustainability". Upon completion of the surveys the data(1) "would allow us to assess the sustainability of the UBC food system", (2) "provide an indication of the factors that affect the purchasing decisions of consumers and retailers", (3) aid in determining "which approaches we could take to reduce the food mileage of the UBC food system", and (4) "act as an educational tool, making individuals aware as they complete the survey that the distance their food travels to reach them carries with it environmental, economic and social implications" (group 19).

Summary of Findings

Impacts of the Distancing of Consumers from Food Sources*

• Consumers have decreased knowledge about our food system, especially concerning the origin of food consumed, and how it is produced (group 6, 19)
• Many consumers are prone to make uniformed food choices due to their lack of awareness of the food system (group 6, 19)
• Relationships between farmers and consumers are weak or non-existent (group 19)
• Foods with high food miles are associated with reduced nutritional quality, palatability and overall freshness (group 6, 19)
• Farmers receive a very small profit return for their product due to cost associated with middlemen and as a result their local economies can suffer (group 6, 19)
• High food miles are associated with increases in transport vehicles on the road and supporting infrastructure. Negative ecological consequences that can occur are: harmful carbon emissions, increased emission of greenhouse gases, low nutrient and energy recycling, groundwater contamination, loss of biodiversity and habit (group 6, 19)

* Based upon groups literature review

Labeling of Food Miles for Food Service Menus

• "Eco-labels" could be placed on food products served on campus, which would show the distance a food item has traveled from its point of origin to place of consumption (group 6). See **Appendix G** for group 6's suggested eco-labels.
• The label should be easy to understand, and should "include a mileage meter that estimates the environmental impact of its transportation" (group 6).

Alternative Food Purchasing Options Assessment for UBC Food Providers

• If UBC Food providers decide to purchase more local foods, they may experience a decreased in food variety options (i.e. because of seasonality of local foods), higher prices for food items (local farmers often have higher labor costs, and higher equipment costs if they have a diversified crops) (group 6).
• Although locally produced foods are associated with reduced negative environmental impact from decreased food miles, this does not necessarily mean they were produced in an ecologically friendly manner (group 6).

Summary of Recommendations

<u>UBC Food Providers</u>:

- "UBC food services should purchase locally grown foods when given the opportunity and preference should be given to foods produced in an ecologically sustainable manner" (group 6).
- UBC Food Services implement a campus wide campaign to increase the awareness of UBC consumers regarding the implications of consuming foods with high food miles (group 6).
- Posters should be developed that "highlight the major environmental and economical issues surrounding foods with high food mileage" and pamphlets that provide further detailed information regarding implications of food miles and explain the designation of foods offered on campus that have low food miles with a "low-food-miles" sticker (group 6).
- That food service providers should implement "a food mileage labeling system to help raise awareness to the members of the community, and help to justify the true cost of foods" (group 6).
- UBC food providers should implement some of the following strategies listed below, designed to increase demand and awareness among UBC community for low-mileage foods:
    - Introduce a labeling system as part of food packaging that will identify approximately how far a particular item has traveled to reach the consumer
    - Offer a discount (e.g. $0.10 off) on local food items
    - Have aisles or sections of the restaurant/cafeteria devoted completely to locally sourced foods accompanied by a clear, identifying sign that discusses the significance of a local food system

- Distribute pamphlets and handouts discussing food mileage at the point of purchase (POP) area for easy access
- Have sales clerks wear shirts or pins that read, "How far did your meal travel today?"
- Hold regular seminars and workshops about what food mileage is and how to reduce it
- Offer Food Miles® reward cards ("Buy 9 and receive the 10th free") for low-mileage foods
- Have sales clerks place stickers on low-mileage items at the POP that read, "Good choice!" or "Thanks for buying local today!"
- Promote a Food Miles Goal Week – set a feasible goal (e.g. less than 1300 miles) for the average item purchased in that week and continuously work to beat that goal in the next Goal Week.
- Feature seasonal items that promote the consumption of locally produced foods (e.g. feature locally grown potatoes in the winter with specials on Shepherd's pie, mashed potatoes, potato and leek soup, etc.) (group 19).

- UBC food providers "should conduct business with "food mileage friendly" suppliers", by making "it a requirement for these suppliers to provide a minimum proportion of the food they supply as originating for local sources". Food providers should use a criterion checklist before awarding contracts to suppliers (group 19). See **Appendix E** for group 19's criterion checklist.
- UBC food providers "implement a "true-cost" pricing system…that reflects environmental costs associated with foods that travel long distances" (group 19).

Overview of 2004 Spring Scenario #4: UBC Farm: Assessing the Potential of Forming Market Relationships with Campus Food Providers

Summary of Specific Problem Definition

The UBC Farm is not financially viable; it is characterized by operating costs that exceed its actual revenue. The Farm could increase its revenue if it establishes stronger market relationships with UBC food providers, but numerous barriers currently exist that prevent the formation of these relationships.

General Research Question:

To assess the current state of UBC Farm, and explore how it can become a financially viable operation, better integrated into the campus food system, and at the same time be a place for learning, action and a site of sustainable agriculture.

Summary of Scenario Specific Sustainability Indicators & General Principles

Social Indicators (I) and Guiding Principles (GP):

- "Availability and acceptability of UBC Farm foods" (GP) (group 14)

Economic Indicators (I) and Guiding Principles (GP):

- " Profitability of the UBC Farm" (GP) (group 14)

Ecological Indicators (I) and Guiding Principles (GP):

- "Proportion of environmentally-friendly farming practices" (GP) (group 14)

Social-economic Indicators (I) and Guiding Principle (GP):

- "Affordability of UBC Farm foods" (GP) (group 14)

Social-ecological Indicators (I) and Guiding Principles (GP):

- "Awareness and knowledge of the UBC Farm and its role in contributing to the overall sustainability of the UBCFS" (GP) (group 14)

Economic-ecological Indicators (I) and Guiding Principles (GP):

- "Proportion of UBC Farm foods that are sold to UBC and AMS Food Services as ingredients or to be served to customers directly" (GP) (group 14)

Summary of Proposed Methods of Data Collection

- See **Appendix F** for group 14's proposed methods of data collection for each general principles stated above.

Summary of Findings

Review of Other University Farms

Beech Hill Farm, Maine	• Holds an agreement with a main restaurant on campus, who agrees to purchase as much of the farm's produce as possible • Holds a bi-weekly public farm market that sells produce, honey, jams and jellies • Sells wholesale goods to local restaurants • Has community gardens open to campus community and members
UC Davis, California	• CSA Program where community members pay a set amount of money to receive a produce box • Provide educational opportunities (student employment, internships, and general public courses
UC Santa Cruz, California	• Sponsors educational events • Provides research opportunities, teaching and training facilities for campus community • Sells produce on a market cart on campus • Sell shares through a CSA program
Evergreen State College, Olympia, Washington	• Sells produce to campus restaurant, on a farm stand on the farm and on campus • Donates excesses to charities
Applications to UBC Farm	• Could begin a CSA Program with students, general community and UBC food providers • Expand market by opening outlets on campus (Village, SUB) • Increase scope of educational opportunities • Offer course to general public about farming for a fee

(group 9)

Assessment of UBC Farm's Business Model

Farm structure & Governance	• The Farm has suffered from a "lack of committed leadership beyond the Faculty of Agricultural sciences", uncoordinated management and neglect" (group 9)
Marketing & Sales	• The majority of sales are derived from Saturday morning public markets (57%), another 8% from on campus food providers (Sage Bistro, St. John's College

	AMSFBS, Green College), and the rest from pumpkin sales, West Coast Seeds, Farm Gate, AGUS, apple fest, Good Food Box, and St. Andrew's (Group 14) • The Farm also provides "education, research, and social services" to both the UBC community and broader community (group 9) • "Many opportunities for market expansion, including the expressed interest of both AMS and UBC Food Services, and the untapped demand of the quickly expanding University Town" (group 9) • Majority of Farm sales occur between June-October (group 14)
Production	• 40 types of vegetables, herbs and flowers are produced in the Market Garden (group 9), and vegetables make up the majority of generated revenues (53%)
Human Resources	• Heavily reliant on volunteers (approx. 70) (group 9, 14) • Operates with 4 seasonal staff for marketing, market garden & laborers (group 9, 14) • Lacked a full time program coordinator between 2003-Spring 2004 (group 9)
Finances	• Receives income Faculty of Agricultural Sciences, both individual and business donations, fees for educational services (i.e. workshops) provided at the farm (group 9) • Farm's costs greatly exceed its revenue

Summary of Recommendations

AGSC 450 Class:

- Students should conduct market research with UBC food providers to identify plans on "how the farm could become more integrated into the UBC food system". Students should set up consultations with campus food providers to address potential levels of collaboration that could be established between the UBC Farm and providers (group 9). See **Appendix F** for a list of group 9's sample questions for this consultation.
- Students should distribute a survey to assess the level of awareness, interest and demand for the farm and farm products (group 9). See **Appendix F** for group 9's proposed survey.
- Students should gather data on financial management practices on other student farms (group 9). See **Appendix F** for a list of group 9's recommended guiding questions.
- Students should conduct a comprehensive production analysis of the UBC Farm's Market Garden, because this would "aid the UBC Farm staff in determining which crops were the most profitable or efficient". Students should conduct this analysis using a set of indicators, benchmarks and farm data (group 9). See **Appendix E** for group 9's suggested production analysis framework.

UBC Farm Team:

- Because few outlets exist on campus to purchase unprocessed food items, the UBC Farm should directly market its products on campus to students by cart or by a temporary stand, especially catering to students in Fairview and Acadia residences (group 14).
- The UBC Farm should expand its operations to include Winter production (group 14).
- The UBC Farm should isolate a "small plot of land on the Farm for major revenue generating crops, in order to ensure the economic viability of its operations" (group 14).
- The UBC Farm should assess the possibility of obtaining new farm equipment by creating relationships with other Agricultural businesses in the community who may wish to enhance their image, or possibly obtain a tax write off by making an equipment donation (group 14).
- The UBC Farm should secure contracts with UBC food providers (group 14).

Campus Sustainability Office:

- The purpose of the UBC Farm is not only to produce food, but rather all stakeholders need to "recognize and support the valuable education, research and social services that are provided by the Market Garden" (group 14).

Overview of 2004 Spring Scenario #5: Assessing the Potential for a Student-run Cooperative Organic Grocery Outlet in UBC's Student Union Building

Summary of Specific Problem Definition

The UBC Campus is characterized by low accessibility to unprocessed foods. Not only is it difficult to buy a variety of grocery items on campus, but it is difficult to find unprepared food items at a central location on campus with accessible hours of operations.

General Research Question:

To assess the constraints and opportunities in operating a student-run cooperative organic grocery outlet in UBC's Student Union Building (SUB). To explore to what degree a co-op can contribute to the overall sustainability of UBC's food system.

Summary of Scenario Specific Sustainability Indicators, Guiding Principles and Proposed Methods of Data Collection

Social Indicators (I) and Guiding Principles (GP):

- Level of staff and volunteer turnover and workload (GP) (group 1)
- Level of UBC consumer awareness of UBC Food Co-op (GP) (group 1)
- Level of accessibility of the Co-op, its products and services (GP) (group 11)
- Level of "accessibility and availability of both prepared and unprepared food on UBC campus" (GP) (group 5).

Proposed method of data collection:

- Total number of volunteers and hours that each Co-op volunteer works each week should be recorded using a timesheet (group 1). See **Appendix E** for group 1's timesheet.
- A survey should be distributed to UBC consumers to assess their awareness of the existence of the UBC Food Co-op, their awareness of their products, purchasing patterns, and knowledge of concepts of fair trade and organic goods (group 1). See **Appendix F** for group 1's proposed survey.
- A survey should be distributed to UBC consumers to assess the level of accessibility of UBC consumers to the Co-op and its services. The survey should assess the accessibility of the Co-op in terms of its days and hours of operation (group 11). See **Appendix F** for group 11's proposed survey. Once data has been collected from the surveys, a sustainability percentage can be assigned to represent the Co-op's degree of accessibility. See **Appendix E** for group 11's sustainability percentage chart.
- Two surveys should be distributed to UBC consumers to assess levels of accessibility to prepared and unprepared foods on campus. Two versions of the survey should be distributed, the first to "commuters and multiple occupant residents", and the second to "single occupant and family residents" (group 5). See **Appendix F** for group 5's surveys. For additional action plans, see **Appendix E** for group 5's sustainability criteria and additional corresponding action plans.

Economic Indicators (I) and Guiding Principles (GP):

- Degree of financial self-sufficiency at the UBC Food Co-op (GP) (group 1)
- Price of UBC Food Coop products compared to similar products sold off-campus (I) (group 1)
- Profitability of the Food Co-op (GP) (group 5, 11)

Proposed method of data collection:

- Analyze UBC Food Co-op financial records to determine amount of debts accrued, reliance on subsidies, grants and donations, level of cost recovery, and profits reinvested back into Co-op initiatives (group 1).
- The affordability of foods sold at the Co-op compared to off campus food outlets can be determined by analyzing a sample of items sold at the Co-op with a sample of items sold off campus using a comparison sheet. Specifically, prices should be determined for a sample for 10 items sold at the Co-op compared to the same 10 items sold at a sample of at least 5 off-campus outlets. Prices should then be averaged for all items and compared. (group 1). See **Appendix E** for group 1's comparison sheet.
- The profitability of the Food Co-op can be determined by analyzing the Co-op's financial statements. Once profit margins are determined, a sustainability percentage can be assigned to represent the Co-op's degree of profitability (group 11). See **Appendix E** for group 11's sustainability percentage chart.
- The profitability of the Food Co-op can be determined by analyzing the Co-op's monthly and yearly financial statements, as well as, statements from other similar outlets by a business or finance students. Analyzing financial statements from other outlets would aid in indicating specific areas where the Co-op could improve its profitability (group 5). See **Appendix E** for group 5's sustainability criteria and additional corresponding action plans.

Ecological Indicators (I) and Guiding Principles (GP):

- Percentage of local food products purchased by the UBC Food Co-op (I) (group 1)
- Percentage of goods sold at the UBC Food Co-op with recyclable and/or reusable packaging (I) (group 1)
- Percentage of goods sold at the UBC Food Co-op that are recycled and/or composted (I) (group 1, 11)
- "Quantity of waste that is diverted from landfills as a result of waste reduction practices" (GP) (group 5)

Proposed method of data collection:

- To determine the availability of local foods at the Co-op, the number of items sold at the Co-op that could be purchased locally should be determined and compared to the sources that they actually purchase from (group 1).
- To determine the percentage of goods sold at the Co-op that end up being recycled and/or composted, the number of recyclable or reusable packaging that ends up in UBC waste bins could be counted monthly by a Co-op manager by examining random waste bins (group 1). Conversely, surveys could be distributed to Co-op staff and/or volunteers to assess the amount and types of waste being generated and where it ends up (group 11). See **Appendix F** for group 11's survey. Finally, after the initial collection of data from the surveys, the next generation of AGSC 450 students can identify specific amounts and types of waste and how much is being recycled and composted. Groups can assign a "sustainability percentage" to represent the total amount of material being recycled and/or composted. See **Appendix E** for group 11's sustainability percentage chart.
- To determine levels of waste that are diverted from landfills, an "ecological sustainability checklist" can be used to provide an initial assessment. Specifically, each campus food service facility can be rated using a waste category checklist, whereby the food provider will receive a checkmark or cross if they use a waste category, which will be summed up giving the provider a total assessment number (group 5). See **Appendix E** for group 5's ecological sustainability checklist. See **Appendix E** for group 5's sustainability criteria and additional corresponding action plans.

Social-economic Indicators (I) and Guiding Principles (GP):

- "Affordability of food items at the Co-op" (GP) (group 11)
- "Affordability and acceptability of foods on campus" (GP) (group 5)

Proposed method of data collection:

- To assess the affordability of food sold at the Co-op, a price comparison can be conducted, whereby a selection of various items sold at the Co-op are compared to the same items from other outlets that supply similar specialty foods such as Capers and Choices Market. See **Appendix E** for group 11's comparative price chart. Once prices are determined for items, a sustainability percentage can be assigned to represent the affordability of food sold at the Co-op. See **Appendix E** for group 11's sustainability percentage chart.
- A questionnaire should be distributed to UBC consumers to assess their perceptions regarding the price and acceptability of foods at UBC food outlets (group 5). See **Appendix F** for group 5's food acceptability and affordability questionnaire. See **Appendix E** for group 5's sustainability criteria and additional corresponding action plans.

Social-ecological Indicators (I) and Guiding Principles (GP):

- Level of UBC community "awareness of organic and fair trade food, local production benefits and food systems (GP) (group 11)
- Level of UBC community knowledge regarding the concept of sustainability and level of participation in sustainability practices (GP) (group 5)

Proposed method of data collection:

- A survey should be distributed to the UBC community to assess the general awareness of the campus population has of their food system and organic, local and fair trade foods. See **Appendix F** for group 11's survey. Once data has been collected from the surveys, a sustainability percentage can be assigned to represent UBC community awareness of these issues (group 11). See **Appendix E** for group 11's sustainability percentage chart.
- A questionnaire should be distributed to assess the level of UBC community knowledge regarding the concept of sustainability and level of participation in sustainability practices (group 5).See **Appendix F** for group 5's food sustainability questionnaire. See **Appendix E** for group 5's sustainability criteria and additional corresponding action plans.

Economic-ecological Indicators (I) and Guiding Principles (GP):

- Distance that food sold at the Co-op has traveled from point of production (GP) (group 5, 11)

Proposed method of data collection:

- In order to determine the distance Co-op food products have traveled, sources can be determined for food products by distinguishing them with 1 of 4 geographical areas: the "lower mainland, the interior of the province and Washington, the North American continent and International". See **Appendix E** for group 11's food sourcing chart (group 11). Once origins of food sold at the Co-op has been determined, a sustainability percentage can be assigned to represent the degree of local and imported foods the Co-op sells (group 11). See **Appendix E** for group 11's sustainability percentage chart.
- The food mileage of items sold at the Co-op can be determined by conducting a Weighted Average Source Distance (WASD) analysis of selected food Co-op items (group 5). See **Appendix E** for group 5's "Ecological-Economic Indicator Assessment tool".

Summary of Findings

Documenting the Opening of the Natural Food Co-op in the Student Union Building

History	• In **1997**, the UBC Natural Food Co-op started as a small group of 10 students, who met on a weekly basis to buy bulk food and prepare meals together (group 1, 5). • In **1998**, the Co-op moved into a donated portable, south of MacMillan Building, on Main Mall and Agronomy Road (group 1, 5). • Co-op membership began to expand, and they began an on-line bulk food ordering system, whereby members filled out weekly online forms, and goods were delivered to the portable for members to pick up and pay for their order (group 1, 5) • By **2000-2001**, the Co-op membership rose to over 100 members. With the rise in membership, not everyone knew each other, and the Co-op honor system for payment of orders began to deteriorate, along with problems associated with cleanliness and security (group 1, 5). • In **2003**, notice was given to the Co-op to vacate its portable. Alice Miro, president of the Co-op approached the AMS to secure another home - a kiosk in the SUB (group 1, 5). • In January **2004**, the Co-op officially opened its storefront in the Lower level of the SUB (group 1, 5, 11). • By March **2004**, Co-op membership grew to over 300 members with 30 volunteers helping the Co-op (group 1).
Vision	• "(1)To make sustainable foods available to the entire UBC community; (2) To provide youth with employment and leadership opportunities; (3) To educate the public about food and trade issues, fostering critical thinking and global citizenship" (Miro, 2003 in group 11).
Mission	• To "provide affordable, organic and fair-trade products to the UBC community; encourage and contribute to campus sustainability by supporting local producers and obtaining produce from the UBC Farm; inspire students to take an active role in their community's food system" (Miro, 2004 in group 5).
General	• **Hours of operation:** Monday-Friday from 12-2pm (group 1, 5, 11) • **Labor:** Volunteer based (group 1, 15, 11) • **Services:** Sells organic and fair-trade perishable and non-perishable foods (group 1, 1, 5, 11) • **Prospects:** Intends to renovate its kiosk in the SUB during Summer 2004 and re-open in the Fall 2004 as a full service grocery outlet (group 1). Intends to hire UBC students, further co-ordinate with other UBC food System stakeholders organize social and educational events (group 11).

Potential Positive Contributions and Challenges that the Opening of the Co-op may have on the Overall Sustainability of UBC's Food System

Dimension	Potential Contributions	Potential Challenges
Economic Sustainability	**<u>Employment and volunteer opportunities</u>:** • The Co-op may provide valuable hands on experience for students that can lead to employment at the Co-op and/or in the broader community (group 1, 11). **<u>Economic viability of the UBC food system:</u>** • The Co-op's services such as selling local and unprepared foods, etc. will increase community grocery purchases on campus; the purchasing of local foods will contribute to local economic cycling (group 11). **<u>Affordability of sustainability produced foods:</u>** • Because the Co-op purchases in bulk, it translates into savings per unit cost for customers (group 1). **<u>Support for Fair-Trade Foods:</u>**	**<u>Remaining an economically viable and self-sufficient operation:</u>** • The Co-op must secure enough funding through fees, grants and generate enough revenue from sales to cover start-up and operational costs (group 1, 11). **<u>Competition with other food providers:</u>** • The Co-op must compete with prices and quality of similar products sold at other UBC food outlets (group 1).

	• Because the Co-op purchases fair trade goods, it promotes and supports increasing economic returns for food producers (group 11)	
Social Sustainability	**Strengthens Relationships between Producers and Consumers:** • The Co-op purchases local foods which increases connections between producers and consumers (group 1, 5, 11). **Enhancing food security, knowledge and awareness:** • The Co-op purchases organic and fair trade goods which promotes critical thinking among consumers about food security, food system, and sustainability issues (group 1, 5, 11).	**Accessibility:** • The Co-op's limited hours of operation and variety of foods limits the ability of UBC consumers to access unprepared, organic and fair trade goods. The limited variety of unprepared foods influences many consumers to go to alternative outlets off campus to make these purchases (group 5, 11). • Lack of community awareness of the existence of the Food Co-op (group 1). **Competition:** • Tension may be created between the Food Co-op and food service providers over space and advertising issues (group 1).
Ecological Sustainability	**Waste Reduction:** • The Co-op purchases many bulk food items which reduces packaging required (group 1). • The Co-op provides members with a reusable cloth shopping bag with their membership fee (group 5). **Food Mile Reduction:** • The Co-op purchases local foods which reduces negative externalities associated with emission with high transportation (i.e. CO2 emissions, pollution, etc). **Supporting Organic Farming** • The Co-op purchases organic foods which do not rely on use of chemical fertilizers, pesticides, herbicides, etc. (group 1).	**High Food Miles Items:** • The Co-op purchases fair trade products that have high food miles and are associated with negative externalities (group 1).

Challenges and Opportunities of Opening a Student-run Co-operative Business in SUB

Opportunities	Challenges

1. The Co-op's services will increase the accessibility for the UBC community to unprepared, fair trade and organic food on campus (group 1, 5, 11). **2.** The Co-op's services will increase awareness and knowledge among UBC community members regarding food issues, particularly fair trade, organic, and seasonal foods (group 1, 5, 11). **3.** The Co-op will provide the UBC community with information and resources about student-run co-ops in general, and specifically ideas on how to start one's own co-op (group 1). **4.** The Co-op will provide students with the opportunity to work in their facility; creating an opportunity for students to gain first hand experience in developing a variety of leadership and employment skills (group 1, 11).	**1.** Although the Co-op is now centrally located within campus, it is located in a relatively inconspicuous place within a corner of the lower level of the SUB restricting customer awareness of its very existence (group 5, 11). **2.** The Co-op's limited hours of operation (M-F: 12-2pm) greatly restricts the accessibility of its services (group 5, 11). **3.** The Co-op is dependent on volunteerism, which can be a less reliable source of labor than paid staff (group 1, 5). **4.** The Co-op lacks water, cooking and refrigerated storage facilities, which impinges on its ability to offer a variety of foods. Currently, the a Co-op can only offer a small variety of fruit and is restricted to selling mostly non-perishable goods such as coffee, tea, grains, etc. (group 5, 11). **5.** The Co-op relies on limited resources (membership fees, grants and sales) which make it difficult for them to recover start-up and operational costs (group 1, 11).

Plan of How a Student-Run Co-operative Business Could Fit into the Faculty of Agricultural Sciences (FAS) Curriculum and Values

Value Integration	• The Food Co-op could be further integrated with the FAS's values, by providing opportunities for FAS students to gain hands on experience in striving to make the food system more sustainable (group 1).
Faculty of Agricultural Science (FAS) Curriculum Integration	**AGSC 100:** • The Food Co-op could function as a location whereby AGSC 100 students would be required to conduct mandatory course requirement volunteer hours (group 1). **AGSC 350 and 450:** • The Food Co-op could be integrated in a problem based case study for AGSC 350 students and/or a scenario for AGSC 450 students investigating local food sources for the Co-op to make purchases, develop nutritional meals using seasonal foods, and develop business plans for how the food Co-op could be integrated with the student-run food outlet Agora in MacMillan building (group 1, 11). **GRS 290/390/490:** • Through GRS mandatory community projects, the Food Co-op could play a role in increasing student awareness of its services through marketing presentations and posters (group 1). **FRE 302:** • The Food Co-op could be integrated in a FRE 302 term business plan project (group 1). **FNH Courses:** • An assignment could be created in various FNH courses, whereby students are required to develop recipes for the Co-op using seasonal foods (group 1) **FNH 341:** • Actual food items from the Co-op could be supplied for "FNH 341 Food Theory Applications Food Laboratory" (group 1). **FNH 403:** • FNH 403 students could be assigned the task to design a food safety manual and food safety test that would be required for all Food Co-op volunteers to study and

	pass by the end of their first month of employment. The food safety manual could include "Hazard Analysis Critical Control Points (HACCP) and Standard Operating Procedures (SOP's)" (group 1). **FAS Co-op Program:** • Paid positions could be created in the FAS co-op program for students to work with the Food Co-op, possibly enabling the Co-op to expand its hours of operation (group 5).
Agricultural Science Undergraduate (AGUS) Society Integration	• The Food Co-op could supply the produce and dry goods for the Agricultural Undergraduate Society (AGUS) Wednesday Night Barbeque, Community Dinner, and other related functions" (group 1). • A liaison position could be created "within the AGUS and the Food Co-op executives whose sole purpose is to maximize the mutual benefits of cooperation between the two organizations" (group 1).
AGORA Integration	• The Food Co-op could supply food for Agora to sell at its outlet, such as "coffee, confectionaries, baking supplies, and eventually produce for sandwiches and salads" (group 1, 11).
UBC Farm Integration	• The UBC Farm could supply the Food Co-op with its products. The Farm would gain with increases revenue and general community exposure to its products and services. The Food Co-op would benefit because its variety of food selection would increase, in turn increasing its revenue and general accessibility to unprepared foods on campus (group 1, 5, 11). • The Food Co-op could supply their products to the UBC Farm to sell, such as at their Saturday Markets (group 1). • If the Food Co-op and the UBC Farm collaborate in supplying their products to each other, this would help "to address the seasonality of their operations (i.e. Food Co-op is [primarily] a summer operation and the Food Co-op is [primarily] a winter operation" (group 1). • A Co-op/Farm liaison position could be created in the Food Co-op's executive committee to aid in facilitating collaboration (group 11).
FAS Integration	• A "tri-mentoring triad [could be developed] in which a junior Agricultural Science student and a senior member of the Food Co-op partner with a professor in AGSC to explore opportunities to further the Food Co-op" (group 1).

Proposed Forms of Collaboration Between the Co-op and Other UBC Food System Stakeholders

UBC Food Services and the AMS Food and Beverage Services: • The UBC Food Co-op could supply food items to UBC Food Services and AMS Food and Beverage Services to sell at their outlets, including at student residence facilities (group 11).
UBC Waste Management: • The UBC Food Co-op could educate its consumers regarding the principles of reduce, reuse and recycle in general, and the specific locations to conduct these practices on campus (group 5).
General: • The Campus Sustainability Office, Student Environment Centre and UBC Housing could aid the Co-op by promoting and educating the UBC community about its facility and services (group 5).

Documentation of Other University Co-op Experiences

University Co-op Successes	**University of California Davis Food Co-op:** • "Owned and operated by over 7000 households" • Open 7 days a week from 8am-10pm • Sells chemical free and naturally raised beef and chicken, 40 organic produce items, and 750 bulk items • "Offers social events such as cooking classes, bike maintenance workshops, blood drives, and wine tastings" (Davis Food Co-op, 1999 in group 5).
Proposed Methods of Data	• The experiences of other student-run university co-ops could

Collection	be investigated by conducting an internet search of other co-ops and analysis of paper publications, as well as by contacting representatives from other co-op's via email, telephone and/or mail. See **Appendix F** for group 11's Guiding Questions.

Proposed Market Surveys

- A questionnaire could be distributed to the UBC community to assess their level of awareness about the Co-op, perceptions about the need for a Co-op, and if deemed needed, assess what their vision of the Co-op should ideally look like (group 5). See **Appendix F** for group 5's UBC Food Co-op questionnaire.
- A questionnaire could be distributed to the UBC Community to assess levels of community interest, demand, need and knowledge about the UBC Food Co-op (group 1). See **Appendix F** for group 1's Consumer Awareness/Action Survey.

Summary of Recommendations

Campus Sustainability Office:

- CSO should aid in increasing awareness about the Co-op and its significance by integrating "topics regarding organic and fair-trade foods, the UBC Farm, and the Natural Food Co-op into their already existing sustainability discussion circles" (group 11).
- CSO could aid in improving the overall sustainability of the Co-op by "facilitating collaboration between the Natural Food Co-op and student groups, UBC Faculties and the UBC Farm" (group 11).

UBC Waste Management:

- UBC Waste Management should implement a color coded waste system, whereby different colors are given to garbage, recycling and compost bins, which could be "placed outside each year-round residence and food service facility at UBC with a chart to interpret the color-coding scheme" (group 5). The UBC Food Co-op could be used as a service to educate UBC consumers about how to use the color-coded system and explain its benefits (group 5).

Overview of 2004 Spring Scenario #6: Develop a Definition for Food Security of the UBC Campus in the Context of UBC's Efforts to Become a Sustainable Campus

Summary of Specific Problem Definition

Many different definitions of food security exist in different types of literature, yet many of these definitions are used and applied almost universally across different places, social, economic and political contexts. As a result, many problems are encountered when attempts are made to actually operationalise universal concepts of food security across these contexts.

General Research Question:

To explore how food security at UBC is different from universal definitions and how it applies to the students, staff and faculty on campus. To assess the role that UBC food providers play in food security on campus, and to identify other stakeholders in food security on campus.

Summary of Scenario Specific Sustainability Indicators & General Principles And Proposed Methods of Data Collection

Social Indicators (I) and Guiding Principles (GP):

- "Perceived availability, acceptability, and accessibility of food to those who access who access the UBC food supply the most: students, permanent residents, faculty, and staff" (GP) (group 20).

Proposed method of data collection:

- A quantitative questionnaire to "assess the security of the food supply through the perceived availability, acceptability and accessibility of food on the UBC campus" as perceived by UBC students, permanent residents, faculty, and staff. The questionnaire will also be useful for "monitoring food consumption trends, determining dietary knowledge and habits, and analyzing the relationships between food choice and income, gender, and/or ethnicity" (group 20).
- Results of the questionnaire can be analyzed by determining the average response to questions by section. Once averages are obtained, they can be interpreted by comparing them to a social sustainability scale, ranging from 1 (equals 20%, exceedingly unsustainable) to 5 (equals 100%, highly sustainable) (group 20) See **Appendix F** for group 20's questionnaire.

Economic Indicators (I) and Guiding Principles (GP):

- "Difference in cost between nutritious foods found on campus with those same foods found off campus" (I) (group 20).

Proposed method of data collection:

- Conduct a comparative price analysis between a selection of food outlets on-campus and locations off-campus. Selection of on-campus food providers should be determined by highest consumer frequency and largest available selection of products (i.e. Pacific Spirit Place, Place Vanier, Totem Park, and 99 Chairs), as well as by ownership (i.e. food outlets operated by other parties, such as The Deli and Benny's Bagels). Selection of food outlets off-campus should be determined by closest proximity to UBC, and degree of consumer frequency (IGA on 41st and Broadway, and Safeway on 10th and 4th) (group 20).
- "Once the price data for these specific foods is gathered, tabulated, and averaged, comparisons can be made to the prices of the same foods purchased off-campus at the specified locations" (group 20).

Ecological Indicators (I) and Guiding Principles (GP):

- "Distance that food travels from production to consumption" (GP) (group 20).

Proposed method of data collection:

- Conduct a food miles assessment using the Weighted Average Source Distance (WASD) equation to calculate food miles of products served at AMS Food and Beverage Services, UBC Food Services, and the UBC Village. Values generated from the WASD equation will determine to what degree on a scale of 1 (highly unsustainable) to 5 (highly sustainable) that each product is ecologically sustainable (group 20). See **Appendix E** for the WASD equation and group 20's corresponding ecological indicator scale.

Summary of Findings

Summary of characteristics that makes a definition of food security for UBC Campus context specific

Differences in food security issues for UBC students residing on campus and off campus

Students Living On Campus	Students Living Off Campus
o Affordability is a concern, especially for students living in either Totem Park or Place Vanier residences. Due to the absence of unit cooking and storage facilities, students are required to purchase an 8 month meal plan ranging in price from $2, 540.16 ($317.52/mth) – $3, 223.36 ($402.92/mth) (prices include overhead and unionized labor costs).	o According to the monthly cost of eating averages, affordability is less of a concern for students living off campus. The "average monthly cost of eating for a 19-24 year old male is $197.92 and for a 19-24 year old female is $146.22" (Cost of Eating in BC Report, 2002, in group 20).
o Accessibility of food is limited since it is dependent upon UBC food providers' hours of operation. Place Vanier and Totem Park dining facilities close at 7:00 and 7:30pm. Convenience stores are located in both residences, but mainly provide limited meal options, such as some frozen food entrees. Most UBC Food Service operations on rest of campus close by 4pm, and AMS Food and Beverage Services are open later but are all located in the SUB on Central Campus.	o Accessibility of food is high for most (depending upon income), with an abundance of 24hour food outlets, convenience stores and full service grocery stores open late.
o Acceptability of food in residences varies by specific residence. Place Vanier has recently undergone renovations, and is said to offer the greatest cultural and personal variety of food, whereas in other cafeterias food is generally regarded unfavorably.	o Acceptability of food is much greater, since students generally have the facilities to cook and store food at home; they have control over the ingredients and methods to prepare their food.
o Food safety is a small concern, because food is prepared and served in accordance to strict food safety policies by food safety certified staff.	o Food safety can be a much greater concern, where household members may not have adequate knowledge regarding food handling, cooking and storing, and some food outlets do not have certified staff, or unhygienic facilities.

(group 20)

Role of AMS Food and Beverage Services and UBC Food Services play in Campus Food Security

Both AMSFBS & UBCFS	AMSFBS	UBCFS
• "Control the majority of food service outlets on the UBC Campus, and therefore play an important role in all aspects of food security status (i.e. accessibility, availability, affordability, and acceptability) as well as sustainability at UBC". Between both	• All AMSFBS are located in the Sub in central campus, where a diverse array and high volume of UBC community members patronize. • Provides "a wide variety of food choices to accommodate a wide variety of tastes (i.e. Asian cuisine, vegetarian food	• "Manages the majority of and the largest food outlets on campus" (Yip, 2004 on group 20). • Operates both cafeterias in junior residences: Place Vanier and Totem Park. • Introduced a "Think Food" product line, and has

providers, they control over 30 food service outlets on campus. • "Employ a considerable number of students, which helps to strengthen economic and community ties within UBC"	options, etc.)" (AMSFBS, 2004 in group 20). • Implemented numerous sustainability initiatives ranging from offering incentives to use reusable cups, to offering exclusively Fair Trade coffee at all outlets	implemented numerous sustainability initiatives ranging from providing discounts for use of reusable food and beverage containers, to offering reusable cutlery in their facilities.

(group 20)

List of Stakeholders in UBC Food System

1. Major food providers: UBC Food Services and AMS Food and Beverage Services
2. Outside food providers not operated by UBCFS and AMSFB
3. Local, national and international suppliers to UBC food providers
4. UBC Farm (supplies produce to SAGE Bistro, holds Saturday Markets for the general public, provides education and outreach, compositing activities, etc.)
5. Farmers that provide food to the suppliers for UBC food providers
6. UBC Waste Management
7. UBC Campus Sustainability Office (supports and promotes various sustainability initiatives on campus)
8. UBC consumers (including students, staff, faculty living on and off campus, visitors, etc.)
9. UBC Board of Governors ("have the ultimate say in budget money allocation, long-term planning and development on campus)
10. Faculty of Agricultural Sciences (staff, faculty and students, especially AGSC 250 and 450 classes)
11. Transporters (beverage, food and food products)

(group 20)

Summary of Recommendations

AGSC 450 Class:

- Students should investigate "additional indicators of profitability of food services at UBC, percent of compostable waste on campus actually composted, and consumer awareness of nutritional foods" (group 20).
- Students should investigate the feasibility of extending hours of operation for *99 Chairs* as a pilot project to demonstrate to what extent improving accessibility of food on campus is a economically feasible (group 20).

AGSC 450 Class and the Campus Sustainability Office:

- A UBC food security "assessment be conducted at least every 3 years to evaluate whether services provided by the food system and the community's needs are aligned" (group 20).
- Overall nutrition of the UBC community can be improved by "increasing consumer awareness of nutritious food choices and increasing availability, accessibility and affordability of nutritious foods on campus" (group 20).

Campus Sustainability Office:

- Continue to facilitate and strengthen communication between UBC food system stakeholders through CSO forums such as Sustainability Circles focused on food security issues which should be held annually (group 20).
- To encourage the "establishment and strengthening of working partnerships amongst current stakeholders (such as between the UBC Food Services' Marketing and Sustainability Coordinator and the CSO)" (group 20).

- To encourage the "promotion of additional collaboration between UBC and the City of Vancouver could also prove beneficial to help further integrate these two systems and food security research in Vancouver" (group 20).

Overview of Spring 2004 Scenario #7: Customer Awareness of and Participation in Sustainability

Summary of Specific Problem Definition

Both of UBC's main food providers, UBC Food Services and AMS Food and Beverage Services, need to know how much knowledge and awareness the UBC community has about current sustainability initiatives, in order to gauge current support levels, and to assess the desirability and feasibility of implementing new sustainability initiatives.

General Research Question:

To compile an inventory of current UBC sustainability initiatives and related educational campaigns. Also, to develop a detailed research plan proposing methods to assess UBC community support for current and proposed UBC sustainability initiatives and their corresponding level of participation. To propose possible future marketing and educational campaigns that would enhance UBC consumer awareness and participation in sustainability initiatives.

Summary of Scenario Specific Sustainability Indicators, Guiding Principles

Social Indicators (I) and Guiding Principles (GP):

- "Amount of knowledge that UBC community members have regarding sustainable food initiatives at UBC" (GP) (group 16).
- Level of "knowledge about the food system about the food system and the concept of sustainability" (GP) (group 12, 18).
- Level of awareness among the UBC community regarding the "nutritional benefits of purchasing food that are locally grown" (GP) (group 12).

Economic Indicators (I) and Guiding Principles (GP):

- "Profitability of a *sustainable* UBC food system" (GP) (group 16).
- "Profitability of UBC's food service sector" (GP) (group 18).
- Level of awareness among UBC community members regarding the "economic benefits that purchasing locally grown foods has for local farmers and the UBC community" (GP) (group 12).

Ecological Indicators (I) and Guiding Principles (GP):

- "Proportion of food wastes that are being composted and recycled at UBC" (I) (group 16, 18).
- Level of awareness among the UBC community regarding the "environmental benefits of purchasing food that are locally grown" (GP) (group 12).
- Level of awareness among the UBC community regarding the "benefits of recycling and composting for the local community" (GP) (group 12).

Social-Economic Indicators (I) and Guiding Principles (GP):

- "Proportion of the food purchasing budget spent on locally produced and/or processed goods by campus food providers" (I) (group 18)

Social-Ecological Indicators (I) and Guiding Principles (GP):

- "Use of sustainable food system initiatives on campus by faculty, staff and students" (GP) (group 18).

Economic-Ecological Indicators (I) and Guiding Principles (GP):

- Distance that unprocessed travels from the point of production to the UBC consumers' plate (I) (group 18).
- Proximity of food processors to processed food served on campus (GP) (group 18).

Summary of Findings

Inventory of UBC Campus-based Food Sustainability Initiatives

Organization/Service/Faculty	Initiatives
UBC Waste Management	• "Promotes the use of recycled paper and encourages UBC community members to co reduce the use of disposable containers" (group 12). • Provides "waste reduction education to the campus community through the coordinatio recycling and composting, and through information fact sheets and compost workshop 18). • "Developed a recycling program, with the slogan "My Waste, My Responsibility", to pro sustainability awareness and waste reduction", whereby "regular garbage cans are be replaced with waste free units at each workstation and if recyclable products are found garbage a fine is added to the dumping costs" (UBC Waste Management, 2001/02 in g
UBC and Campus Sustainability Office (CSO)	• "In 1997, UBC became Canada's first University to implement a sustainability policy" (g • The CSO "has been trying to promote, coordinate, and implement effective sustainabil practices within the UBC campus, creating programs such as composting, litter reducti composting" (group 12). Programs that have been implemented include the following: ▪ Sustainable Energy Management Program (generated savings of up t million as a result of energy reduction and decreased CO_2 emissions) ▪ UBC SEEDS ▪ Sustainability Coordinator program ▪ Sustainability Circles ▪ TrekSTEP1 (Student Training and Employment Program) ▪ Paper Reduction (group 12).
UBC Food Services	• "Own-mug and food container discounts at all locations on campus… [whereby] custo receive a $.15 discount when they use their own mug or food container" (UBCFS, 200 12, 18). • "Provision of Fairly Traded Coffee at various outlets on campus" (UBCFS, 2004 in grou • "Provision of china, cutlery, and glassware at various outlets throughout campus" (UB in group 12, 18). • "Recycles almost all cardboard, paper, metal and glass" (group 18). • Recycling of cooking oil which can be used to produce bio-diesel to power various cam vehicles (group 12, 18). • Sage Bistro purchases produce products from UBC Farm (group 12, 18). • Set up procurement standards with preference for purchasing locally produced food, a products from local manufacturers (group 18). • Has a composting program which uses both pre- and post-consumer organic waste, a to "use composted organic waste as a fertilizer for UBC grounds" (group 12, 18). • Has a "Nutritionist Program to assist residents in achieving optimal health by providing a registered dietitian and educational brochures such as *Canada's Food Guide to Hea Eating*" (group 12). • Provides "re-usable containers and utensils at no-charge to all residence students at th the year" (UBCFS, 2004 in group 12).

	• Has "healthy menu options [whereby] UBC Food Services is constantly working on res developing and providing healthier dining choices to students" (group 12).
AMS Food and Beverage Services	• Provides "Eco-Cards", whereby customers are rewarded with a free coffee if they buy using their own mug at selected locations (AMSFBS, 2004 in group 18). • Provides "$.15 discounts" when customers use their own mug (AMSFBS, 2004 in grou • Has an "Avoid Green Tax" program, whereby customers receive a $.25 discount when their own mug at selected locations (AMSFBS, 2004 in group 18). • All AMSFBS locations offer exclusively fair trade coffee (AMSFBS, 2004 in group 12). • Has a "Happy Hour" where during several times during a semester customers will rece coffee or tea if they brought their own mug with them at selected locations (AMSFBS, 2 group 18). • Has a "Save $!" program, whereby customers receive a $.25 discount if they use their container at selected locations (AMSFBS, 2004 in group 18). • Has a composting program which includes both pre- and post-consumer waste (group • "All cardboard, paper, glass, metal and plastic used by the department are recycled" (A 2004 in group 18). • Participates in "bio-diesel recycling", whereby used cooking oil is donated to be used t various campus vehicles (AMSFBS, 2004 in group 12, 18). • Uses "real china and cutlery" at selected outlets (AMSFBS, 2004 in group 12, 18). • Has a mandate to support local food growers (such as UBC Farm) whenever possible (AMSFBS, 2004 in group 18).

General and Other University/College Food Sustainability Initiatives

General and University/College Institutions	Initiatives
University of California (UC), Santa Cruz	• UC has a Student Environment Center which created the Stude Organic Solutions (SOS) in 2002 (group 16). • SOS's mission is to "promote the use of certified organic, sustai produced, and locally grown food in dining halls and other facult campus" (group 16). • SOS uses "pamphlets, place cards, lecture, workshops and tast educate students about organic food" (group 16). • SOS is "currently conducting an Organic and Sustainable Knowl Survey to examine students' awareness of organic food", in an e aid in "planning and designing materials to inform students abou purchasing, eating, and cultivating organic food with a sustainab mindset" (group 16). • SOS has received a "research grant to investigate the compone getting organic food on campus" (group 16).
Bates College (BC), Maine	• Introduced a "scrim line" where food leftovers and plate scraping placed on a conveyer belt, and a "continuous stream of water flo the conveyor belt, where the water removes food waste from the catches it in a strainer...the food waste is then sent to a local pig while the water is used in the scrim line is re-used in the scrim li 18). • "Pre-consumer kitchen residuals are transported to a farm that is miles away for composting which saves dining services about $1 year" (group 18). • Launched a local food initiative, whereby "30-40% of the food pr that are purchased by Bates College are locally grown" (group 1
Middelbury College (MC), Vermont	• Middelbury dining service "formed a partnership with the college student-run Organic Garden, which sells small amounts of fresh to the dining service throughout the summer" (group 18). • "Formed partnerships with local farmers and local produce distri enabling them to purchase more local produce for the food servi on campus" (group 18).
University of Wisconsin (UW)	• "First major public university in the US to provide locally grown f the regular menu of the dorm cafeterias" (group 18). • These menus also give "a general overview of topics such as er

	food security sustainable agriculture, and the economic potentia with local food systems" (group 18).
University of Vermont (UV)	• "Developed a composting system where food waste is collected five campus locations and transported to a composting facility" (• "Food service outlets have carts labeled "Food Waste Only", wh students are encouraged to empty their leftovers and other food (group 18). • Student residents on campus can obtain biodegradable compos which they can use in their dorms (group 18).
University of New Hampshire (UNH)	• Installed food pulpers in their dining halls, where food wastes ar pulverized into small pieces before composting (group 18). • "Student volunteers from the Office of Sustainability Program co and organic waste from various locations four mornings a week. are transported by truck by student volunteers to Kingman Farm University's agronomy research facility, where it is composted in the eight compost windrows" (group 18).
Michigan State University (MSU)	• "Developed a composting system, supplying 32-gallon wheeled food service outlet kitchens…[which] is then transported to a co site about four miles from the campus, where it is composted an as a potential fertilizer or soil amendment" (group 18). • "Conducted a sociological survey of the campus to assess curre environmental awareness" (group 12). • Conducted a campus solid waste, energy and water assessmen 12). • "Significantly reduced waste in classrooms by 2001" (group 12).
Evergreen State College (ESC), Olympia, Washington	• Has an "on-site air composting and a continuous-flow vermin-co system and are involved with educational outreach programs, o and holding community workshops" (group 18). • Has a "volunteer-run composting project which was developed i and involves pick-up service from approximately 1000 residents 18).
Sterling College (SC), New York	• Has their own dining service which uses "locally grown meats, p and processed foods in their kitchens…biodegradable, petroleu dish and laundry soaps, and 100% recycled, unbleached paper that are composted" (group 18).
North Carolina State University (NCSU), Greensboro	• "Students and volunteers take leftover food from the dining halls homeless shelters", and each school year "collected clothes, ho items, and food are given directly to those in need" (group 12). • "A monthly newsletter is posted in bathroom stalls, detailing resi waste reduction, recycling and environmental issues on campus 12). • Has "recycling boxes for special items such as transparencies, h books, CDs, floppy disks, toner cartridges, and confidential docu (group 12).
Mount Allison University (MAL), New Brunswick	• Uses china, reusable plastics, eco-friendly cleaning supplies, a products "which meet or exceed the standards outlined by the N Ecology labeling system" (group 12). • Provides "organic (pesticide/herbicide free) and seasonal option that does not have to be preserved" as well as locally grown foo 12). • Participates in food and cardboard recycling programs (group 12
University of Victoria (UVIC)	• Plans on initiating a "campus-wide shift in thinking towards mor sustainable operations and activities" (group 12). • Has created an "UVic Sustainability Project" (group 12). • "Focuses more on waste reduction and recycling, energy, wate transportation" (group 12).
Simon Fraser University (SFU)	• "Burnaby Mountain Community Corporation (BMCC) represent opportunity for SFU to plan and develop a sustainable communi

	be shown as replicable model for future planning initiatives" (gro • Proposed initiatives include increasing the "opportunity for reside grow their own food… [such as] roof-top gardens, plant edible ve for landscaping and promote community gardens" (group 12).
Burger King (BK)	• BK has "collaborated with government and industry to adopt improvements in humane conditions for animals that are raised f consumption" (group 16).

Current UBC Food Related Sustainability Marketing and Educational Campaigns

Sustainability Pledge	• The "Sustainability Pledge was created in 2002 to give UBC stud the opportunity to make a personal commitment to sustainability Students have the opportunity to sign the pledge which reads th pledge to explore and take into account the social and ecologica consequences of my decisions. Furthermore, I pledge to use the knowledge I gain at UBC to improve the sustainability of the communities in which I live, learn and work" (group 18). • This "commitment is supported through courses, events, ideas, a career resources that make it easier to put sustainability into pra one's personal and professional life" (group 18).
Sustainability Coordinators, CSO	• The CSO has sustainability coordinators who attempt to link and relationships between the CSO with faculties and residences (gr 18). o **Faculty Sustainability Coordinator Program** ▪ Focus of the program is on increasing "efficient use and transportation, and reduced waste gene ▪ "Designed to implement sustainable developme policy in UBC's 300 departments through provid information about environmental impacts of dail activities, and helping to identify alternative way doing things", such as through the use of toolkits 18). o **Residence Sustainability Coordinator Program** ▪ Focus of the program is on energy, material, air food. ▪ The program is in place in junior residences (To and Vanier) where over 1300 students reside. ▪ The residence coordinator duties include: "cond educational and social marketing campaigns; pr resources to create change and alternative idea developing networks between faculty, staff, stud and community; and applying for grants to imple projects in the residences" (group 18).
UBC Waste Management Services	• "Offers consulting services to help develop composting systems provide training, and monitor small-scale projects [such as] St. J Composting, Green's College Composting, Acadia Community C Backyard Composting, UBC Food Co-op Demonstration Garden Composting, and Gage residence Backyard Composting" (group • Participates in many activities and events such as "GSS Orienta Imagine UBC Main Event Carnival, Campus Craze Information D Alternative Transportation Clean Air Day Fair, Student Residenc Promotions, Waste Free "One Less Cup", UBC Farm summer S market days, and the Cecil Green Staff" (group 18), • "Provide information about composting through backyard bin workshops, and produce a compost newsletter called "The Rind 18).
Intergenerational Landed Learning (ILL), UBC Farm	• The ILL "is a project of the Department of Curriculum Studies, w "brings together children, educators, and retired local farmers to how participation in a farming/gardening project on an urban farm foster environmental consciousness, respect for nature, an

	understanding of food-land issues" (group 18).
Market Garden, UBC Farm	• The Market Garden has a volunteer program which offers peopl opportunity to gain hands-on experience in the food production, harvesting and selling process (group 18).
SEEDS Composting and Recycling Program	• "This is an initiative that is aimed to assist students in effectively participating in composting and recycling" (group 12).

Proposed Future UBC Food Sustainability Marketing and Educational Campaigns

Imagine UBC Campaign	• The September Imagine UBC Campaign could be used as a foru introduce first year students to "food system initiatives including Natural Food Co-op, composting facilities, UBC Farm, and deals by UBC Food Services and AMS Food and Beverage Services" 18). • The Campus Sustainability Office "is planning to get MUG (My Undergraduate Group) leaders involved in educating the first ye students about sustainability and teaching them about composti recycling" (group 12). • The Imagine orientation could be used as a forum to conduct a scavenger hunt, whereby students have to locate sustainability initiatives on campus, which will "encourage students to actively participate in sustaining the food system" (group 12). See **Appe** for group 12's scavenger hunt questions.
Food Week/Sustainability Awareness Week	• A food week could be held in the SUB in an effort to increase UB community awareness about their food system (group 18). • Both UBC Food Services and AMS Food and Beverage Service set up booths to provide information about the role of each orga and all the steps from food production to consumption to waste management" (group 18). • "Information about eating local and seasonal diets could also be provided, with creative recipes using seasonal foods being provi booths for the UBC Farm, other farms, or processors in the Fras Valley" (group 18). • A sustainability awareness week could be held featuring "a farm market establishing the 'local orientated' environment which has found to be successful in marketing local foods". Representative both AMS Food and Beverage Services and UBC Food Service Farm, Dieticians of Canada, local farmers and SEEDS could all involved (group 12),
Food Mile Menus	• Food mile menus could be incorporated at UBC Food Services a AMS Food and Beverage Services outlets, whereby the origin ar of selected products are displayed on the menu, and if desired, a food miles could also be displayed (group 18)> • The "Inside UBC" student planner could advertise the food mile and also "list some seasonal foods/recipes, or a schedule of ava composting, growing, or processing workshops and events at th of approximately $250 for coupon sized entries, to $1500 for a p (group 18).
Green Building Tours	• The Campus Sustainability Office is planning to conduct green b tours, such as at the Liu Center and CK Choi Institute for Asian Research, to educate "students regarding the benefits for reduci green house gas emissions by purchasing green electricity certi that UBC uses to power these award-winning buildings" (group 1
Exchange Program	• "An exchange program to Mexico is in the process of being esta so that participants may enrich their education and learn more a sustainability" (group 12).
Sustainability Fair	• The Campus Sustainability Office has proposed sustainability fa increase staff, student, and faculty participation and awareness current sustainability initiatives on campus" (group 12).
Seasonal Cookbooks and Food Guides	• Food guides and cookbooks could be developed by the Food, N

	and Health Department which would illustrate the means and be eating seasonally, locally and in a balanced way (group 12).
Food Policy Council (FPC)	• "Establishing a FPC on campus would be an effective way in wh have a governing body whose purpose is to maintain awareness participation in sustainability initiatives on campus…[and] develo between consumers and local farmers" (group 12).

Proposed Methods of Data Collection

Central Research Questions	• What are current and potential levels of UBC community support for sustainability initiatives? • What is the current level of sustainability awareness among the UBC community?
Research Rationale	• Aid in increasing sustainability awareness, initiatives and participation, which is "fundamental to th sustainability of the UBC food system".
Instruments Of Data Collection	• A questionnaire should be distributed to assess customer general sustainability awareness. See **Appendix F** for group 12's sustainability awareness questionnaire. The questionnaire could be distributed through the following mediums: o "MUG orientation [which] is an ideal time for new students to obtain the questionnaire by including it with their information package given to them on the first day". o "Before students register, capturing all of the current students coming to campus". o Faculty members "could be responsible for issuing and retrieving the questionnaire". o "Residence dining halls and AMS and UBC Food Services could give out the questionnai students with the purchase of a meal and have a collection box". • Data obtained from the questionnaire should be interpreted in accordance with the following mark scheme: "80-100% of questions answered correctly indicates a high level of awareness, 60-80% somewhat aware, 40-60% mildly aware, and less than 40% would indicate that the participants ar aware". • Focus groups (6 to 10 people) should be conducted through a Student Directed Seminar Course, should be open to all students across faculty, and created by AGSC 450 students. The focus of th seminar should be on sustainability awareness, perceptions, and participation. See **Appendix E** f group 12's Student Directed Seminar information. • A questionnaire should be distributed to assess "current and potential support for sustainability in on campus". See **Appendix F** for group 12's questionnaire.
Timeline	• **<u>Spring 2005</u>:** AGSC 450 students should: o Distribute both questionnaires o Propose and design a detailed outline for the Student Directed Seminar to be used to cor focus groups. o Students should develop a plan regarding "how to implement a Sustainability Week on ca including those who could be involved and if students, staff, and faculty would be interest attending". • **<u>Spring 2006:</u>** AGSC 450 students should: o Begin collecting and interpreting data obtained from focus groups in the Student Directed Seminar. o Interpret information obtained from both focus groups and surveys, and use it "to impleme promotional events and awareness information for the public to take a more active role in food system" (i.e. sustainability week).
Beneficiaries	• **<u>UBC Community:</u>** o This research will benefit all members of the UBC community by increasing awareness ar participation in sustainability initiatives. o Students can take the knowledge they have gained on campus regarding sustainability is and apply it in their lives off campus. • **<u>Local Farmers:</u>** o Local producers will benefit because they "will have the chance to market their produce a increase sales" through increased UBC local food procurement practices.

	• **<u>Other Universities:</u>** o Other universities will benefit because they can "use the information gained on how to ass their campus current awareness and participation in sustainability".

(group 12)

Central Research Questions	• What are AMS Food and Beverage Services and UBC Food Services "current and proposed sustainability initiatives?" • How does AMS Food and Beverage Services and UBC Food Services currently evaluate the succ their initiatives? • What is the current level of UBC "customer awareness and participation in food services sustaina initiatives?" • Is there a need for a Code of Ethics for food purchasing practices at UBC Food Services and AMS and Beverage Services? • What sustainability initiatives do other universities engage in? • What "proportion of food wastes are currently being composted and recycled at UBC?" • What kind of marketing strategy could be created to be included in the food providers' business p that would help them "market their sustainability initiatives in a manner that will gain customer awa and support in a creative way?"
Research Rationale	• Aid in "moving the UBC food system forward along the continuum toward sustainability because i for AMS and UBC Food Services to continue to develop sustainability initiatives, they must be sho their programs are making a positive difference and that the community supports these initiatives" • Aid in providing UBC food providers with information regarding "which initiatives are most effectiv need improving, and whether some programs should be discontinued and more effective program implemented".
Sampling Frame	• Representative sample of UBC customers • Convenience sample of food purchasers from both UBC Food Services and AMS Food and Beve Services
Methods, Instruments Of Data Collection	• A secondary literature analysis should be conducted to determine UBC Food Services and AMS F and Beverage Services' current and proposed sustainability initiatives; how they evaluate the suc these initiatives, and their current related marketing and education strategies. • A survey should be distributed to UBC community members to assess their level of awareness an participation in sustainability initiatives. See **Appendix F** for group 16's sustainability survey. Meth administering the survey could include:"giving out ballots at food service retail outlets; making it p registration on the student services website, or taking it as part of a lecture where a survey is give class". A price draw could be held to help facilitate participation in survey completion. Data obtain the survey, can be interpreted by averaging the responses, and then comparing these averages t sustainability continuum, which will gage food providers "progress towards sustainability and can each year to evaluate how well they are doing". See **Appendix E** for group 16's sustainability con • Interviews should be conducted with selected food purchasing personnel from UBC Food Service AMS Food and Beverage Services to assess the need for a Code of Ethics when purchasing. See **Appendix F** for group 16's interview guide. • A secondary literature analysis should be conducted to assess what sustainability initiatives food providers at other universities and colleges are engaged in. • Focus groups should be held with students from Food Resource Economics, Faculty of Business Faculty of Commerce to elicit their ideas for developing a marketing strategy for UBC food provide market their initiatives to gain increased customer support and participation. Conversely, a profes could be sought out who would be willing to make the proposed marketing pans a mandatory clas assignment. • A mini waste audit should be conducted to determine the proportion of food wastes that are being recycled and/or composted. An outline regarding how this waste audit could be conducted is prov below: **1.** Select garbage cans at strategic locations around campus (eg. Different food service **2.** Begin monitoring the waste in these garbages completing the following: i. A visual inspection of the contents of the garbage and record them following categories • Recyclable paper • Recyclable plastic • Recyclable cans

	• Compostable • Garbage ii. Weigh the garbage containers (you may be able to get the custodians to do this at the end of the day) **3.** Once the levels above have been recorded over a 2 week data collection period, plac composting and recycling bins at these garbage sites and begin monitoring the garba again for another two week period. i. Repeat the process as above in the bulleted list **4.** Compare the data of when no recycling was available to when recycling and composti available at the chosen food service locations. Also use the data collected in part 2, to as which category of garbage holds the highest percentage of the total amount of garbage (g 16).
Timeline	• **<u>Spring 2005</u>:** AGSC 450 students should: • Refine methodology. Test instruments • Conduct the market research (measuring the level of consumer awareness and wil to participate) by doing the survey in order to measure all the indicators. • Collect all the data from the surveys. • Systematize the information and use the continuum to measure the current s sustainability • Conduct interviews with food service representatives using the provided interview gui • Review the list of programs run by the AMS and UBC Food Services. • Find out how Food Services is currently measuring the success of their programs a state and evaluate the effectiveness of these methods • Examine current marketing strategies and educational programs. In general? AM UBCFS's? • Analyze the data collected and make a conclusion regarding the level of the c awareness and participation level in all the initiatives • Propose ways to improve current initiatives as indicated by the research results • Propose new methods to measure consumer awareness and willingness to participat • Propose future marketing and educational campaigns based on the success of other institutions and UBC • This data should be organized in a manner that can be used by students in the follow year. • **<u>Spring 2006:</u>** AGSC 450 students should: • Conduct the mini-waste audit and analyze data • Create a focus group that contains business, commerce, and FRE students or see if professor is willing to create a class project based on this that proposes future marke educational campaigns with our indicators of sustainability in mind based on all of the collected • Combine these plans with your own and the work of the previous years to come up w you believe to be the best marketing and educational campaigns that will move the U Food System towards sustainability (group 16).
Beneficiaries	• **<u>AMS Food and Beverage Services and UBC Food Services:</u>** o This research will provide UBC food providers with "insight into the effectiveness of their curre programs and whether there is a current future market for their sustainability initiatives". o This research will aid UBC food providers in showcasing their sustainability initiatives, ideally them in implementing more sustainability initiatives; as a result will enhance their image "as le of the process, and further, as supporters of a sustainable global food system". o Overall, this research will aid in showing how UBC food providers are "good examples to othe educational institutions, and may gain a leadership role in revolutionizing food systems management". • **<u>Local Farmers, Producers, Value-added Producers and Other Businesses:</u>** o If local farmers form more and/or new contracts with UBC food providers, their revenue will in from increase in purchases. o Businesses in the local economy will benefit from the increased support of local producers in

	community. • **UBC Community:** o This research will benefit the general UBC community by contributing to their "awareness importance of sustainable food choices, making them healthier", and participation in susta initiatives will enhance UBC food security.

(group 16)

Central Research Questions	• What are UBC consumers' level of awareness and participation in sustainability initiatives on cam • "What opportunities are available to increase awareness of and participation in the food system?" • What proportion of the UBC community is being reached by current sustainability related educatio marketing campaigns?
Research Rationale	• Aid in determining which sustainability initiatives and programs "are appealing to whom, and wher is a need to grow and develop other programs to target those not reached by the current initiative • Research is important because "even the best initiatives will do nothing to improve sustainability i is using them".
Methods, Instruments Of Data Collection	• A secondary literature analysis should be conducted to determine current sustainability initiatives and corresponding levels of participation and support. • Informal interviews should also be conducted with key members in charge of these initiatives. • A survey should be distributed to determine general consumer demographics and purchasing beh as well as to assess levels of customer awareness, interest and participation in sustainability initia both on and off campus. See **Appendix F** for group 18's sustainability survey. The survey should distributed "by email (through the UBC system) or online" and should take approximately 5 to 10 m to complete. To encourage participation, an incentive could be offered, such as being "entered in for several small prizes furnished by the food service groups for its completion". • Informal interviews should be conducted with other key organizers/facilitators in sustainability initi other universities to "discover the successes and failures that may have arisen as the projects ma and evolved".
Timeline	• **Spring 2005:** AGSC 450 students should: o Use the survey to assess customer awareness and participation in sustainability initiative and analyze the results. o Follow up on initiatives from other universities (by contacting the people heading up these discover which have been most successful (socially, ecologically, and economically). o Refine the list of initiatives that could be adopted at UBC: • Determine the cost of implementing such initiatives. • Determine the support for the new initiatives by the other sustainable organizatio o Further assess the additional marketing and educational strategies that are in place on ca • **Spring 2006:** AGSC 450 students should: o Using the results from the customer awareness survey and the refined list of initiatives co Year 4 [Spring 2005], create an action plan for enhancing the sustainability of the Food S UBC. o Give some suggestions for further initiatives that could be taken in future years if the prop initiatives are successful (e.g. purchasing more organic foods, helping create community based on the success of the UBC community initiatives). o Design possible educational strategies.
Beneficiaries	• **AMS Food and Beverage Services and UBC Food Services:** o Aid in establishing the demographics of the participants in their initiatives which they can future planning. o Aid in determining if consumer behavior changes are resulting from any other their educa marketing campaigns. o Aid them in determining the level of both current and potential support for their sustainabi initiatives; as a result will aid them in assessing the current success of their initiatives and potential new directions.

	• **UBC Community:** o Aid in gauging current levels of progress being made on campus in making strides toward sustainable food system.

(group 18)

Recommendations:

Campus Sustainability Office:

- Devote significant resources to education and marketing campaigns for UBC sustainability initiatives because "if the community has no knowledge of them, they will not participate, and there will be no support for programs" (group 16).
- Review the results of group's 12, 16 and 18's research plan to be conducted by the 2006 AGSC 450 team, to "gain a better understanding of the attitudes of the UBC community toward sustainability, and acknowledge these when developing future programs to work towards a sustainable UBC" (group 16).

Overview of Spring 2004 Scenario #8: What are the Perceptions of UBC Customers Regarding the Price of Food at UBC?

Summary of Specific Problem Definition

Both of UBC's main food providers, UBC food and Beverage Services and the AMS Food and Beverage Services, need to know UBC consumer perceptions regarding their food prices, as well as the economic feasibility of adopting more sustainable food purchasing policies, and ways of account the full or true costs and benefits of food items. This information is necessary for UBC food providers to assess the desirability and feasibility of implementing new sustainable products.

General Research Question:

To develop a detailed research plan proposing methods to assess the perceptions that UBC consumers have regarding the price of food sold at UBC food outlets.

Summary of Scenario Specific Sustainability Indicators & Guiding Principles

Social Indicators (I) and Guiding Principles (GP):

- Awareness of nutritious foods among UBC consumers (GP) (group 2).
- UBC "consumers' perceptions of current food prices at UBC" (GP) (group 3).
- Awareness of concept of sustainability and food practices on campus" (GP) (group 3, 4).
- Level of awareness of opportunities to participate in food practices on campus (GP) (group 3).
- Willingness to pay among UBC consumers for sustainable food products (GP) (group 4).
- Ability to pay among UBC consumers for sustainable food products (GP) (group 4).

Economic Indicators (I) and Guiding Principles (GP):

- Degree to which UBC "customers are satisfied with the prices of food on campus compared to off campus" (GP) (group 2).
- "Affordability of nutritious food for individuals living on campus" (GP) (group 3).
- "Profitability of the UBC food system" (GP) (group 4).

Ecological Indicators (I) and Guiding Principles (GP):

- Level of UBC community awareness about locally produced foods (GP) (group 2).
- Willingness to pay among UBC consumers for locally produced food" (GP) (group 2).
- "Availability of local foods" on campus (GP) (group 3).
- Distance that food travels in miles at UBC from point of production to consumption (I) (group 4).
- Type of ecological footprint of foods sold at UBC food outlets (GP) (group 4).

Summary of Findings

Group 2's Proposed Research Design: Identifying UBC Customer Perceptions Regarding the Price of Food at UBC

Central Research Questions	• What are the "perceptions of UBC customers regarding the price of food at UBC?" • What are current and potential levels of support for sustainable food products at UBC food outlets? • How can the" "full" costs and benefits with respect to the entire cycle of food production, packaging, transportation, marketing, distribution, and waste disposal" be incorporated into food prices at UBC?
Research Rationale	• Aid in providing UBC food providers with valuable "insight into the economic feasibility of shifting to more sustainable food products and practices". • Once customer perceptions have been identified and evaluated, "more sustainable practices can be adapted according to demand for them". • Ideally will aid in "moving the UBC food system towards sustainability".
Sampling Frame	• Random sample of UBC students, staff, faculty and residents.
Instruments Of Data Collection	• A survey should be distributed to assess customers purchasing behavior and their perceptions of food variety; current prices of food, willingness to support and pay for increases in variety and nutritious foods, and locally and environmentally sound produced foods. See **Appendix F** for group 2's Price Perception Questionnaire. • A contingent valuation survey should be distributed to assess customer willingness to pay for locally and/or environmentally sound produced food products. See **Appendix F** for group 2's Contingent Valuation Survey. • Face-to-face interviews should be conducted with key informants from UBC Food Services and AMS Food and Beverage Services. Interview questions should determine what food products are currently the least and the most profitable, distributor information, food origins, and level of support to sell local food products. See **Appendix F** for group 2's Interview Guide.
Timeline	• **Fall 2004:** AGSC 450 students should: o Administer the Price Perception Questionnaire and the Contingent Valuation Survey. • **Spring 2005:** AGSC 450 students should: o "Compile the results obtained from the questionnaire and the surveys" o Conduct interviews with appropriate personal from both AMS Food and Beverage Services and UBC Food Services, using the Interview Guide o Analyze and interpret data obtained from interviews, questionnaires and surveys. o Formulate specific recommendations based upon the results of the research, and communicate them with UBC Food Services and AMS Food and Beverage Services. o Determine future directions for research based upon the research results. • **2005-2006:** o Recommendations from 2005 should be implemented.

	o "AGSC students should continue to monitor the effectiveness and the feasibility of these recommendations".
Beneficiaries	• **<u>UBC Food Providers (AMS Food and Beverage Services and UBC Food Services:</u>** o Determining the economic feasibility of shifting purchasing practices to include more locally and sustainably produced food products, will aid in guiding the "future decision making processes of the UBC and AMS Food Services in this newly emerging area of interest and minimize the financial risks inherent in implementing unproved products and procedures". • **<u>UBC Students, Residents, Faculty and Staff:</u>** o This research will provide an opportunity for the UBC community to express their opinions regarding what changes they would like to see made in their food system.

(group 2)

<u>Group 3's Proposed Research Design: Identifying UBC Customer Perceptions Regarding the Price of Food at UBC</u>

Central Research Questions	• What are "UBC consumer perceptions of the price of food on campus?" • What are the "economic costs and benefits of pursuing more sustainable food practices at food services?" • What is the level of "potential consumer support for these changes, which may manifest themselves in price changes?"
Research Rationale	• Aid in identifying the "costs and benefits of developing a sustainable food system, and whether the public will support these changes". • If increases in local food purchasing is deemed as desirable, with implementation of these practices the local "economy would be strengthened because monetary funds are recycled back into the local food system" • In a 2001 study, it was "estimated that BC growers could produce the quantity of food needed for UBC for 6 months of the year, with peak months being May through September" (Brown, in group 3). Thus, this research will aid in identifying the economic viability of purchasing this estimated availability of local foods. • Aid in demonstrating whether a need exists for increased UBC community education regarding the concept of sustainability, sustainability initiatives and the UBC Farm.
Sampling Frame	• Sample of 1st and 2nd year residence students • Random sample of patrons at all UBC food outlet locations
Methods	• Price analysis should be conducted comparing the cost of local versus non-local foods. Food distributors for UBC food providers should be asked to collect information about their products concerning product origin and price, and hold it in their database for at least a one year period (currently, they only keep this information for 2 months before discarding) to be analyzed by the 2005 AGSC 450 class. Benefits for the distributor would include the potential for them to use this origin and price information for marketing their products. o UBC food providers need to be consulted regarding what products they sell are of the highest demand. o A secondary analysis, using the BC Ministry of Health "BC Foods: A Rainbow of Choices" (2004), should be used as a complimentary cross reference to determine the availability of BC products that are grown in BC on a large scale. • Price perceptions of nutritious foods on campus can be determined by conducting a comparative analysis of the monthly cost of nutritious foods for students living in UBC residences, with the cost of a Healthy Food Basket. According to the BC Ministry of Advanced Education, the cost of a Healthy Food Basket for a single student living away from home is a maximum of $200 for these food purchases (2004). o Similar foods need to be chosen from the Healthy Food Basket and meal options from student residence cafeterias; then prices need to be identified. Once meals are chosen, a table can be created to indicate differences in price. After differences in price are determined, 2 factors should be taken into

	consideration when interpreting the findings: **(I)** Because Food Services are providing food for so many people, they are able to achieve economies of scale, meaning their costs are less then if an individual was shopping for only one person, [and] **(2)** UBC Food Services provides an extra service to consumers in that the food is already made. As this is a time saving device, it reduces the customers time cost, but will result in a price increase. (group 3)
Instruments Of Data Collection	• A survey should be distributed to assess "consumers' perceptions of current food prices at UBC, knowledge about sustainability and food practices on campus", and willingness to support and/or pay more for local and sustainably produced foods. o The survey should initially be administered to students living in UBC residences, and in following years expanded to include general patrons at various UBC food outlets. Surveys should be distributed at least every few years, because this will provide UBC food providers with a "way of continually evaluating current perceptions of the food system, as well as, identifying areas that can possibly be pursued". See **Appendix F** for group 3's survey. o Focus groups should also be conducted with students from residences.
Timeline	• **Summer 2004-Spring 2006:** AGSC 450 students should: o Carry out the price comparative analysis of local versus non-local foods. • **Spring 2005-Spring 2006:** AGSC 450 students should: o Conduct the comparative analysis between the cost of the Healthy Food Basket and meals served at UBC student residences, and upon completion, the analysis can be expanded to include the general community. o Distribute surveys to students living in UBC residences, and upon completion, distribute surveys to general patrons of UBC food outlets.
Stakeholders	• **Consumer Groups:** o Includes UBC students, faculty, staff and visitors. • **Campus Food Providers:** o Includes management and retail employees. • **Off-Campus Food Providers:** o Includes food outlets located in close proximity to campus. o The "sustainability of the UBC food system would have some bearing on the success of off-campus food sources because if customers are more inclined to eat off campus, it speaks to the viability of the on campus food system". • **Food Distributors:** o Includes both large scale wholesale distributors who cater directly to UBC food providers, and off campus small scale retail distributors who cater directly to individual consumers. o By "providing the choice of buying food staples as opposed to the ready made food that is almost the sole option on campus, will appeal to some customers [because] groceries bear a lower expense burden and provide the freedom to prepare meals independently". • **Food Producers:** o Includes both local and global food producers who supply UBC food providers with food products. o Making "decisions to buy local could impact the livelihoods of many farmers"

(group 3)

Group 4's Proposed Research Design: Identifying UBC Customer Perceptions Regarding the Price of Food at UBC

Central	• What are the "perceptions of UBC customers regarding the price of food?"

Research Questions	• What are the "ecological, economic, and social costs and benefits of adopting sustainable food practices at UBC?" • How can these costs and benefits be established in the food sold at UBC?
Research Rationale	• Aid in determining levels of "current and potential customer support for sustainable food products, as well as, understand customer behavior with respect to the pricing of sustainable food products" • Aid UBC food providers in assessing the desirability and economic feasibility of adopting these practices • Aid in "increasing customer satisfaction; meeting cultural and social needs and wants" • Aid in increasing customer awareness regarding food system and sustainability issues • Aid in "decreasing ecological impact/footprint on the UBC food system"
Sampling Frame	• Random sample of UBC residents and non-residents
Instruments Of Data Collection	• A survey should be distributed to assess UBC customer perceptions of current food prices at UBC and willingness to support and pay more for sustainable food products. See **Appendix F** for group 4's survey. • An economic cost benefit analysis should be conducted to assess the economic costs and benefits if UBC Food Services and AMS Food and Beverage Services adopted more sustainable food purchasing policies. Specifically, the costs and benefits of purchasing foods from a local farmer versus indirectly through a distributor needs to be assessed. An initial outline of the costs and benefits associated with each policy is provided in **Appendix E**. • A cost benefit analysis should be conducted to assess the social, economic and ecological costs and benefits if UBC Food Services and AMS Food and Beverage Services adopted more sustainable food practices. Specifically, the costs and benefits of adopting the five practices: "(1) Developing a campus wide education program concerning sustainable food products, (2) Increasing the procurement of food produced in an ecologically sound manner, (3) Increasing the use of locally grown food, (4) Decreasing food packaging, and (5) Increasing pre and post-consumer recycling and composting, and encouraging the use of reusable containers and utensils". An initial outline of the economic, social, and ecological costs and benefits associated with each practice is provided in **Appendix E**.
Timeline	• **Spring 2005:** AGSC 450 students should: o "Continue refining the data collection instruments, the questionnaires and surveys, in an effort to increase the clarity and ease of delivery". o Conduct primary research using the preliminary economic cost and benefit analysis of purchasing policies, as well as, the preliminary social, economic and ecological cost and benefit analysis of adopting the 5 practices (referred to in the above Instruments of Data Collection section). o Conduct a Commodity Chain Analysis (CCA) to "determine the appropriate prices required for more sustainable food items to be offered on the AMS and UBC Food Service menus" • **Spring 2006:** AGSC 450 students should: o Conduct focus groups and distribute questionnaires beginning with the FAS and Totem and Vanier Residences (where all meals are provided by UBC Food Services). o Analyze and interpret data obtained from initial focus groups and questionnaires o Revise instruments of data collection, if deemed needed. o Conduct focus groups and distribute questionnaires to a randomly selected sample of the UBC population. o Analyze and interpret data obtained from the focus groups and questionnaires. o Further develop food purchasing sustainability initiatives based upon

	findings.
Beneficiaries	• **<u>UBC Food Providers (AMS Food and Beverage Services and UBC Food Services):</u>** o In the short term, adopting more sustainable food practices may result in higher food prices and may translate into decreased sales and revenue, with increased customer awareness about the benefits of supporting more sustainable food products, increased sales and revenue may occur in the long term, offsetting potential initial losses. o By adopting more sustainable food practices, UBC food providers will decrease the size of their ecological footprint on the food system. • **<u>Local Farmers:</u>** o Local food producers such as UBC Farm will experience increased sales ad revenue through increases in local food procurement practices by UBC food providers. • **<u>UBC Community (including non-residents and campus residents and faculty):</u>** o Increase in awareness and knowledge regarding the benefits of purchasing sustainable food products. o Once UBC community knowledge increases about these benefits, they will likely desire the opportunity to support "food production methods that are more sensitive to the Earth and its inhabitants". o Increases in customer awareness and knowledge about these benefits may influence the "ways they might incorporate this new found knowledge outside the boundaries of the UBC food system".

(group 4)

Recommendations

<u>UBC Food Providers</u>:

- If findings are favorable that local foods are both desirable and feasible, both UBC Food Services and AMS Food and Beverage Services form contractual agreements with their food distributors to supply them with local foods when readily available (group 3).

<u>Campus Sustainability Office</u>:

- Provide "support for community-orientated projects such as the student run Agora, the Food Co-op, and the UBC Farm" (group 3).
- "Advertise the opportunities available for students to participate in sustainability measures" such as activities at the UBC Farm and the composting program (group 3).
- Attempt to "make a sustainability course a mandatory component of all faculties at UBC" (group 3).

<u>Overview of Summer 2004 Scenario #1</u>: Re-Localization of UBC's Food System

<u>Scenario 1a) Desirability of Re-Localization</u>

Summary of Specific Problem Definition

If UBC food providers decide to buy and sell more locally produced products, before they make this commitment they need to know if and what level of demand there is among UBC community members for local foods. Not only are we unsure whether or not demand exists for local food, we do not know how much and what proportion of the UBC community is willing to pay for local products.

Research Question:

To develop a research methodology to determine whether or not and to what extent UBC's population is willing to by local food (i.e. level of demand and interest), and whether or not UBC's population is willing to pay more for local food.

Summary of Findings

- Group 1 developed a semi-structured questionnaire that addresses the desirability of the UBC community to purchase local food, and their willingness to pay for local food products. See **Appendix F** for group 1's questionnaire.

Summary of Proposed Research Methodology

Timeline:

- January – April 2005

Sampling Frame:

- All UBC Students, residents, staff and faculty, including the "residential area north of Westbrook Mall and east of University Boulevard".

Sampling Procedures:

- Random stratified sampling
  - Stratum: staff, faculty and students

- Contingent Valuation method is used in the questionnaire "to determine whether or not UBC's population values having access to local food, and how much they this in monetary terms" (group 1).

Methods of administration:

- AGSC 450 Students should administer a paper questionnaire with the possible staff of CSO and AGSC
- A mixture of times during the day is when questionnaires should be administered to capture as many different demographics on campus as possible. However, the majority of questionnaires should be distributed at lunch starting at 11:30 or noon.

Summary of Recommendations

AGSC 450 Class:

- To conduct two pilot tests, one before and one after the launching of a benefits of a local food educational campaign. This will provide the opportunity to (1) Document the impact of education awareness; (2) Demonstrate the level of need for an educational campaign; (3) Aid in tailoring an education campaign towards specific information gaps and demographic needs (group 1).

- Future data collectors "conduct all aspects of data collection in the spirit of the collaborative action research concept, remembering that questionnaire respondents are not just "subjects", but rather are "collaborators" in the UBCFSP and beneficiaries of a future sustainable UBC food system" (group 1).

- Results of a survey are communicated with the UBC community, feedback regarding content and/or process is welcomed and if possible recorded and considered in the interpretation of findings" (group 1).

- Students need to reach a common consensus regarding where the UBC system boundaries are and/or should be. Specifically, boundaries of the system need to be established "related to the private residential area adjacent to university lands, east of Westbrook Mall, and north of University Boulevard" (group 1).

SCENARIO 1B) FEASIBILITY OF RE-LOCALIZATION

Group 2: Summary of Specific Problem Definition

If a consumer demand is evident in the UBC community to purchase locally produced food, UBC food providers do not possess enough information to confidently shift their current food procurement practices to more local purchasing. They do not know if it is ecologically and/or economically feasible to shift their current food purchasing practices.

Group 2: Summary of Research Methodology

Research Question:

To investigate the realistic opportunities for local food procurement given the factors governing UBC's food procurement requirements such as volume, seasonality, and price. To determine what types of foods local producers and distributors can deliver reliably and consistently, while meeting needed quantities and quality standards, as well as assuring economic viability.

Methodology:

Based upon group 17's Spring 2004's proposed methodology, group 2 conducted a quantitative feasibility analysis investigating the feasibility of re-localizing UBC's food system. Group 17 argued that re-localization is very ecologically feasible if 75-100% of products *can* be obtained from a local source. The feasibility analysis involved analyzing secondary sources (distributor product lists, UBC Food Services and AMS Food and Beverage Services purchase sheets, BC Agricultural lists) according to availability (quantity, seasonality, local and non-local products) and accessibility (distributor price comparisons). Group 2 examined BC Agricultural lists to determine seasonal availability of BC produce, AMS and UBC Food Service purchasing sheets to determine prices of local and non-local produce purchased and total number of these commodities by type purchased, Van-Whole Produce LTD. and Small Potatoes Urban Delivery Price (SPUD) lists to conduct a price comparison of both local and non-local produce currently purchased by UBC Food Services from Allied Food Services, and AMS Food and Beverage Services Central Food Co. Also, informal face-to-face and telephone interviews were conducted with representatives from AMS Food and Beverage Services and UBC Food Services.

Group 2: Summary of Findings

1. Both UBC Food Services and AMS Food and Beverage Services:
A total of 83% of produce items currently purchased *can* be obtained from a BC source (group 2).
Between the months of July-October, 79-95% of these commodities are available locally; where as only 30-50% of these commodities are available locally in all other months (group 2).
In the month of June, 23-28% of local produce is purchased, however 50% of total produce commodities purchased could be purchased in the month of June (group 2)
46% of produce ordered is available cheaper at Allied Food Services, while 54% are available cheaper at Central Foods (group 2)
Although Allied Food Services sells produce items analyzed at a slightly higher price than Central foods, Central Foods has more variety of local foods available (group 2)
All locally produced organic produce from Small Potatoes Urban Delivery (SPUD) are significantly more expensive than currently purchased local non-organic produce items (group 2).

2. UBC Food Services (UBCFS)	AMS Food & Beverage Services (AMSFB)
28% of produce currently purchased from Allied Food Services (AFS) is obtained from a local source.	23% of produce currently purchased from Central Foods Co. (CFC) is obtained from a local source.
15% (18/118) of commodities currently purchased from AFS are available at a lower price at Van-Whole Produce Ltd.	16% (18/112) of commodities currently purchased from CFC area available at a lower price at Van-Whole Produce Ltd.
7 of these 18 commodities are purchased non-locally at a higher price from AFS.	5 of these 18 commodities are purchased non-locally at a higher price from CFC
11 out of these 18 commodities are already purchased locally by UBCFS, but can be found cheaper from Van-Whole Produce Ltd.	13 out of these 18 commodities are already purchased locally by AMSFB, but can be found at a lower price from Van-Whole Produce Ltd.

In sum, group 2 found that:

(1) "re-localizing fresh produce ay UBC is very ecologically feasible since 83% of the produce ordered by UBCFS and AMSFBS can be obtained from a local source"

(2) Between the period of July-October, BC has the most local produce available for purchasing, and thus these are key months where UBC Food providers could increase their local produce purchasing.

(3) Some local commodities that are currently purchased by UBC food providers from Central Food Co and Allied Food Services can be found at lower prices at Van-Whole Produce Ltd. (group 2).

Summary of Recommendations

AGSC 450 Class:

- Students expand the comparison of commodity price lists used by UBC food providers with more alternative distributors and commodities (i.e. meat, dairy, eggs, and processed items) (group 2).
- Students should investigate the total amount of money spent on local versus non-local items by UBC food providers (group 2).
- Students follow up on Group 17 Spring 2004's feasibility analysis to determine the *volume* of products locally available that would meet UBC food providers needs (group 2).
- Students determine the seasonal availability of items that our group was unable to find (group 2).
- During the further development of a questionnaire that addresses the desirability among UBC consumers to purchase local food, that a question be incorporated that addresses the desirability to purchase organic foods (group 2).

UBC Food Providers:

- Both UBC Food Services and AMS Food and Beverage Services purchase more local produce when availability of these products is at their peak between the months of July – August (group 2).

- Both UBC Food Services and AMS Food and Beverage Services purchase produce listed in Appendix E because these products can be purchased at a lower price than both their current distributors (AMSFB: Central Foods Co. and UBCFS: Allied Food Services) and from a local source at Van-Whole Produce Ltd. (group 2)

Limitations:

- Possible inaccurate prices obtained for some analyzed produce items from distributors because of differences in units used across price lists.
- Besides analyzing UBC Food providers current distributors, only 2 other distributors were used for comparison (Van-Whole Produce Ltd. and SPUD).
- Only fruits and vegetables were analyzed for seasonal availability and price comparisons, and some produce items the group could not find any corresponding available data.

Group 3: Summary of Specific Problem Definition

Increasing the feasibility of re-localizing UBC's food system requires that UBC consumers be willing to purchase local foods. However, it is believed by some that most UBC community members have a low level of knowledge about local foods, and awareness about the benefits of eating, supporting and buying local.

Research Question:

In the context of a campaign for re-localization, develop an education piece(s) (i.e. posters, pamphlets, online campus resources, etc.) that would enhance the feasibility of re-localizing UBC's food system, as well as a corresponding research process of addressing how, by/with whom, when, and the where of launching an educational piece(s).

Group 3: Summary of Findings

Educational Piece:

- Developed a "table ad" or pamphlet to act as an education piece:
    - Made "using heavy card stock, [and is] a triangular, vertically orientated 3 dimensional frame"
    - A list of the benefits of local foods (nutrition, transparency, economy, farming environment, transportation), are displayed on 2 sides of the pamphlet
    - On the third side a campaign slogan: "Food From Within" is displayed with a description of the corresponding broader educational campaign. "Food From Within" was chosen to serve as a slogan because "Food is not just the food we need to eat. It can be the food for our souls or minds as well, and feel that those types of "food" are just as important to the UBCFSP, our role in it, and the idea of a sustainable food system as actual, physical food is". Finally, a list of contact information, and a brief description of the UBCFSP is displayed on the back of the pamphlet.
    - Underneath the campaign slogan is a logo. The logo is comprised: (1) two people holding hands, (2) arms forming a heart, and (3) a plant growing from within. Rationale for choice

of logo is that the "2 people symbolize the collaborative nature of the project, aspects of both social and economic sustainability, and the importance of people living in the future". The heart "represents the role that culture and community have in the success of a sustainable food system". The "plant, growing from within the heart, symbolizes the natural and localized character of a sustainable food system" (group 3)

- See **Appendix G** to view Group 3's logo.

Group 3: Summary of Proposed Research Methodology

What?

- 3 Dimensional Pamphlets listing the benefits of local food, a corresponding slogan ("Food From Within"), and logo
- Along with pamphlets, posters advertising local foods using a "local food item of the month", slogan heading could be displayed around food outlets

Where?

- Pamphlets should be displayed on table tops in busy dining areas (I.e. SUB, 99 Chairs)
- Posters should be displayed around food service outlets

How?

- Students ask UBC Food Providers permission to display pamphlets on campus dining tables and post posters around food outlets

When?

- Final refinement of table ads, logo and slogan, and any other accompanying educational piece such as a poster should be completed before Spring 2005 AGSC 450 class, so the educational campaign commence
-

Budget?

- A total of 1000 table ads can be produced for approximately $150 plus labor and time for refinement, folding and table placement (group 3)

Group 3: Summary of Recommendations

Campus Sustainability Office, UBC Food Services, AMS Food and Beverage Services, and Faculty of Agricultural Science:

That a student be hired to further refine the educational piece aimed at enhancing the feasibility of re-localization. Specifically the student should:

1. Establish the final number of table ads to be produced and distributed.
2. Further refine group 3's logo, content on table ad, and/or explore other possible designs and formats.
3. Decide type of physical material to be used for the table ad.
4. Explore further the possibility of creating a multi-language version of the educational pieces.
5. Decide the appropriate quantity of information that should be place on the table ad.
6. Explore the possibility of including or relating information on the educational pieces to food related organizations on campus such as UBC Farm and the Food Co-op (group3).

AGSC 450 Class:

- A "grassroots, student-based initiative has to be developed through AGSC 450 to ensure that this effort to localize our food system is maintained and our efforts thus far are not lost…even if its head should be cut off" (group 3).

- Students working on educational pieces should "consult with other colleagues, research examples of different advertising and graphic design styles and methods (particularly those of non-profits and other low-budget advertisers) (group 3).

UBCFSP Partnership:

- UBCFSP partners be expanded to include the "Graduate Student Society (which operates its own food services), independent food providers in the Village, residents in the University Endowment Lands, First Nation peoples with claims on land occupied by the University, and other student environmental and social groups" (group 3).
- Stronger connections are established with UBC Food Services and AMS Food and Beverage Services (group 3).

Overview of Summer 2004 Scenario #2: UBC Farm: To Create a New Production Plan for UBC Farm

Summary of Specific Problem Definition

The UBC Farm is not financially viable; it is characterized by operating costs that exceed its actual revenue. The Farm could increase its revenue if it establishes stronger market relationships with UBC food providers, but numerous barriers currently exist that prevent the formation of these relationships. The UBC Farm is also facing threats of displacement posed by the possibility of future housing development plans in 2012.

Research Question:

How can we "transform the UBC Farm into a financially viable, academically integrated, agroecological model farm that enhances the local food system, builds social capital, and functions as the centerpiece of sustainability at the University of British Columbia" (group 4).

Research Methodology

- Conducted a literature review using both primary sources (Farm data) and secondary sources (former AGSC 450 papers and general outside sources)

- Held face-to face consultations with UBC Farm Production Manager and Program Coordinator "to evaluate current production and productivity at the farm" (group 4)

- Held interviews with representatives from both UBC Food Services and AMS Food and Beverage Services "to gauge the possibility of strengthening both market and public relations" " (group 4)

Summary of Findings

- Based upon primary and secondary sources, consultations and interviews with representatives from UBC food providers and UBC Farm, Group 4 proposed "that activities at UBC Farm be divided into the three areas of the Market Garden, Education and Outreach, and Agroecological Research and, following the model at UC Santa Cruz, that each area be made an economically self-sustaining program".
- In the table below is a summary of a description of the activities that should be held in the three areas, a rationale for the activities, and implementation techniques:

Area	Description of activities	Rationale	Implementation Techniques
Market Garden	➢ UBC Farm implement a Community Supported Agriculture (CSA) Program, whereby community members purchase a share at the beginning of the growing season, and in turn receive a box of assorted produce on a weekly basis ➢ Shares could be sold to students, faculty and staff at UBC ➢ Shares could be sold to UBC food providers ➢ Shares could be sold to Student Associations (i.e. AGUS, LASA)	➢ Increase revenue and financial viability or the UBC Farm by providing a guaranteed market share paid upfront ➢ Allow more flexibility in ability to purchase inputs and increase labor ➢ Allow for risk sharing ➢ Aid in increasing community awareness and involvement in the Farm ➢ Aid in increasing consumers with producers ➢ Allow for increased job security ➢ Aid in decreasing harvest waste	➢ Shares sold to AMS Beverage Service redistributed for r outlets ➢ Shares sold to Stud Associations coul redistributed throu carts or on table i spaces ➢ Individual shares co both UBC commu and broader com would be availabl the Farm
Education & Outreach	➢ Increase education and outreach programs already in place at the Farm ➢ Increase the level of participation among community members ➢ Offer new "experiential learning programs" already in place ➢ Begin to increase the role of the UBC Farm across curriculum offered by all departments (i.e. Landscape and Architecture, Social Sciences, School of Education, Commerce) ➢ Begin partnerships between the UBC Farm and the new UBC-Okanagan campus ➢ UBC Farm could be integrates into UBC Student Orientation days and Imagine UBC ➢ Closer relationships could be formed between AMS and UBC Farm ➢ In the GVRD School system UBC Farm staff or volunteers could go to local schools and perform guest lectures about the Farm to increase environmental education ➢ In the GVRD School system, "reciprocal agreements could be made with UBC Farm educational staff to coordinate year-long school programs for multiple visits of school groups to	➢ Aid in enhancing UBC's leadership role in education ➢ Aid in promoting a "much more sustainable local food system by empowering local community members, promoting greater food democracy and closing the gap between producer and consumer" ➢ Increasing the overall level of participation in the farm can aid in increasing UBC Farm production and revenue ➢ Partnerships with new UBC Okanagan campus "could facilitate intra-campus collaboration on sustainable agriculture projects"	➢ A full-time educatio coordinator positi instated to coordi community involv advertise educati and outreach offe with increase yea operations requir ➢ Funding for the expa creation of new e outreach program obtained from fee through Farm wo classes and tuitio

	the Farm" ➢ Could be used as a site to share with local gardeners Agroecological principles of current practices		
Agroecological Research	➢ An Agroecological research centre focused on conducting collaborative research with "local organic farmers and producers, community gardeners, agribusiness and government agencies such as the BC Ministry of Agriculture Food and Fisheries"	➢ Integration of production and policy research would provide for integrated learning experiences that would set the centre off as the "most innovative arm of the UBC Farm", and "distinguish UBC among research institutions in Canada" ➢ Provide valuable learning opportunities to share interdisciplinary approaches to sustainability food systems	➢ Financing of the Fa derived from publ research grants, a partnerships with international instit

(group 4)

Summary of Recommendations

AGSC 450 Class:

- Students conduct further market research and productivity analysis, using the following guiding questions: "What type of production can this ecosystem support? What kind of products could enhance economic viability and agroecological diversity?" (group 4).
- Students should "develop a business plan outlining the steps required in order to expand production in the market garden, supply UBC/AMS Food Services demand and cover operating costs" (group 4).
- Students should conduct a bio-diversity mapping on the UBC Farm (group 4).
- Students should "conduct demographic and productive-type (organic, conventional, other alternative forms?) assessment of local farming communities to develop better understanding of local interest in agricultural extension services at UBC among farming community" (group 4).

UBC Farm:

- Develop Contracts between the UBC Farm and AMS Food & Beverage Services to implement a CSA program (group 3).
- A referendum should be proposed "to increase AMS student fees as a mechanism to finance a large portion of the proposed UBC Farm CSA program" (group 3).

- Staffing needs at the UBC Farm should be reevaluated “to coordinate internal and external educational and outreach programs and develop job description, roles and responsibilities” (group 4).

- A circulation of an UBC bus route should be proposed to include a bus stop at UBC Farm. (group 4).

- Alternative names should be explored for the UBC Farm that “better reflect existing and proposed programs, vision and mission” (group 4).

- An UBC Farm mission should be created that is “parallel to UBC mission to clearly indicate complimentary nature of institutions” (group 4).

- A list of key core messages should be developed that are “based on UBC Farm vision and mission to facilitate a pro-active, positive, consistent and coordinated communications strategy” (group 4).

- Explore the possibility of a “permanent charter of the UBC Farm Council as a multi-stakeholder governing board with strategic decision-making and fundraising responsibilities” (group 4).

- A meeting should be held that would “bring together diverse interest groups to discuss multi-institutional (international University collaboration), public- and private-sector partnerships with the UBC Farm” (group 4).

Faculty of Agricultural Sciences(FAS):

- FAS should facilitate an “inter-faculty retreat at UBC Farm to explore integrated curriculum” (group 4).

- FAS should “capitalize on current “Faculty Story” discussions to clearly define UBC Farm role within UBC academic community” (group 4).

OVERVIEW OF STRENGTHS AND WEAKNESSES

General strengths and weaknesses of the UBCFSP are listed below for *both* the Spring and Summer AGSC 450 course sections. These strengths and weaknesses are based upon AGSC 450 teaching team and informal student comments and reflections, that I took note of either during my position as a TA during both of the course sections or shortly after course completion.

Strengths and Weaknesses of 2004 Spring UBCFSP

Strengths:

Student Energy and Devotion:

Students were assigned numerous and complex tasks to complete in their scenario. At first, most students felt overwhelmed by the immensity of work being asked of them, but in the end their energy and devotion to completing their assignment and moving the project forward, I think surprised them and the teaching team.

Class Finale:

On the last day of classes, a feast was held to celebrate the completion of the class and the term project. Many members of the class and teaching team as well as members from AMS Food and Beverage Services and UBC Food Services put a lot of effort into organizing and preparing for the event. The feast was success with Agora packed full with AGSC 450 students, the teaching team, and representatives from UBC food providers, as well as with other students, staff and instructors from the faculty.

Richness of ideas:

Overall, a lot of unique and creative ideas emerged in group's work, especially taking into consideration the complexity of tasks that groups were assigned. In particular, many ideas for educational campaigns, labeling systems, tracking food miles, methods to conduct feasibility of re-localization analysis's, and recommendations were at large quite exceptional.

Weaknesses:

Ambiguity of UBC Food System Boundaries and concept of "Local":

Overall, much ambiguity existed within the reports regarding the actual physical as well as conceptual boundaries of the UBC food system making it difficult to compare different group findings. For example, some groups drew physical boundaries of the UBC food system to include anything within the west of University Boulevard, others argued for the inclusion of east of the Boulevard extending to Blanca – to name a few inconsistencies. Similarly, the definition of local was conceptualized quite differently by many of the groups. For example, some groups defined local by political boundaries (BC Border), others by bioregional boundaries (West coast including Washington), again making it difficult to compare different group findings.

Technology failings:

On the last day of classes, where the 4 best groups had to present their report and websites, major technology disruptions occurred. As a result, many groups were unable to access the internet, and thus were unable to present their websites, affecting the overall quality of their ability to communicate their

findings (never-mind the heartbreak of being unable to show all the time & energy spent on preparing their websites!).

Absence of common language:

Much ambiguity became evident to me in group papers regarding both the meaning and application of indicators and attributes. Specifically, the teaching team did not communicate adequately enough the difference between an indicator (a quantifiable measurement) and an attribute (a qualitative characteristic). Through reading past summary of findings, I believe this miscommunication has stemmed since the development of models, whereby indicators and attributes were used inconsistently and interchangeably.

Length of papers:

The length of the papers was supposed to be 15 pages plus appendices, bibliography, abstract, tables, and table of contents. However, many of the papers included a lot of other forms of content (such as their value assumptions) in the appendices, making many of the papers very long (up to 50 pages), difficult to read, and a large amount of information to synthesize (approx. 700 pages of data).

Strengths and Weaknesses of 2004 Summer UBCFSP

Strengths:

Student and Teaching Team Enthusiasm:

Overall, students felt that doing the project was a rewarding experience, one that was interesting and creative, while at the same time very valuable (demand for their work among UBCFSP stakeholders) and practical. The teaching team felt inspired by the end of the course (we were very concerned that the students would not meet their learning objectives (the interconnectedness of global issues with local) and would have difficulty finishing the project on time. But in the last week of class the students surprised us with how much they were able to accomplish and learn, especially in such a short period of time.

Class Size:

The Summer course consisted of only 12 students, which aided in the overall clarity of communication between the teaching team and students. The teaching team was also able to work more closely with each group, enabling us to provide a lot of advice with directions of tasks. Likewise, it enabled us to check in personally at every stage of the project with groups to see how they actually felt about what they were doing.

Weaknesses:

Time:

The brevity of the Summer course (3 weeks) greatly impinged on the ability of students to deeply reflect on complex issues and ability to maximize attainment of course learning objectives. This course is a mandatory capstone course, and as such has numerous and diverse material and learning objectives to address. Students felt that they could not reflect on the material long enough, and place as much effort as they desired into their final project. Overall, students wanted more time (5 week course at the least) that they felt was necessary to serve justice to their project.

Problem in problem definitions:

Overall, in groups problem definition, they argued that UBC is a microcosm of the global food system, highlighting similarities between the local and the global, but neglected to highlight important specificities. Important differences that needed to be mentioned were differences in UBC's food system when compared to the global food system such as: lack of food producers on campus, the above average level of income among UBC community members, the small percentage of extreme hunger and homelessness issues.

Brevity of value assumptions:

The majority of groups only provided a brief section on their value assumptions and this affected their approach to their Scenario. The teaching team felt that students did not "get" the importance of identifying personal value assumptions and their importance.

Final Reflections of Summary of Findings

In short, summarizing and especially integrating findings of 24 groups of students, working on often different tasks in 1 of 10 different scenarios, and 3 sub scenarios was a very difficult undertaking. The quality of group work varied immensely by the specific task they addressed and the overall quality of the paper. I tried my best to honor the language, ideas, findings, proposed methods of data collection, and recommendations presented by each group, as well as give justice to each groups' voice. I apologize if I have over-generalized and/or misinterpreted any group's words, ideas or findings, and if I left important elements from your work out of this report that you felt was vital to include and to moving the project ahead.

Overall, through all the extra agony that participating in a Community Based Action Research Project involves (versus a more straightforward 'conventional' quantitative research project) I found this experience stimulating and rewarding. The amount of enthusiasm and dedication shown by the AGSC 450 teaching team and students, and all other food system stakeholders have shown towards this project, is nothing short of profound. Even through periods of great ambiguity in the project in determining what it is exactly we want to achieve and in how we want to achieve it, by the end of both terms, I think the eyes of each stakeholder was shining.

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APPENDIX A

UBC FOOD SYSTEM COLLABORATIVE PROJECT III
AGSC 450: WINTER 2004
GENERAL TASK FOR ALL WORKING TEAMS

As indicated above, your 2003 colleagues were given the ***General Task*** of investigating or designing (if there was not already one that could be adapted or applied) a ***model to assess the state of UBC's food system* sustainability** (socially, ecologically, economically) on a continuum ranging from "Unsustainable" to "Sustainable". They also had to identify appropriate sustainability indicators to evaluate the overall sustainability of the food system at UBC.

The 20 papers and websites from 2003 can be found on the course website in the section "UBCFSS 2003" (within "UBC Food System Study 2002-2006"). Four of these models were chosen by the teaching team and are displayed separately: go to "Four Best UBCFSS 2003 Papers and Websites.***" (The course website is at http://www.mywebct.ubc.ca/. You need to login into WebCT using your username and password.)***

The list of ***General Tasks*** has been identified over the last two years of the project as key to forming the information base needed to assess the sustainability of the UBC Food System and guide the transition to a more sustainable food system. Your working team is expected to carry out all these general tasks and work on a specific ***scenario or case study*** *(described following general tasks list)*.

The General Tasks:

1. From the 2003 working teams' projects, choose the best model for the sustainability of the UBC Food System. We suggest that you concentrate on the "Four Best UBCFSS 2003 Papers and Websites;" however, you may wish to browse through all the 2003 papers and websites and choose another one. Provide a rationale for your choice.

2. Using this model, and adapting it as necessary, briefly assess the problem definition provided by your colleagues last year in your chosen model. If needed, critique and modify that problem definition.

3. Assess whether the criteria and indicators of sustainability presented in your chosen model can be applied to locate the UBC Food System in the 'Sustainable-Unsustainable" continuum.

4. Identify at least three sustainability indicators (one economic, one ecological and one social) to assess the contribution of the Scenario assigned to your group to the overall sustainability of the UBC Food System. Your choice of indicators should be consistent with the model for the sustainability of the UBC Food System chosen by your team; the indicators may be ones already identified in 2003, or if necessary you may identify or develop more appropriate indicators.

5. Design the instruments (e.g. interview guide or questionnaire or other data gathering procedures) to collect the data needed to measure the indicators selected for your assigned scenario.

6. Prepare a report to be professionally presented in both written and verbal forms to the relevant client or audience for your assigned scenario (e.g. Agriculture Undergraduate Society, the Faculty of Agricultural Sciences, UBC Food Services management and staff, AMS Food Services management and staff, Campus Sustainability Office, UBC Farm, etc.). The report will make recommendations for further research.

SCENARIOS 2004

This section will provide you and your team with a selection of ***Scenarios*** that emerged from the two previous years of the study and consultations with the UBC Campus Sustainability Office, UBC Food Services, AMS Food Services, the UBC Farm and the Agricultural Undergraduate Society (AGUS).

In addition to the ***General Tasks*** for the whole class, your working team will be assigned ***one of these scenarios*:**

please refer to the instructions for this process described in the box below.

Scenario # 1: *What would a student-run Agora food service operation integrated with the Faculty's curriculum look like?*

Problem: Agora, a food service outlet located on the lower level of the MacMillan Building, has had a history of low profitability and limited service in terms of operating hours and food variety, diversity and selection. The dissatisfaction of UBC Food Services and its patrons finally resulted in the closure of the outlet at the end of the 2003 winter session. Students have suggested that Agora become a student-run operation, one that can take advantage of experiential learning opportunities within the context of the new curriculum in the Faculty of Agricultural Sciences. UBC Food Services management and the Agriculture Undergraduate Society have also supported the concept of Agora as a student-run operation with the goal of providing healthy and nutritious food and contributing to a sustainable food system (socially, ecologically and economically) at UBC. Since UBC Food Services closed Agora, the students in our Faculty of Agricultural Sciences have initiated a number of food service and community building activities, including weekly dinners, community dinners, fair-trade coffee sales, and other activities of the like.

General Tasks: As indicated earlier, all working teams must complete the General Tasks (as described above in the section "G*eneral Task for All Working Teams 2004").* In addition, specific tasks are required for your assigned Scenario. ***Identify which of the specific tasks listed below you intend to investigate in 2004 and provide the rationale for these priorities****.* Needless to say, if deemed feasible, your team can decide to address all the tasks listed below.

Specific tasks:

- Describe and assess the economic/business model which currently guides the student-run Agora initiative.
- Assess the operational requirements and limitations resulting from regulatory legislation, logistical restrictions (kitchen design, equipment etc.) and human resource and labor relations issues;
- Create a business plan that addresses the issues identified in the problem definition (sustainability, consumer satisfaction) and the operational requirements listed above. Review, and if necessary, build upon the currently existing business plan developed by students in the Faculty;
- Propose a detailed, well-informed plan for how a student-run Agora will fit into the Faculty's new curriculum and core values;
- Propose a plan for forms of collaboration and possible contractual arrangements with local producers, including UBC Farm;
- Assess the feasibility and desirability of a business/mentor relationship between the new Agora and UBC Food Services;
- Research other universities/colleges as case studies of student-run food operations. Compare these case studies to the situation at UBC and identify key lessons or principles that can guide the Agora initiative;
- Propose the basis for an ongoing, collaborative working relationship between the students of Agricultural Sciences and UBC Food Services, Agriculture Undergraduate Society, UBC Farm staff and the Faculty of Agricultural Sciences (FAS) in the development and implementation of the Agora plan.

Scenario # 2: *Costs of locally produced food: Best Practices for Sustainable Food Procurement*

Problem: There can be significant differences in the prices we pay for food depending on many factors, such as whether we grow the food ourselves, buy pre-prepared food, or buy the ingredients at a farmers' market, local supermarket, big box store or local green grocer. Also, there are many farm management practices and food processor goals that influence the price of food. Some costs we pay for directly at the register in the purchase price, some costs are more indirect (i.e. social and environmental costs that are currently considered "externalities" in food system accounting). As a result of cheap food and energy policies, we typically avoid paying the full price at the register, and instead incur indirect costs at some other time and/or place in seemingly unrelated circumstances. However, a systems perspective shows that we pay both direct and indirect costs. A response to this situation is envisioned in the concept of re-localizing the food system to bring the costs and benefits of food production and processing closer to home. *A commodity chain analysis* is one way to show differences and similarities in costs of food between different production-delivery models.

General Tasks: As indicated earlier, all working teams must complete the General Tasks (as described above in the section "*General Task for All Working Teams 2004").* In addition, specific tasks are required for your assigned Scenario. ***Identify which of the specific tasks listed below you intend to investigate in 2004 and provide the rationale for these priorities.*** Needless to say, if deemed feasible, your team can decide to address all the tasks listed below.

Specific Tasks:

A) TRUE COSTS OF FOOD

- Discuss the issues concerning the true cost of food and the significance of the difference between the costs paid for directly and those paid indirectly;
- Conduct background research on commodity-chain analysis and possibly other approaches to studying or assessing the true costs of food;
- Conduct a commodity chain analysis of a select sample of meals offered by student residence dining facilities;
- Create a meal that your working team would consider a more sustainable alternative to the meals currently offered and conduct a commodity chain analysis of this meal for comparison;
- Prepare and present an educational piece suitable for student learning describing the true costs of food supplied "conventionally" compared to more sustainable alternatives;
- Food Origins: Working with UBC Food Services and AMS Food Services, develop a "true costs" monitoring or labeling system for food used by campus food outlets.

B) FEASABILITY OF THE RE-LOCALIZATION RESPONSE

- Analyze the current procurement practices of food service providers at UBC.
- Discuss the feasibility of a re-localized UBC food system.
  - A) Would it contribute to the goal of a sustainable UBC food system? Why or why not?
  - B) Investigate the realistic opportunities for local food procurement given the factors governing UBC's food procurement requirements such as volume, seasonality, price;
- Compile case studies of university food service purchasing policies that seek to support local sustainable agriculture and encourage ethical practices;
- Food Origins: Working with UBC Food Services and AMS Food Services, develop and implement a protocol for monitoring the percentage of locally grown food used by campus food outlets.
- Prepare and present an educational piece suitable for student learning describing the qualitative differences (if any) between food supplied "locally" and food provided "conventionally".

Scenario # 3: *Food mileage*

Problem: Buyers have come to expect year-round availability of an extensive variety of foodstuffs from many regions of the globe. To make food available on such a large and extensive network, four key developments have taken place within the past fifty years on a global scale: the building and maintenance of a transportation infrastructure with low direct (vs. hidden) user cost; an intensification and extensification of agricultural technology; a widespread commitment to global free trade policy; and, a vertical and horizontal consolidation and centralization of the corporate food system. As a result of these developments, food travels increasingly long distances before it reaches a person's plate: increased food miles have been associated with decreased nutritional value of food and environmental impacts.

General Tasks: As indicated earlier, all working teams must complete the General Tasks (as described above in the section "*General Task for All Working Teams 2004").* In addition, specific tasks are required for your assigned Scenario. ***Identify which of the specific tasks listed below you intend to investigate in 2004 and provide the rationale for these priorities.*** Needless to say, if deemed feasible, your team can decide to address all the tasks listed below.

Specific Tasks:

- Conduct background research on food miles and possibly other approaches to studying the increasing distancing of people from the sources and processes of food production and preparation;

- Research the impacts, in general and within the UBC Food System in particular, of the distancing of consumers from their food sources and processes of production and processing;

- Work with UBC Food Services and AMS Food Services to calculate the food mileage of certain menu items;

- Develop a food mileage labeling system for Food Services menus;

- Assess alternative food purchasing options for UBC Food Services to reduce food miles. Consider the consequences (e.g. product availability, price) of these alternatives for consumers;

- Conduct a review of relevant consumer demand and economic impact survey studies and develop a research proposal to determine how people on campus would react to the expected consequences (as identified above) of re-localization of UBC's food supplies;

- From your findings, recommend creative strategies for UBC Food Services to meet information needs to address the issues of food miles and distancing.

Scenario # 4: *UBC Farm: Assessing the Potential of Forming Market Relationships with Campus Food Providers*

Problem:

I) There are very few university campuses in North America that still have a campus farm that embraces the needs of small-scale and diversified agriculture. With the UBC Farm, UBC has the potential to be such a university. The intention of UBC Farm is to make it a place for action learning and to be an integral constituent in the Faculty of Agricultural Science's curriculum. In addition, the Farm must become a financially viable operation, guided by the principles of agroecology and reflecting its own goals and objectives for viable regional agriculture. UBC Farm has established some market relationships with some of UBC's independent food service providers and holds summer markets; however, this is not sufficient for the Farm's financial viability. The Farm community is interested in establishing market relationships with UBC Food Services, AMS Food Services and other campus food providers where there is greater opportunity for high volume sales.

II) There is a growing trend in North America for appreciating locally grown or produced food. This is most evident in the enormous popularity of farmers' markets where people can have direct market and personal relationships with farmers. Another trend, though not nearly as prolific, is university food services establishing local purchasing policies and developing marketing relationships with local producers. UBC Food Services currently utilizes commercial food delivery services for its operations on campus, though it has expressed reserved interest in purchasing locally if prices are competitive or comparable.

General Tasks: As indicated earlier, all working teams must complete the General Tasks (as described above in the section "G*eneral Task for All Working Teams 2004").* In addition, specific tasks are required for your assigned Scenario. ***Identify which of the specific tasks listed below you intend to investigate in 2004 and provide the rationale for these priorities****.* Needless to say, if deemed feasible, your team can decide to address all the tasks listed below.

Specific Tasks:

- Describe and assess UBC Farm's current economic/business model. Identify the values which guide this model. If necessary, further develop or build upon this model.

- Identify, in general and at UBC in particular, institutional food purchasing policy barriers and opportunities, including contractual constraints. Identify the values which guide this model. Suggest viable alternatives to

current constraints at UBC.

- Research other university farms as case studies of the opportunities and challenges of integration into the campus food system. Compare these case studies to the situation at UBC and identify key lessons or principles that can guide the UBC Farm initiative.

- Propose a research design to: a) identify a selection of possible farm production plans for UBC Farm, guided by the principles of agroecological design and sustainable agriculture, and b) estimate the potential productivity of each. Review the available literature or research relevant case studies to inform your research design.

Scenario # 5: *Assessing the potential for a student-run cooperative organic grocery outlet in UBC's Student Union Building*

Problem: Aside from UBC Farm's summer markets and the Natural Food Coop there is no place on campus for people to buy groceries. The nearest grocery outlets are two small stores located just off campus in the University Village. The nearest large food outlet is located approximately 2 km from campus. UBC Farm has started a small farm market, which runs Saturday mornings in the summer. The market is currently limited by its location and times of operation and production levels. The Natural Food Coop, a student run, volunteer organization, which was established to provide affordable organic food to interested university community members, is also challenged financially due in part to its poor location and dependence on volunteers (mostly busy students!). An idea has emerged that one way to address these needs and challenges could be through the establishment of a central student–run cooperative food grocery in the SUB. The proposal is based on the working assumption/goal that such an outlet would provide a more visible, centrally located venue in which to sell organic food to the campus community that could enhance the economic viability of both the Natural Food Coop and UBC Farm, while contributing to the sustainability of the UBC food system. In addition to the time and skills required for undertaking a task of this scope and nature, there are concerns about start-up costs, the long-term viability of such a student-run venture and the potential impact on the current food-related enterprises run by the AMS, the Natural Food Coop and UBC Farm

General Tasks: As indicated earlier, all working teams must complete the General Tasks (as described above in the section "G*eneral Task for All Working Teams 2004").* In addition, specific tasks are required for your assigned Scenario. ***Identify which of the specific tasks listed below you intend to investigate in 2004 and provide the rationale for these priorities.*** Needless to say, if deemed feasible, your team can decide to address all the tasks listed below.

Specific Tasks:

- Explore potential positive contributions as well as challenges to the sustainability of UBC's current food system that could arise from the development of an on-campus natural foods cooperative grocery outlet;

- Assess the potential and challenges for the development of a student-run cooperative business. In the process, develop an understanding of the economic and social philosophy behind the cooperative business model;

- Develop a research proposal that includes:
  - stakeholder processes to identify the needs, constraints, available resources and other issues deemed important to the various interest groups. These groups could include, at a minimum, the Natural Food Co-op, AMS, UBC Farm, the Sustainability Office, and the Student Environment Centre;
  - an assessment of the challenges and opportunities of selling unprepared food on-campus;
  - market survey instrument(s) to determine if there is any consumer interest for an alternative SUB grocery outlet;
  - documentation of lessons learnt from other student-run food coop operations at other university/college campuses.

- Develop an implementation plan for establishing a grocery outlet that addresses the needs, available resources and constraints of the stakeholders.
  - Create a business plan that addresses the key issues and provides a determination on the efficacy of the cooperative business model;

- Propose a detailed, well-informed plan for how a student-run cooperative grocery outlet could fit into the Faculty of Agricultural Science's new curriculum and core values;
- Propose forms of collaboration and possible contractual arrangements between participating groups (AMS, UBC Farm, Natural Food Coop, and FAS).

Scenario # 6 *Develop a definition for food security of the UBC campus in the context of UBC's efforts to become a sustainable campus and reviewing carefully what has been done in other areas of sustainability at our university.*

Problem: There are many different definitions of food security in the literature in use by various governmental and non-governmental organizations involved in hunger and poverty issues. Many of the food security concepts appear universal or broad, but still need refinement when placed within different socioeconomic and biophysical contexts. This becomes especially clear when one tries to operationalise food security on the ground. If this were the case with defining food security in general, then how would food security be defined for UBC? Are there contextual properties that differentiate food security on campus from other definitions? Are these properties significant to UBC Food Services and the student resident population?

General Tasks: As indicated earlier, all working teams must complete the General Tasks (as described above in the section "G*eneral Task for All Working Teams 2004").* In addition, specific tasks are required for your assigned Scenario. ***Identify which of the specific tasks listed below you intend to investigate in 2004 and provide the rationale for these priorities****.* Needless to say, if deemed feasible, your team can decide to address all the tasks listed below.

Specific Tasks:

- Develop a definition of food security that is relevant to the UBC campus context; this includes investigating what accessibility, availability, appropriateness and affordability, safety and sustainability mean to students, faculty and staff;

- Investigate possible differences between food security as it pertains to students in residence and food security for people who live off campus;

- Assess the role that AMS Food Services and UBC Food Services play in campus food security. If appropriate, make recommendations aimed at enhancing such a role;

- Identify other stakeholders in food security at UBC. Assess possibilities for partnerships with AMS Food Services and UBC Food Services, and, if appropriate, propose the basis for an ongoing, collaborative working relationship to address the issues of food security at UBC;

- Review recent developments on food policy within the City of Vancouver (City Council) and the work conducted on food security at UBC by previous groups of students in the Land, Food and Community courses in the Faculty of Agricultural Sciences.
    - Further develop their themes and conduct further research and analysis, if necessary, of the most controversial findings;
    - Describe how food security issues at UBC relate to the City of Vancouver food policy developments: how will the City's food policy impinge on the UBC Food System and food security issues at UBC? How can the UBC Food System contribute to the City's food policy initiatives?

Scenario # 7: *Customer awareness of and participation in sustainability*

Problem: UBC Food Services and AMS Food Services need to determine the level of knowledge and awareness within the UBC community, particularly among its customers, about current sustainability initiatives on campus in general and in the food system in particular. This information is critical to understand the current and potential support for sustainability initiatives, and how these trends may translate into customer behavior and new working directions for UBC Food Services and AMS Food Services.

General Tasks: As indicated earlier, all working teams must complete the General Tasks (as described above in the section "G*eneral Task for All Working Teams 2004").* In addition, specific tasks are required for your assigned

Scenario. ***Identify which of the specific tasks listed below you intend to investigate in 2004 and provide the rationale for these priorities.*** Needless to say, if deemed feasible, your team can decide to address all the tasks listed below.

Specific Tasks:

- Compile an inventory of UBC campus-based food sustainability initiatives. Include an estimate of the number of people, and their demographics, involved with these initiatives.
- Work with UBC Food Services and AMS Food Services to develop and conduct market research into customers' support for and participation in current and proposed sustainability initiatives.
- Research other universities'/colleges' initiatives related to sustainable food procurement.
- Assess the desirability of developing a code of ethics for UBC to guide food purchasing. If appropriate, propose a framework for development of the code (process and principles for development and suggested content of code).
- Examine current and propose future marketing and other educational campaigns.

To address the above Specific Tasks you will need to ***design a research plan*** to be implemented by AGSC 450 next year. The design of your research should:

a) *Provide a problem definition: What needs to be studied? What are the central research questions?*
b) *Provide an explanation of the motives that make the research important in the context of efforts to move the UBC food system towards sustainability.*
c) *Include answers to the question "how" to study the research agenda: that is, provide the methods and instruments of data collection (interview guide, semi-structured, structured or open-ended questionnaire, focus groups, etc.).*
d) *Provide a timeline, assuming a horizon of two years engaging the AGSC 450 class (when to do what?).*
e) *Provide a definition of the communities and stakeholders who would benefit from the research and a justification of the choice: "for whom" to study the research agenda*.

Scenario # 8: *What are the perceptions of UBC customers regarding the price of food at UBC?*

Problem: UBC Food Services and the AMS Food Services need to a) identify the perceptions of UBC customers regarding the price of food at UBC; b) examine the economic costs and benefits of adopting more sustainable food purchasing policies for campus food services, and c) identify ways of establishing "full" costs and benefits. This information is critical to understand: the current and potential support for sustainable food products (that is, food produced, packaged, advertised, transported, distributed and disposed of in a manner that reflects the principles of a sustainable food system at UBC) and customer behavior with respect to the pricing of sustainable food products.

Specific Tasks:

Design a study to identify the perceptions of UBC customers regarding the price of food at UBC. The design of your research should:

a) *Provide a problem definition: What needs to be studied? What are the central research questions?*
b) *Provide an explanation of the motives that make the research important in the context of efforts to move the UBC food system towards sustainability.*
c) *Include answers to the question "how" to study the research agenda, that is, provide the methods and instruments of data collection (interview guide, semi-structured, structured or open-ended questionnaire, focus groups, etc.).*
d) *Provide a timeline, assuming a horizon of two years engaging the AGSC 450 class (when to do what?).*
e) *Provide a definition of the communities and stakeholders who would benefit from the research and a justification of the choice: "for whom" to study the research agenda*.

Marking Guidelines:

The Team Paper (30 out of 40%)

a. Write an introduction describing your definitions of the problem in the UBC food system and the aspect of it that the working team will discuss (7.5 points)

b. Identify the underlying value assumption(s) in your working-team's report (7.5 points)
- The task is a straightforward identification of whether your group's analysis is informed by an eco-centric, anthropocentric (weak or strong), community-based or individual freedom-based ethical perspective. Report if there was more than one position in your group. Based on this perspective(s) identify what aspects of food system sustainability your group considers more desirable and significant. Identify also limitations of your perspective(s).

c. Present and argue the group's position(s) in relation to food system sustainability.
- Include an identification and description of your assigned subsystem or aspect of the UBC food system, your method of data collection and your findings, using ecological, economic and social perspectives. (10 points)

d. Provide your conclusions or final reflections that include the following:
- A clear statement of the working team's central findings and position(s)
- Recommendations to the UBC Office of Campus Sustainability on ways to make the Food System more sustainable at UBC with reference to your specific task. (5 points)

The collective paper should be approximately seven double-spaced pages (1800 to 2500 words) plus your bibliographical references and appendices (if any). An abstract no longer than one paragraph or two should be included in the paper. Use the course materials, class activities and any other resources to develop your thoughts on the subject.

APPENDIX B

UBC Food System Collaborative Project IIIa

AGSC 450: Summer 2004

Scenario # 1: Re-localization of UBC's Food System

Problem:

The Big Picture – A Macro Look into our Food System:

Food buyers have come to expect year-round availability of an extensive variety of foodstuffs from many regions of the globe. To meet these demands for year-round availability of food, four key developments have taken place within the past 50 years on a global scale: the building and maintenance of a transportation infrastructure with low direct costs (vs. hidden) user costs; intensification of agricultural technology; a widespread commitment to global free trade policy; and a vertical and horizontal consolidation and centralization of the corporate food system. As a result, food now comes to us from anywhere and everywhere, but from nowhere in particular.
In North America, food travels an average of 2000km before it reaches consumer's plates (Pretty, 2001: 6). This physical distancing of food has produced various forms of social and psychological distancing. Many people do not know where their food comes from, how it was produced and where it ends up. Social distancing is becoming an increasingly characteristic occurrence between farmers and consumers, and between consumers and the natural environment. The food dollar that producers end up receiving for their products have been significantly and steadily falling since the 1950's (Pretty, 2001: 2). The cheap cost of food in North America in particular, hides many indirect costs, and produces "externalities". Negative ecological impacts, decreased nutritional value and overall flavor are each associated with increased food miles. In other words, despite overall growth in the quantity of food production globally, evidence is accumulating regarding the negative social, ecological and economic effects of our current dominant forms of food production, processing, transporting, distribution, consumption and end disposal, that is, all facets of the food system.

Taking a Look at UBC's Food System:

UBC'S food providers are faced with many demands. UBC's population place demands on food providers for healthy, tasty and affordable food. Food providers must at the same time run an economically viable business. There appears to be a growing demand for locally produced food. This growing demand presents food providers with a set of new issues (listed below).

- How much demand is there among the UBC population for locally produced food?
- How much is UBC's population willing to pay for locally produced food?
- How much can UBC food providers pay for locally produced food?
- Is there a reliable quantity and quality of locally produced food available for purchasing by food providers?
- Can UBC food providers be economically sustainable if they shift food procurement practices to increase the availability of locally produced food?

Specific Tasks:

Scenario #1A: DESIRABILITY OF RE-LOCALIZATION

Group #1: Based on secondary sources, your former 2004 AGSC 450 colleagues work, and your own experience:

- Briefly assess the chosen model (Group 9: 2003) in terms of its adequacy to guide the transition of the UBC food system towards sustainability, and if needed, critique and modify it.

- Develop a research methodology (For a complete review of research methods and sampling techniques see http://www.webct.ubc.ca/SCRIPT/agsc_450/scripts/serve_home.) You are expected to find out whether or not

and to what extent UBC's population is willing to buy local food (i.e. level of demand and interest), and whether or not UBC's population is willing to pay more for local food. In other words, you need to construct a method of data collection (i.e. questionnaire) to address the desirability among UBC's population to consume and purchase locally produced goods.

- In order to develop a methodology you will need to answer the following questions typical of any research design:
    a. Briefly discuss the above problem statement ("what?") and explain its importance ("why?")
    b. By/With Whom? (Define demographically the population to be studied from which you need to draw a sample. Specify the sampling technique to be used (i.e. random sample; convenience sample; "snowball" sampling, etc.)
    c. When? Provide a timeline for your research design (i.e. duration of data collection)
    d. Where? (Location of the data collection)
    e. How? Techniques of data collection (i.e. anonymous, structured, semi-structured, open-ended, electronic, mailed, administered directly)

In other words, your task is to further develop the research design you have received from previous AGSC 450 students, to allow the next generation of AGSC 450 students to engage in the actual data collection. Your task is to leave the ground ready for their work.

Scenario 1B: FEASIBILITY OF RE-LOCALIZATION

Group #2: Based on secondary sources, your former 2004 AGSC 450 colleagues work, and your own experience:

- Briefly assess the chosen model (Group 9: 2003) in terms of its adequacy to guide the transition of the UBC food system towards sustainability, and if needed, critique and modify it.

- Investigate the realistic opportunities for local food procurement given the factors governing UBC's food procurement requirements such as volume, seasonality, and price. Specifically, UBC food providers need to know what types of foods local producers and distributors can deliver reliably and consistently, while meeting needed quantities and quality standards, as well assuring economic viability.

- Using 2004 AGSC 450 Group 17's method of feasibility analysis (pages 9 to 15 of their paper) investigate the feasibility of re-localizing UBC's Food System. You will need to answer the following questions in order to conduct the feasibility analysis:

a. What commodities do UBC food providers currently use? (I.e. apples, oranges, and other unprocessed food, etc.)
b. Which of these products *can* be obtained from a BC source? (for a BC Agricultural Commodity List: go to http://www.agf.gov.bc.ca/stats/103a.htm)
c. What is the seasonal availability of these products?
d. What are the prices that UBC Food Services and the AMS Food Services pay for non-locally produced (unprocessed) foods?
e. Who can provide UBC food providers with locally produced (unprocessed) foods at a competitive price, while meeting quantity and quality requirements?

Group #3: Based on secondary sources, your former AGSC 450 colleagues work, and your own experience:

- Briefly assess the chosen model (Group 9: 2003) in terms of its adequacy to guide the transition of the UBC food system towards sustainability, and if needed, critique and modify it.

- Develop an education piece(s) (i.e. poster, pamphlets, online campus resource, etc.) that would enhance the feasibility of re-localizing UBC's food system. The development of education piece(s) can be viewed in the context of a campaign for re-localization (i.e. this is one way of advertising the benefits of re-localization).

- Along with developing education piece(s), you will need to answer the following questions typical of any educational campaign design:

  a. Briefly discuss the above problem statement ("what?") and explain its importance ("why?").

  b. By/with Whom? Define who will be administering the education piece(s) and define demographically who will be receiving/viewing the educations piece(s), that is, the "target population".

  c. When? Provide a timeline for your educational campaign design (i.e. when should your education piece(s) be administered, etc.).

  d. Where? (Location of administration of education piece(s), etc.).

  e. How? (Techniques of dissemination).

  - You will also need to outline a budget for constructing and administering your education piece. Keep in mind that your budget needs to be realistic (the smaller the better!) and the more detailed cost breakdowns you outline the clearer it will be to adopt and implement. (You may begin by finding out from UBC Food Services and the AMS Food & Beverages what would be a realistic budget)

Scenario #2: UBC Farm: To create a new farm production for UBC Farm

Problem:

I) There are very few university campuses in North America that still have a campus farm that embraces the needs of small-scale and diversified agriculture. With the UBC Farm, UBC has the potential to be such a university. The intention of UBC Farm is to make it a place for action learning and to be an integral constituent in the Faculty of Agricultural Science's curriculum. In addition, the Farm must become a financially viable operation, guided by the principles of agroecology and reflecting its own goals and objectives for viable regional agriculture. UBC Farm has established some market relationships with some of UBC's independent food service providers and holds summer markets; however, this is not sufficient for the Farm's financial viability. . The Farm community is interested in establishing market relationships with UBC Food Services, AMS Food Services and other campus food providers where there is greater opportunity for high volume sales.

Your colleagues in AGSC 450 2004 investigated possible avenues to establish market relationships with UBC Food Services and the AMS Food Services. They identified two problems: "1) The UBC farm's operating cost exceeds its revenue, and 2) UBC food providers have expressed reserved interest in buying UBC Farm produce but current prices and quantities supplied are not competitive with UBC Food Services current suppliers" (Group 9, 2004).

II) There is a growing trend in North America for appreciating locally grown or produced food. This is most evident in the enormous popularity of farmers' markets where people can have direct market and personal relationships with farmers. Another trend, though not nearly as prolific, is university food services establishing local purchasing policies and developing marketing relationships with local producers. UBC Food Services currently utilizes commercial food delivery services for its operations on campus, though it has expressed reserved interest in purchasing locally if prices are competitive or comparable.

Specific Tasks:

Group # 4: Based on secondary sources, your former 2004 AGSC 450 colleagues' work, and your own experience:

- Briefly assess the chosen model (Group 9: 2003) in terms of its adequacy to guide the transition of the UBC food system towards sustainability, and if needed, critique and modify it.
- Evaluate current production at UBC Farm.

- Review available literature about current UBC Farm projects, discussions about and proposed visions for UBC Farm.
- Assess the Intercrop Experiment 2004 (Suen & Binns) and how it can contribute to the social, ecological and economic sustainability of the UBC Farm. This experiment consists of intercropping two economic food crops at UBC Market Garden: Chinese cabbage and Garland Chrysanthemum (edible).
- Explore alternative production plans for the UBC Farm (i.e. alternatives to Saturday Markets, evaluate feasibility of a Community Supported Agriculture, production and processing / value-added medicinal crops to be supplied to local UBC and local communities, etc.)

Marking guidelines:

The Team Paper (30 out of 40%)

1) **Introduction, Problem Definition and Identification of Value Assumptions (10 points)**

a. Write an introduction describing your definitions of the problem in the UBC food system and the aspect of it that the working team will discuss

b. Identify the underlying value assumption(s) in your working-team's report

The task is a straightforward identification of whether your group's analysis is informed by an eco-centric, anthropocentric (weak or strong), community-based or individual freedom-based ethical perspective. Report if there was more than one position in your group. Based on this perspective(s) identify what aspects of food system sustainability your group considers more desirable and significant. Identify also limitations of your perspective(s).

2) **Methodology, Results, Discussion, Recommendations and Conclusion (20 points)**

c. Present and argue the group's position(s) in relation to food system sustainability.

Include an identification and description of your assigned subsystem or aspect of the UBC food system, the methods you recommend for next year's data collection and any needed instrument (questionnaire, semi-structured interviews, interviews for key informants, etc). Report as well any findings from your review of the literature, project archives and other secondary sources, using ecological, economic and social perspectives.

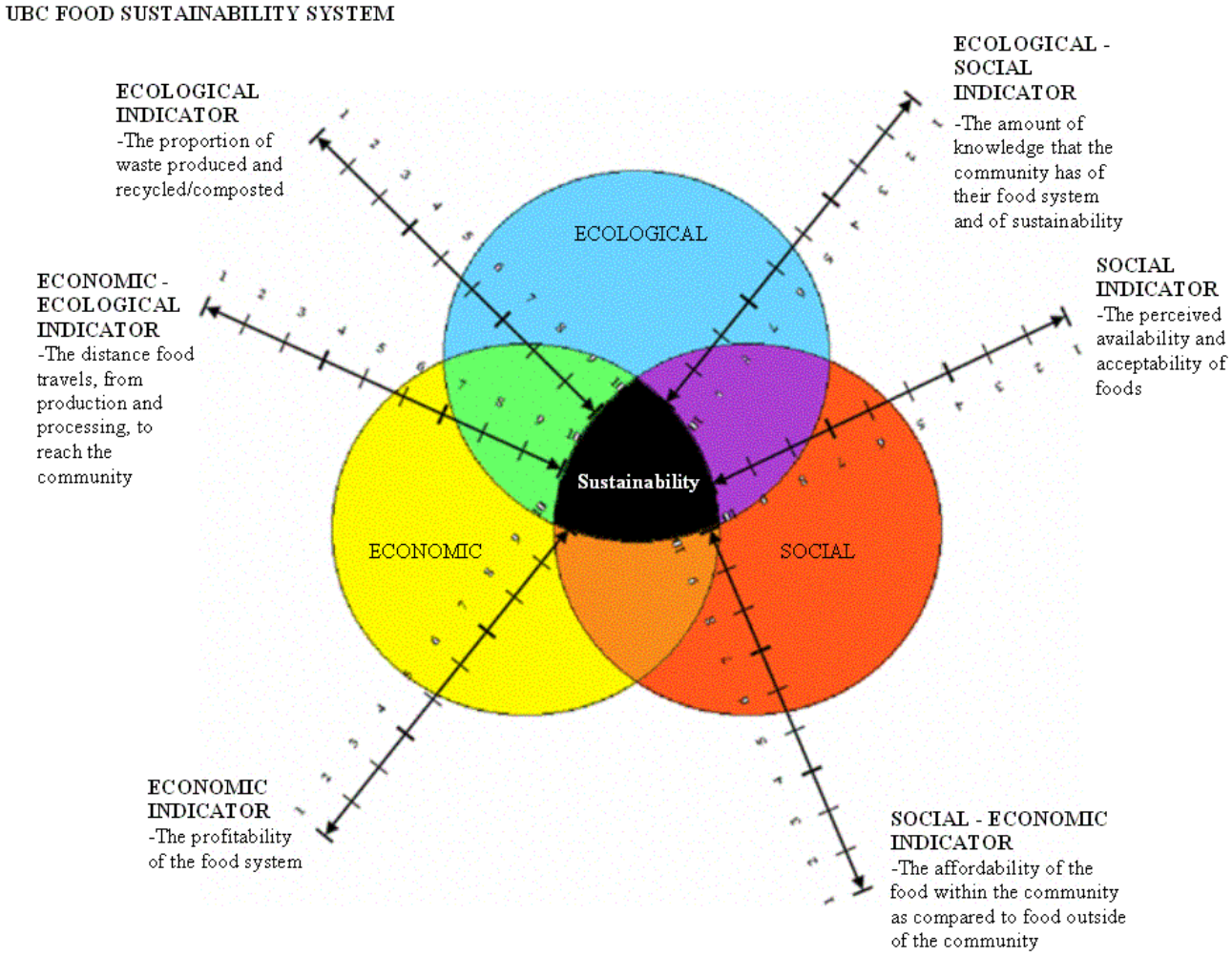
d. Provide your conclusions or final reflections that include the following:

- A clear statement of the working team's central findings and position(s)
- Recommendations to the UBC Office of Campus Sustainability, UBC Food Services, AMS Food and Beverage Services, UBC Waste Management, and/or UBC Farm on ways to make the Food System more sustainable at UBC with reference to your specific task.

The collective paper should be ***MAXIMUM 25 double-spaced pages including*** bibliographical references, appendices (if any), and an abstract (no longer than one or two paragraphs). The maximum length will be strictly enforced.

APPENDIX C

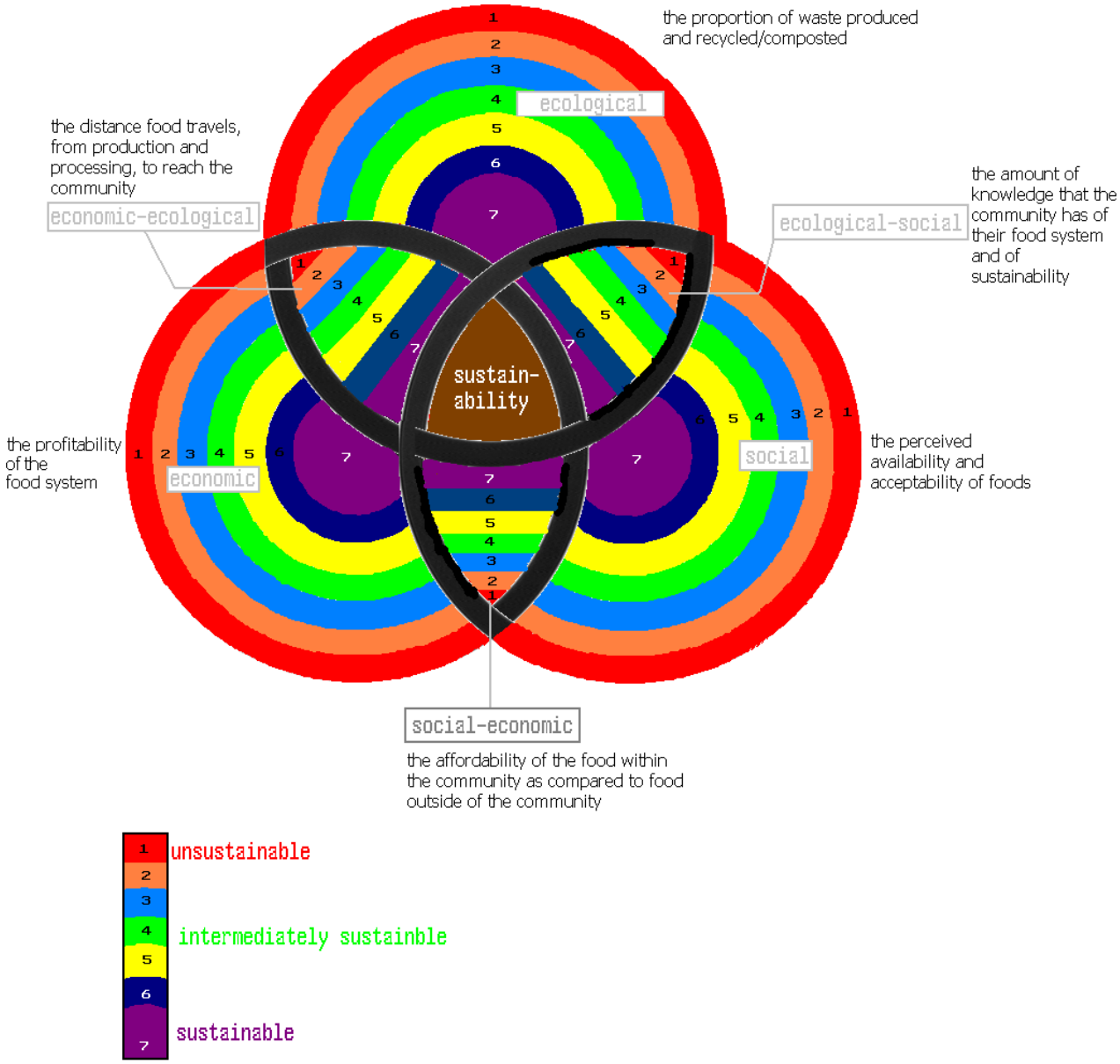
Group 9, 2003.



APPENDIX C

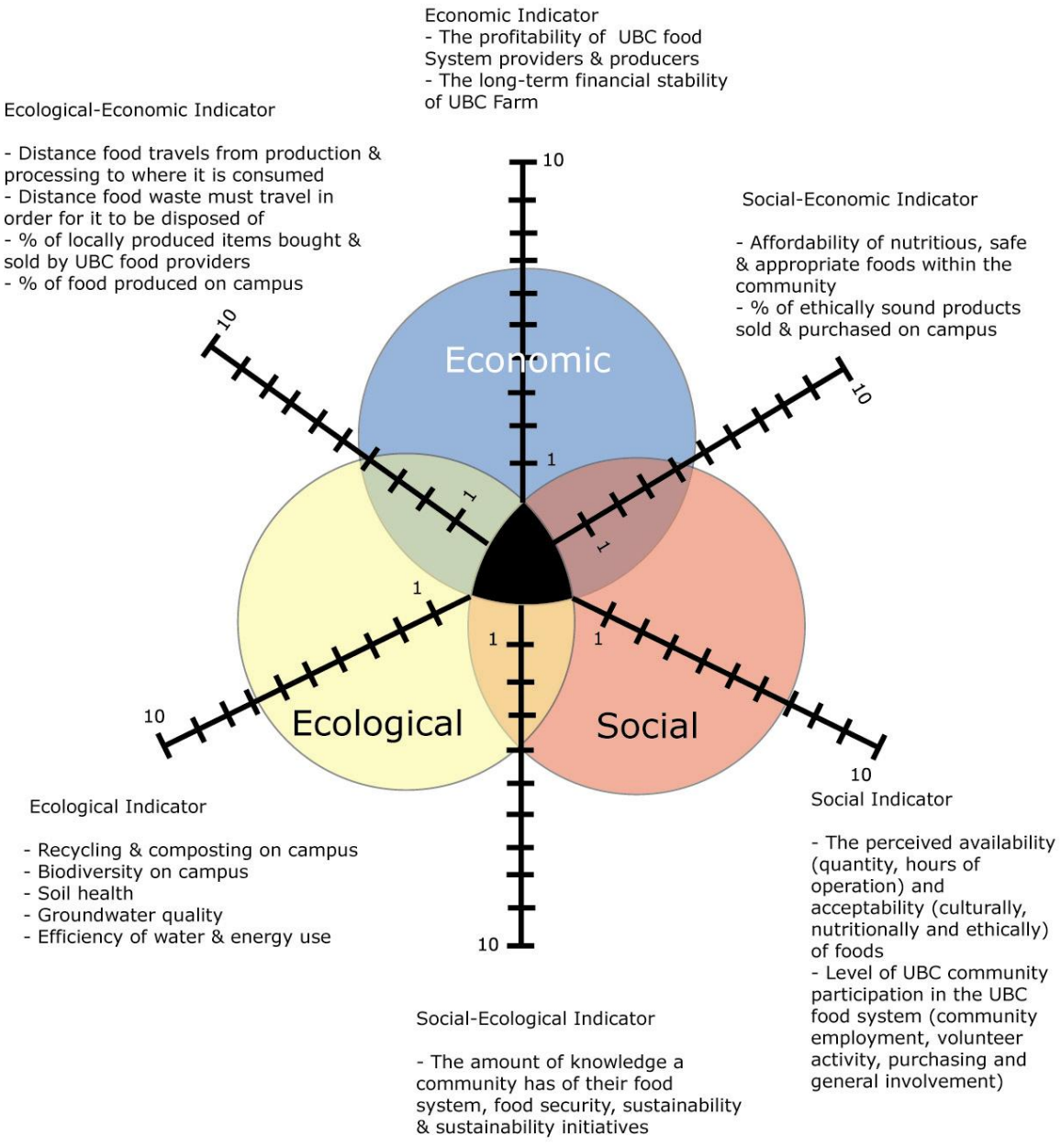
Group 3, Summer 2004

Appendix I - Modified Version of Group 9's Model



APPENDIX D

Teaching team revised model of Group 9, 2003 and Group 3, summer 2004



APPENDIX E

Methods of data collection: Tables, Models, Methods of Assessment & Analysis

Group 7 Spring 2004: Percentage Scale for Agora

Measuring Economic Sustainability

Economic Sustainability (%)	Profitable	Funding to Cover Fixed Costs
100	Yes	Not required
	No	Guaranteed for 3 years
75	Yes	Not required
	No	Guaranteed For 2 Years
50	Yes	Not required
	No	Guaranteed For 1 Year
25	Yes	Not required
	No	Guaranteed for Current Yr
0	Yes	Not required
	No	No Guaranteed Funding

(group 7)

Group 7 Spring 2004: Description of Agora Business Model:

Agora's Current Business Model.

The Agora Kitchen space: towards a locally based sustainable food system.

Business Description

1.1.1 Mission Statement

- The student-run Agora creates a learner-centered approach to interdisciplinary education. Volunteer students wit gain an understanding of the science and management of food and nutrition in to context of to principles; of land, food and community. Additionally the operation of Agora should foster an environment of connections and interactions between the different disciplines of the Faculty.

1. 1. 2 Key success factors

- Funding support from the Faculty of Agricultural Science, the Food, Nutrition and Health (FNH) Committee, and the Agricultural Sciences Undergraduate Society (AgUS) including rent subsidy, capital investment and security on kitchen equipment.
- Location - Due to the closure of the UBC Food Services in Agora, there wit be a lack of food and beverages provided to students and staff in the Macmillan Building.

- Theme - Our menu is designed with health and affordability in mind.

1.1.3 Challenges

- No air ventilation system, unable to cook meals: Meals are cooked in the FNSC Kitchens Room 140 and transported to Agora. Need to ensure that food temperatures are not within the "Danger Zone".
- Food Service Operation Permit by the Health Board
- Dependable volunteer base

1.2 Business Goals

- Year One Goal - Achieve balanced income and expenses while preventing net loss with continued co-operation with the faulty on Co-op and volunteerism. Discuss learning opportunities with faculty members.

    - Student Events: Host efficient and safe preparation of meals (i.e. Wednesday Lunches, Community Dinner, Bake sales, Wednesday Niter BBQ and other social events).
    - Second Term:
        - Opportunity for an AGSC 450 case study
        - If feasible: sandwich bar open twice a week. Re-write the business plan.
        - Continue discussion of adapting course curriculum: sustainable food production, minimizing ecological footprints, Food Safe, Food Quality Management to be implemented next year.

- Year Two Goal - Implement teaming opportunities
    - Course development: Integrate food service kitchen into FNH curriculum (Nutritional Sciences, Food Sciences, Dietetics) such as the production of value-added foods: prestos, jams, jellies, sausages.
    - Farm Link: provision of continued supply of local, organic produce.
    - Financial: Gain an annual growth rate of 3% and begin phasing out non-organic ingredients from our menu.

- Five Year Goal - Ability to pay off all investment (stovetop, fridge, oven); secure Agora to create a permanent fixture for the Faculty curriculum, while achieving an annual 5% growth in the long run.

Action Plan

- 1st half of the 1st year (October to December 2003)

    - Negotiate co-operation with UBC Food Services, the Faculty of Agricultural Sciences, Agricultural Sciences Undergraduate Society, and the FNH Student Committee regarding funding support and equipment security.
    - Acquire Food Permit Registration
    - Partnership Agreement created with UBC Food Services
    - Investigate marketing aspects and make necessary adjustments (price, food choices, customer feedback, etc.)

Projected Events:

October

- Week of October 14: Finalize suppliers and permit. Finalize volunteer schedule.
- Week of October 20: Grand opening --products offered are coffee & muffins, weekly FNH bake sales. Use of 2 compartment sinks and soup holders for "Community Dinner" on October 22: begin Wednesday Hot-Lunch on 22nd.
- October 27: Monitor sales of coffee and muffins (progress report). Usage of 2 compartment sinks for set-up and clean-up of Pumpkin Carving (Oct 30).

November

- November 5: biweekly hot lunch cycle continues until last day of classes. Monitor sales and customer feedback.

December

- Review end of year sales report gross profits and assess capacity to have a sandwich bar (opened twice a week) for next term. Plan upcoming events and production schedule for next term.

- 2nd half of 2004 (January to March)
  - Owners meeting for viability/direction of the business and made necessary adjustments (menu choices, hour of operations, inventory, equipments, revenue and expenses, cash flow, etc)
  - If feasible; contact food supplier for sandwich bar
  - Set up new volunteer schedule

Production Plan

3. 1 Overview of Operations

Operations	**Descriptions**
Land	2357 Main Mall, The University of British Columbia, Vancouver, B.C.
Building	MacMillan Building 1st floor
Facilities	Agora Cafe and Lounge
Available Equipment	Oven, microwave, display case, 2 soup holders, beverage cooler, safety box, steel racks, 2 compartment and I compartment sinks arid cooking-ware
Needed Supplies	Serving-ware, cutlery (discount for customers *bringing own* cutlery?), food preparation utensils

- Sandwiches (if feasible, term two):
  - Majority of herb, fruits and vegetables supplies will be obtained from UBC farm and local farmers/suppliers.
  - Weekly Inventory turnover ensures fresh quality of our products, and ensures minimum loss/wastage on expired supplies.

- Agora Committee is responsible for running the whole business and implementation of food service establishment into Faculty curriculum.

3.2 Production cycle

October to November 2004

3.2.1 Daily Production Cycle

8:00 pm	Delivery of muffins and coffee. Chefs preparing food inside kitchen (back of Agora)
9:00 am	Agora opens. First volunteer shift cashes in.
10:00 am-11:00	Continue serving coffee and muffins.
11:00 - 12:00	Cash out from first volunteer shift and change over (cash in) with second volunteer shift.

1:00 pm	Agora closes for clean up and cash out.

3.2.2 Weekly production Cycle

Monday	Monday Munchies (Freshly baked goods made by FNH committee Baking Crew). Coffee
Tuesday	Coffee One-day old baked goods
Wednesday	Coffee Wednesday Lunch (9 am - 11 am: food preparation, 11 am to 1: pm selling) Wednesday BBQ (2 pm - 4pm Food preparation) Use of counter and display case, food holders for selling (5 pm - 7pm)
Thursday	Agora closed. Meeting with Agora Committee: overview of weekly sales.
Friday	Agora closed.

- (If feasible, term two) Sandwich Bar opened twice a week:
    - Majority of herb, fruits and vegetables supplies will be obtained from UBC farm and local farmers/suppliers.
    - Weekly Inventory turnover ensure fresh quality of our products, and ensure minimum loss/wastage on expired supplies.

3.3 Risk Management for Production

- Business Risk
    - Price Risk - Fluctuation in fresh produce will be minimal due to biweekly changes in menu choices. Rent and equipment fluctuations will be controlled through contract negotiation to maintain competitive meal prices and profit margin.
    - Production Risk: Variability in units of production (i.e. Wednesday meals prepared a night) will be adjusted accordingly to customer feedback and sales, At least one volunteer, is trained on HACCP management or holds a Food Safe Certification Level 1, and Serving-It-Right Certification to ensure our products comply with the Ministry of Health Services safety standards

- Financial Risk
    - Risks will be leveraged through a combination of partnership, investment, and subsidies from the Faculty and student society. End of term financial analysis with conservative sales estimates to reduce surprises.

- Risk Strategies: Accept
    - The main purpose of this business is not to make a huge profit but to provide an educational experience for undergraduate students through provision of a food service to Agricultural Science students, faculty and staff at fair prices. The business is anticipated to grow slowly in its first 3 years, by expanding in gradual, carefully managed steps.

- Political
    - We promote and only sell fair-trade coffee. Majority of our fresh food supplies will be from the UBC farm.
- Community
    - We obtain food from our community (UBC farm and local suppliers) to serve our community (FAS).

Human Resources Plan.

A committee consisting of the following positions will manage the student-run Agora Café:

Agora General Manager	- Stocks and supplies management- monthly inventory and purchasing. - Oversees operation flow - Maintaining food satisfaction
Production Manager	- Assist general manager in overseeing production and operation flow. - Assist in monthly inventory and purchasing.
Finance Officer	- Financial budgeting - Accounting - Cashier float box
Volunteer Coordinator	- Ensuring at least one volunteer per shift holds a food safe certificate or is signed up for a course. - Scheduling weekly volunteer shifts.

- Each partner needs to report his/her responsibilities to all members in the Committee.
- Since this is a row business, all members need to discuss development ideas for better managing, marketing, and for keeping food quality and price appropriate for the FAS community.
- The revenue and net income need to be calculated daily to determine how to business works. Each member is free to give constructive inputs to make any changes for the Agora's progression.

(group 7)

Group 15 Spring 2004: UBC Farm Food Supply Contract

FOOD SUPPLY CONTRACT

TO: UBC FARM

6182 SOUTH CAMPUS ROAD, UBC, VANCOUVER, BC

FROM: AGORA FOOD SERVICES

MCMILLAN BUILDING, UBC, VANCOUVER, BC

SUBJECT: WEEKLY FOOD SUPPLY

DATE: 1/27/2005

CC: FARM TEAM

TO BE EFFECTIVE SEPTEMBER 2004

UBC Farm has been given the contract to deliver a weekly supply of selected produce to Agora Food Services. Deliveries will take place every Monday at 9:00 am, at Agora (in the basement of the MacMillan Building, on the UBC campus). All payments will be in cash and will be made at the time of delivery.

The total volume of each item to be delivered and price is as follows:

Item	Quantity	Average Price/unit ($)	Total Price ($)
Bagged Lettuce	2	2.50	5.00
Broccoli	3	1.50	4.50
Carrots	2	1.86	3.72
Derek Cukes	5	1.00	5.00
Herbs	2	1.00	2.00
Salad mix	6	3.73	22.38
			42.60

If the items requested are not available (due to seasonal changes), suitable substitutions will be considered. In addition, if Agora wishes to purchase additional items, orders via the purchase order should be made 2 weeks prior to delivery date. If production of UBC Farm cannot be extended to supply Agora with adequate food supply, they must give notification 2 weeks prior to termination or possible postponement for the school year.
Since items are not being transported a far distance, packing restrictions were not an issue, however all items must be contained in a loose pack/box for easy handling.
This contract is an agreement on behalf of the UBC farm and Agora Food Services. Both parties are subjected to the terms of this contract and will be held liable if their parts are unfulfilled.
Signed Below:

_____ _____

Agora Food Service Representative
Date signed: _____

UBC Farm Representative
Date signed: _____

(group 15)

Group 15 Spring 2004: Squeez Food Supply Contract

FOOD SUPPLY CONTRACT

TO: SQWEEZ, FRESH ORGANIC FOOD DELIVERY

SERVICE@SQWEEZ.COM

FROM: AGORA FOOD SERVICES

MCMILLAN BUILDING, UBC, VANCOUVER, BC

SUBJECT: WEEKLY FOOD SUPPLY

DATE: 1/27/2005

CC: SERVICE TEAM

TO BE EFFECTIVE SEPTEMBER 2004

Sqweez has been given the contract to deliver a weekly supply of selected produce to Agora Food Services. Deliveries will take place every Monday at 11:00 am, at Agora (in the basement of the MacMillan Building, on the UBC campus). All payments will be in cash and will be made at the time of delivery.
The weekly purchase will be the “Main Sqweez Box.” The total volume of each item to be delivered and total price of the box is as follows:

Item	Quantity
Gala Apples	6
Bananas	2.5 pounds
Strawberries	1 pint
Navel Oranges	6
Anjou Pears	4
Kiwis	2
Green Beans	1 pound

Spinach	1 bunch
Red-leaf Lettuce	1 head
Celery	1 bunch
Carrots	1 bunch
Hothouse Tomatoes	3
Yellow Potatoes	2 pounds
Total Price of Box:	**$35.00**

If the items requested are not available (due to seasonal changes), suitable substitutions will be considered. All substitutions must be indicated 2 weeks prior to the date of delivery of the box. In addition, if Agora wishes to purchase additional items, orders via the purchase order should be made 2 weeks prior to delivery date. The purchase order is available online at http://www.sqweez.com/ in the existing customer area; this will reflect customizing the box as well as substitutions to the box.
All items should be properly packaged according to food safety regulations, at proper temperatures, and in a standard box for easy transport and storage handling.
This contract is an agreement on behalf of the Sqweez and Agora Food Services. Both parties are subjected to the terms of this contract and will be held liable if their parts are unfulfilled.
Signed Below:

_____ _____

Agora Food Service Representative
Date signed: _____

Sqweez Representative
Date signed: _____

(group 15)

Group 10 Spring 2004: Tables 1.1-1.6

Table 1.1: Breakdown of the water quality indicator

Water Quality	potable	5
(in the environment of food	Suitable for bathing	4
producers supplying UBC)	Suitable for livestock	3
	Suitable for irrigation	2
	Toxic	1

Table 1.2: Breakdown of the food mileage indicator

Food Mileage	Produced at UBC	5
(distance food products travel)	< 200 km	4
All food? A sample?	< 800 km	3
	< 2000 km	2
	> 2000 km	1

Table 1.3: Breakdown of the Food Services profitability indicator

Food Services Profitability	> 5 cents/consumer dollar	5
	3-5 cents/consumer dollar	4
	1-3 cents/consumer dollar	3
	Break even	2
	Net loss	1

Table 1.4: Breakdown of the local economic cycling indicator

Local Economic Cycling	> 90%	5
(amount of food production,	75%- 90%	4
processing, and sales through	50%- 75%	3
BC companies)	25%-50%	2
	< 25%	1

Table 1.5: Breakdown of the knowledge of externalities indicator

Knowledge of externalities	> 90%	5
(amongst the UBC community)	75%-90%	4
	50%-75%	3
	25%-50%	2

	< 25%	1

Table 1.6: Breakdown of the social equity indicator

Percentage of profit for local? farmers	> 40%	5
(as a portion of the consumer	30% - 40%	4
dollar spent)	20% - 30%	3
	10% - 20%	2
	< 10%	1

(group 10)

Group 8 2004: Methods to Conduct a CCA

Adapted from: New York University Libraries
http://library.nyu.edu/research/food/cca.html

Commodity Chain Analysis for Processed Food Products

See also: Research in Food Studies | NYU Virtual Business Library

I. Select a product
II. List the ingredients used in the product
III. Who manufactures the product?
IV. What can you learn about this company?
V. How do they get their ingredients? From what country or countries?
VI. What processing techniques are used?
VII. What are the environmental conditions in the country? What are the political, economic, and labor conditions in the country?

I. Select a product

Choose something you know and can obtain easily.

II. List the ingredients used in the product.

What commodities go into a certain ingredient?
Encyclopaedia Britannica online [http://search.eb.com/]
Enter a search on the name of the ingredient to get more information about that item.

III. Who manufactures the product?

Hall, Linda D. (Ed.). Brands and Their Companies. Detroit: Gale Group, 2000. (2 vols)
Ref6 T223 .V4 A22
this directory provides an alphabetical index of brand names and contact information for the companies that make them.

Hoovers
http://www.hoovers.com
Use this online directory to look up a brand name and identify the parent company. Also gives top competitors.

Million Dollar Database
http://mddi.dnb.com
Use this database to find brief profiles of both domestic and international companies. The ultimate corporate parent is given, as well the names of the CEO and company executives for each.

IV. **What can you learn about this company?**

ABI/Inform (online index)
http://www.umi.com/pqdauto/
Provides in-depth coverage of business conditions, trends, corporate strategies and tactics, management techniques, competitive and product information, and a wide variety of other topics.

Factiva (formerly Dow Jones Interactive; online index)
http://global.factiva.com
Provides access to articles from leading newspapers, news magazines and newswires. Search 6,000 newswires, magazines and journals, essential business, government and industry websites

Lexis-Nexis Academic Universe (online index)
http://web.lexis-nexis.com/universe/
Provides full-text access to newspapers from around the world and the U.S.; business, legal, and medical journals; corporate financial information; Federal laws, regulations, and court decisions; State laws and court decisions; quotations and biographies; and business directories.

Mergent Online
http://www.fisonline.com/
Use this database to look up annual reports of publicly traded companies. From the Business Summary page click on the Annual Reports tab at the top. Annual reports are available in PDF format and often contain a lot of pictures that load slowly. These reports usually include a summary of the performance of each product category and/or brand the company owns.

Periodical Abstracts (online index)
http://www.umi.com/pqdauto/
Provides abstracts of articles from a wide range of popular and academic magazines and journals. Good general coverage of social issues and public policy.

V. **How do they get their ingredients? From what country or countries?**

CRB Commodity Yearbook. By Commodity Research Bureau. New York: John Wiley & Sons, Inc. Annual.
Ref6 HF1041 .C56
this book provides essential information on commodities, including production levels in the U.S and the world, prices, and trade information. Individual entries for each commodity start with a short narrative section that discusses recent market trends and identifies major producers. These are followed by tables of relevant statistics going back several years.

Agricultural Market Information Virtual Library
http://www.aec.msu.edu/agecon/fs2/market/contents.htm

U.S. Department of Agriculture
http://www.usda.gov/
--News and Information
http://www.usda.gov/news/news.htm

Agricultural Marketing Service
http://www.ams.usda.gov/

Agricultural Research Service
http://www.ars.usda.gov/

Economic Research Service
http://www.ers.usda.gov/

Foreign Agricultural Service
http://www.fas.usda.gov/

National Agricultural Statistics Service
http://www.usda.gov/nass/

VI. **What processing techniques are used?**

Encyclopaedia of food sciences and nutrition. 2nd edition. (10 vols).
REF9 TX349 .E47 2003 Non-circulating
this encyclopaedia describes growing conditions, harvesting, transportation, and processing requirements for each product. Includes list of recommended readings.

Encyclopaedia of Chemical Technology / Kirk-Other Encyclopaedia of Chemical Technology. (24 vols).
Ref9 TP9.K54 1999
This encyclopaedia describes processing techniques for most commodities. Many entries include a detailed chart of the technique most often used for that item.

Agricola (online index)
http://agricola.nal.usda.gov
worldwide coverage of literature relating to agriculture. Includes food and nutrition, food service management, natural resources and pollution, consumer protection and home economics. Indexes primarily journal articles, some government reports and documents, monographs and conference proceedings.

Encyclopaedia of Chemical Technology/ Kirk-Othmer Encyclopaedia of Chemical Technology.
Ref9 TP9.K54 1999
this encyclopaedia describes processing techniques for most commodities. Many entries include a detailed chart of the technique most often used for that item.

VII. **What are the environmental conditions in the country? What are the political, economic, and labor conditions in the country?**

CIAO (Columbia International Affairs Online)
http://www.ciaonet.org

Country Studies (Library of Congress)
http://lcweb2.loc.gov/frd/cs/

Food and Agriculture Organization (FAO)
http://www.FAO.org

Global Newsbank
http://infoweb.newsbank.com

International Labour Organization
http://www.ilo.org

Organization for Economic Cooperation and Development (OECD)
http://www.SourceOECD.org

PAIS (Public Affairs Information Service)
http://spweb.silverplatter.com/waldo?

World Bank / International Bank for Reconstruction and Development (IBRD)
http://www.worldbank.org

World Health Organization (WHO)
http://www.WHO.org

Group 8 2004: Assessment Model

Location of Cultivation	Suggested Rating
UBC Farm	0
Lower Mainland	1
British Columbia	2
Canada	3
Western USA	4
Rest of USA	5
Central America	6

South America	7
Asia/Europe	8

To understand how this could work, consider a hamburger: Let us assume that the beef is raised in Alberta, the tomatoes and lettuce is from the Lower Mainland, and the cheese is from Armstrong (BC). The overall rating of this item would then be: 3 (beef) + 1 (tomato) + 1 (lettuce) + 2 (cheese) – 1 (assembling and cooking of patty on UBC campus) = overall value of 6

(Group 8)

Group 8 Spring 2004: CCA Analysis

Group 8's CCA Template:

1. Select a product
2. List the ingredients used in the product
3. Which distributor supplies this product?
4. Who manufactures the product?
5. What can you learn about this company?
6. How do they get their ingredients? From what country or countries?
7. What processing techniques are used?
8. What are the environmental, social and economic impacts from the processing of this product? What are the direct and indirect costs?

In the following CCA steps 1 through 6 are outlined in detail since these can be determined with investigation and evidence. The processing techniques are important in the environmental, social and economic impact, yet to simplify the model, step 7 is briefly outlined since it directly affects step 8, which is addressed in the Direct and Indirect Costs section. Excellent example

1. **Eggs**, any style
2. Main ingredient is egg
3. Gordon Food Services
4. Gordon Food Services brand as well as Vanderpol's
5. GFS: US company
    - Canadian division of GFS is Neptune Food Service
    - Distribution centre is based in Milton, Ontario
    - GFS has "Marketplace stores" concentrated in US around Great Lakes
    - Claims to be a "customer first" company

   Vanderpol's Egg's Ltd: BC company
    - Has instituted an in-house laboratory
    - Developed a HACCP program to ensure the safety and the quality of our products
    - Egg processing business since the 1950's years based in Abbotsford, BC
6. BC Egg Board has provincial quota exchange where a certain number of eggs must be distributed within the province. GFS eggs are mostly from Ontario.
7. Processing techniques: hens lay eggs, sanitation and candling, storage, packaging and transportation

1. **Banana** (fruit)
2. Main ingredient is Banana
3. Central Foods
4. Local and international produce and fruit growers
5. Central Foods:
    - Local produce distributor that purchases produce from Terminal Station
    - Mostly local growers and imported fruits and vegetables to supply consumer demand
6. Mainly Ecuador
7. Processing techniques: banana plantation, harvest, shipping and storage

1. **Bacon**
2. Main ingredient is cured pork
3. Centennial Foods

4. Centennial brand bacon
5. Centennial Foods
   - Founded in 1967
   - Privately owned food company; gross corporate sales of $250M CAD
   - Company specializes in value-added (pre-prepared) meat and seafood processing and "centre of the plate" (main ingredient) foodservices sales and distribution
   - Involved in research and development of custom designing a variety of raw and pre-cooked products
   - Has 3 CFIA/USDA approved processing facilities
   - Distribution centers mostly in Western Canada: Victoria, Vancouver, Prince George, Kelowna, Edmonton, Calgary, Regina, Saskatoon, Winnipeg
6. Box states "Canadian product"
7. Processing techniques: slaughter animal; cut into pieces; addition of salt, nitrates and other ingredients; curing process and smoked; packaged for sale.

1. **Hash browns**
2. Main ingredient is potato
3. Neptune Foods
4. McCain brand
5. McCain's:
   - has some farm operations to ensure a ready supply of quality potatoes, these provide only a small percentage of the company's needs. Most potatoes are grown by independent growers who contract with McCain Foods for a supply of potatoes before planting the year's crop. McCain agronomists work closely with farmers to help them constantly improve the quality and yield of their crops.
   - McCain Foods in North America decided not to accept any GMO potatoes effective with the 2000 crop, and has instituted testing procedures
6. Various Grower's.
7. Processing techniques: potato plant growth and harvest, potato transported to McCain's processing plant for packaging.

1. **Slice of Bread**, Toasted
2. Main ingredient is wheat
3. Monte Cristo Bakery
4. Monte Cristo Bakery products
5. Monte Cristo:
   - Local bakery with retail store on West Broadway
   - Has a wholesale outlet in Burnaby
6. Assumption that wheat is from Alberta and other prairie provinces
7. Wheat processing: grown and harvested in Alberta, storage, milled, packaged, transported

1. **Glass of Milk**
2. Main ingredient is milk
3. Dairyworld
4. Dairyland brand
5. Dairyworld:
   - Sub division of Saputo Inc.
   - Saputo is a publicly traded company that has sub-divisions on dairy products (Canada and Argentina), cheese (USA) and bakeries
   - Dairyland Fluid Division Ltd. Has a number of other milk based products including Armstrong and Orchard Hill
6. Mostly BC dairy farmers
7. Processing techniques: cows milked in Fraser Valley, transported for pasteurization, divided into containers, refrigeration and storage, transportation.

(group 8)

Group 17 Spring 2004: Feasibility Analysis

Table 1. Sample table for selected fresh fruits used at UBC.

Commodity	Grown/raised in BC

Apples	No
Strawberries	Yes
Bananas	Yes
Tomatoes	No

If time is very limited, this data set could be used to calculate a crude feasibility indicator. Feasibility can be rated as follows:

- 75-100% of products available locally: re-localization is very ecologically feasible.
- 50-74% of food products available locally: re-localization is ecologically feasible.
- 25-49% of food products available locally: re-localization is somewhat ecologically feasible.
- 0-24% of food products available locally: re-localization is not ecologically feasible.

In this case, 2/4 of the products analyzed are on the BC Agriculture Commodity List, so the indicator value is 50% and re-localization is somewhat feasible.

Next, seasonality data can be added to the analysis. In Table 2, months in which a produce item is available are marked with an X. Note that seasonality is taken to include months in which the fresh product is available in storage. This could be extended to include frozen products (e.g., frozen strawberries), but only fresh produce is considered here for simplicity.

Table 2. Identifying Seasonality

Commodity	J	F	M	A	M	J	J	A	S	O	N	D
Apples	X	X	X						X	X	X	X
Strawberries						X	X	X	X			
Bananas												
Tomatoes		X	X	X	X	X	X	X	X	X	X	

Next, for each month that a product is available, determine what proportion of the quantity ordered by UBC Food Services is available locally. Speaking directly with a broker may be sufficient if a small number of products are analyzed. Otherwise, look at the total amount of the fruit/vegetable produced (or available in storage) in BC for that month. Assign a value of 1 to indicate that in that month, sufficient volume of the product is available, should UBC be willing to pay for it. A value less than one is the proportion of the required volume that could be obtained if desired. To summarize the monthly values, calculate the Sufficiency Index. The Sufficiency Index is calculated as the sum of these proportions divided by 12 months. Hypothetical data is presented in Table 3.

Table 3. Volume and seasonality

	Volume of product available locally as proportion of UBC's needs												*Sufficiency index*
Product	J	F	M	A	M	J	J	A	S	O	N	D	*(Sum/12)*
Apples	0.7	0.5	0.4	0	0	0	0	0	1	1	1	0.8	0.45
Strawberries	0	0	0	0	0	0.5	1	1	0.5	0	0	0	0.25
Bananas	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomatoes	0	0.5	1	1	1	1	1	1	1	1	0.5	0	0.75

Once the table is complete, count the number of products with a Sufficiency Index of 0.4 or higher[1] and divide by the total number of products examined. This gives a value showing the percentage of fruits/vegetables for which at least 40% of their required volume could be purchased locally in the average month. For the data in Table 3, this value is 2/4, or 50%. Comparing this to the feasibility scale, re-localization is feasible for this group of products.

(group 17)

Group 6 Spring 2004: WASD Equation

The formula for the WASD is:

WASD = $(\Sigma\, m(k) \times d(k)) \div (\Sigma\, m(k))$

where:

k = different locations of the production origin,

m = amount consumed from each location of consumption origin, and

d = distances from the locations of production origin to the point of consumption.

(Carlsson-Kanyama, 1997)

[1] Arbitrary threshold level, chosen as a "reasonable proportion" for local food at UBC during the early stages of re-localization.

Group 19 Spring 2004: Food Mileage Calculation Check sheet

UBC and AMS Food Services - Food Mileage Calculation Sheet

Menu item: _____ Date: _____

Ingredient	Distance traveled (km)	Transportation factor	Adjusted distance traveled (km)
		TOTAL	

Group 19 2004: Criterion Checklist:

Sustainability Criteria for UBC Food Suppliers: A Checklist

Supplier name: _____

□ **Over 50% of the food supplied are obtained from local sources (within British Columbia) → This criterion MUST be met in order to continue**

Food commodities are sourced from farms that:

- □ **Use ecologically sustainable practices, e.g. organic**
- □ **Provide competitive wages to its employees as well as benefits**
- □ **Provide safe working conditions and reasonable hours for its employees**
- □ **Offers a wide but seasonal variety of foods**

□ **Offers foods that are healthy and nutritious**
□ **Provides foods at a reasonable volume for large-scale retailers like UBC**
□ **Sets prices that facilitate economic profitability for both parties**

(group 19)

Group 9 Spring 2004: Production Analysis Framework

Desired Indicator	Benchmark	Primary data source
Crop yields, on a per-crop basis	BCMAFF planning for profit series -- target yields for organic crops BC yield averages for crops, 2001 census	Sales and harvest records Field plans and seeding records As units were not consistently applied (some by weight, some by count), this will be an estimate
Price per unit, on a per-crop basis	Wholesale and retail price records from local distributors, grocery stores, and box programs	Sales and harvest records
Revenue per unit area, on a per-crop basis	BCMAFF planning for profit series -- target revenues for organic crops BC yield averages for crops, 2001 census	Sales and harvest records Field plans and seeding records
Direct expense per unit area, on a per-crop basis	BCMAFF planning for profit series -- suggested direct expenses for organic crops	Farm financial records (FMIS, internal accounting records) Volunteer labor records Staff log books
Return per unit area, on a per-crop bases	Total returns sufficient to cover indirect expenses	Revenue - Direct expense This would be the single most useful economic indicator, but the most difficult to calculate due to uncertainty of its dependent indicators.

(group 9)

Group 1 Spring 2004: Volunteer Timesheet

Volunteer Time Sheet

Month: Week Starting Date:

Name of Volunteer	Number of Hours Worked					
	Monday	Tuesday	Wednesday	Thursday	Friday	Weekly Total

(group 1)

Group 1 Spring 2004: Comparison Sheet

Product	Off-Campus Store 1 Price	Off-Campus Store 2 Price	Off-Campus Store 3 Price	Off-Campus Store 4 Price	Off-Campus 5 Price

Product	Food Co-op Price	Average Off-Campus Price	Is Food Co-op Price cheaper?
			☐ Yes
			☐ Yes
			☐ Yes
			☐ Yes
			☐ Yes
			☐ Yes
			☐ Yes
			☐ Yes
			☐ Yes
		Total Marked Yes	
		Percent Marked Yes	

(group 1)

Group 11 Spring 2004: Sustainability Percentage Chart for Social Sustainability

Sustainable/Green	75-100% of customers can do their shopping within given operating hours
Mildly Sustainable/Yellow	50-74% of customers can do their shopping within given operating hours
Mildly Unsustainable/Orange	25-49% of customers can do their shopping within given operating hours

Unsustainable/Red	0-24% of customers can do their shopping within given operating hours

Group 11 Spring 2004: Sustainability Percentage Chart for Ecological Sustainability

Sustainable/Green	75-100% recyclable and organic compost material being recycled and composted
Mildly Sustainable/Yellow	50-74% recyclable and organic compost material being recycled and composted
Mildly Unsustainable/Orange	25-49% recyclable and organic compost material being recycled and composted
Unsustainable/Red	0-24% recyclable and organic compost material being recycled and composted

Group 11 Spring 2004: Sustainability Percentage Chart for Economic Sustainability

Sustainable/Green	Outlet generating revenues over and above what is needed to pay both fixed and valuable costs. Profit margins >0.
Mildly Sustainable/Yellow	Outlet generating revenues equal to its fixed and valuable costs. Profit margins =0.
Mildly Unsustainable/Orange	Outlet generating enough revenue to pay only the fixed costs. Profit margins <0.
Unsustainable/Red	Outlet not generating enough revenue to pay either its fixed or variable costs. Profit margins much <0.

Group 11 Spring 2004: Comparative Price Chart

Chart for evaluating the prices of foods at various grocery outlets (Socioeconomic Indicator)

Food Item	CO-OP Price	Caper's Price	Choice's Price
Apples	$0.65		
Bananas	$1.00/lb		
Quinoa	$2.75/lb		
Popcorn	$1.05/lb		
Sugar (454g)	$2.60		
Quick Oats	$1.05/lb		
Olive oil (500ml)	$7.50		
Green Tea	$2.35		
Dark Roast coffee	$10.00 /400g		
Milk chocolate bar	$2.60/100g		

(Group 11)

Group 11 Spring 2004: Sustainability Percentage Chart for Social-Economic Sustainability

Sustainable/Green	Food prices at the Co-op are equal to or less than prices at other stores.
Mildly Sustainable/Yellow	Food prices at the Co-op are 1-37 % more than prices at other stores.
Mildly Unsustainable/Orange	Food prices at the Co-op are 38-74 % more than prices at other stores
Unsustainable/Red	Food prices at the Co-op are 75% or greater than prices at other stores.

Group 11 Spring 2004: Sustainability Percentage Chart for Social-Ecological Sustainability

Sustainable/Green	75-100% of the campus community is aware of organic and fair trade food, local production benefits, and food systems ***Here it has been specified as indicator: the percentage of the UBC community aware of….***
Mildly Sustainable/Yellow	50-74% of the campus community is aware of organic and fair trade food, local production benefits, and food systems
Mildly Unsustainable/Orange	25-49% of the campus community is aware of organic and fair trade food, local production benefits, and food systems
Unsustainable/Red	0-24% of the campus community is aware of organic and fair trade food, local production benefits, and food systems

Group 11 Spring 2004: Food Sourcing Chart

Chart for collecting information regarding the source of the Food Co-op's food (Ecological-Economic Indicator)

Food Item	Source (Lower Mainland, BC and Washington, North America, International.)
Apple juice	
Apples	
Bananas	
Pears	
Coffee	
Tea	
Black beans	
Quinoa	
Chocolate	
Granola	
Quick Oats	
Raisins	
Olive oil	
Lentils	
Cane Sugar	
Brown Rice	
Chick peas	
Millet	

(group 11)

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Group 11 Spring 2004: Sustainability Percentage Chart for Economic Ecological Sustainability

Sustainable/Green	75% of food sold at the Co-op comes from a local source, 25% food items are imported.
Mildly Sustainable/Yellow	50% of food sold at the Co-op comes from a local source, 50 % food items are imported.
Mildly Unsustainable/Orange	25% of food sold at the Co-op comes from a local source, 75% food items are imported.
Unsustainable/Red	0% of food sold at the Co-op comes from a local source, 100% food items are imported.

Group 5 Spring 2004: Social Sustainability Chart and Actions

Social Indicator – Sustainability Criteria*: None of the categories below can be considered an indicator (that is to say, a quantifiable tool of assessment. These are criteria but all need to be specified in terms of indicators)*

Level of sustainability	Definition	Action
1. Sustainable	The entire UBC community (commuters and all on-campus residents) perceives the complete accessibility and availability of nutritious prepared and unprepared food on campus.	▪ Continue to monitor and evaluate community member satisfaction and food needs ▪ Evolve with community member food needs and strive to continual improvement of services
2. Mildly sustainable	The UBC community commuters and on-campus multiple-occupant (MO) residents perceive the complete accessibility and availability of nutritious prepared food on campus. UBC community on-campus single occupant/family (SO-F) residents have a relatively high perceived accessibility and availability of nutritious prepared and unprepared food on campus.	• Continue to provide and evaluate commuter and MO resident satisfaction and food needs • Assess SO-F resident satisfaction and food needs • Seek to improve the availability and accessibility of unprepared foods based on assessment of food needs • Evaluate services provided by the Food Co-op
3. Neutral	The UBC community commuters and on-campus MO residents perceive a moderate level of accessibility and availability of nutritious prepared food on campus. UBC community on-campus SO-F residents have a relatively low perceived accessibility and availability of nutritious prepared and unprepared food on campus.	$Assess commuter and MO resident satisfaction and food needs $Seek to improve the availability and accessibility of prepared foods based on assessment of food needs $Review and revise services provided by Food Co-op and alignment with community food needs
4. Mildly	The UBC community commuters and	¨Review the services provided by all

unsustainable	on-campus MO residents perceive a low level of accessibility and availability of nutritious prepared food on campus. UBC community on-campus SO-F residents have a very low perceived accessibility and availability of nutritious prepared and unprepared food on campus.	prepared and unprepared food outlets within the UBC Food System ¨Assess food needs of the UBC community and devise strategies to reestablish satisfaction wit h food system ¨Investigate current practices
5. Unsustainable	The entire UBC community (commuters and all on-campus residents) perceives a lack of accessibility and availability of nutritious prepared and unprepared food on campus.	¨Review the standards of practice and mandates of each food outlet within the system ¨Conduct basic assessment of community food needs and investigate discrepancies between needs and practices ¨Revise standards of practice and mandates based on research findings

(group 5)

Group 5 Spring 2004: Economic Sustainability Chart and Actions

Economic Indicator – Sustainability Criteria

The following is a table that defines the five levels of sustainability and the recommended action plans at each corresponding level. ***None of the categories below can be considered an indicator (that is to say, a quantifiable tool of assessment. These are criteria but all need to be specified in terms of indicators)***

Level of sustainability	Definition	Action
1. Sustainable	All of the UBC Food Service outlets generate profit to maintain the existing operations as well as, additional revenue to put towards further development.	Continue current business practices. Seek consumer input to help direct funding for further development. Continue to look for ways to practice and promote sustainable actions.
2. Mildly sustainable	The majority of the UBC Food Service outlets generate enough profit to maintain the existing operations and some profit for further development.	Assess all UBC outlets for differences and ways to mend gaps between successful and less successful outlets. Collect and evaluate options to enhance services and expand consumer base. Continue to look for ways to practice and promote sustainable actions.
3. Neutral	The majority of the UBC Food Service outlets generate enough profit to simply maintain existing operations (“break-even”)	Assess all UBC outlets for differences and ways to mend gaps between successful and less successful outlets. Collect and evaluate options to enhance services and expand consumer base. Continue to look for ways to practice and promote sustainable actions.
4. Mildly unsustainable	The majority of the UBC Food Service outlets generates minimal profits and	Assess all UBC outlets for differences and ways to mend gaps between

	thus relies on some outside funding in order to maintain existing operations.	successful and less successful outlets. Collect and evaluate options to enhance services and expand consumer base. Adopt and implement new practices. Gradually minimize outside funding.
5. Unsustainable	The majority of the UBC Food Service outlets relies on heavily on outside funding and yet is unable to meet existing operations.	Assess business practices at all levels in food system. Analyze financial records to identify areas of concern. Collect and evaluate options to enhance services and expand consumer base. Adopt and implement new practices. Gradually minimize outside funding.

(group 5)

Group 5 Spring 2004: Ecological Sustainability Assessment Tool

Ecological Sustainability Assessment Tool

An ecologically sustainable food service facility is one in which a variety of waste resources are available and fully utilized. This assessment tool will be used to assess the ecological sustainability rating of each food service facility on the UBC campus.

Evaluate each food service facility on the UBC campus based on the criteria in the following checklist. If a waste category is available and utilized, place a (√) in the corresponding box. If a waste category is not available or utilized, place a (**x**) in the corresponding box. To determine the total points, add up each affirmative response (√) for the ecologically sustainable measures. A qualitative sustainability rating will given to each food service facility based on the sustainability interpretation below.

Ecologically Sustainable Measures	*Kitchen*		*Food Sales Area*		*Garbage Pickup Area*	
	Available	*Utilized*	*Available*	*Utilized*	*Available*	*Utilized*
Reusable containers						
Newspaper recycling (BLUE)						
Plastic recycling (ORANGE)						
Glass recycling (GREEN)						
Metal/Tin recycling (GREY)						
Compost (BROWN)						
Garbage (RED)						
Color-coded waste system						
Waste disposal system maintenance						

Total (√'s) = _____

Sustainability Interpretation

Sustainability level	Points
Sustainable	49 – 60 points
Mildly sustainable	37 – 48 points
Neutral	25 –36 points
Mildly Unsustainable	13 – 24 points
Unsustainable	0 – 12 points

(group 5)

Group 5 Spring 2004: Ecological Sustainability Criteria and Actions

Ecological – Sustainability Criteria

Levels of sustainability	Definition	Action
1. Sustainable	The UBC community has completely implemented and maintained a comprehensive waste reduction program. Consumer utilization regarding recycling, composting, and reusable food containers is widespread on campus.	Continue to maintain the waste reduction program that diverts compostable and recyclable waste from landfills. Continue to monitor the utilization of color-coded waste systems and the distribution of reusable containers for all food service providers on campus.
2. Mildly unsustainable	The UBC community has made significant progress in the implementation and maintenance of a waste reduction program. Consumer utilization is evident on campus in significant proportions but not sufficient to meet ecological sustainability criteria.	Evaluate the waste reduction system to determine additional ways to fully utilize the system and expand the distribution of reusable containers. Expand the consumer utilization of the color-coded waste system to divert the maximum quantity of waste from landfills.
3. Neutral	The UBC community has policies and initiatives in place to reduce waste however an increase in waste reduction is necessary to attain ecological sustainability. Increased consumer utilization is required to meet ecological sustainability criteria.	Examine the waste reduction program to determine areas for improvement. Continue to apply the waste reduction policies and initiatives to increase ecological sustainability. Explore effective methods of improving consumer utilization. Analyze the constraints of implementing a color-coded waste system.
4. Mildly Unsustainable	The UBC community has attempted to implement and maintain a waste reduction program. Small pockets of consumer utilization exist on campus but are not sufficient to meet ecological sustainability criteria.	Implement a waste reduction program to increase the quantity of compostable and recyclable waste that is diverted from landfills. Implement a color-coded waste system and reusable container program for UBC food service providers.

5. Unsustainable	The UBC community does not employ a waste reduction program of any kind.	Assess the status of the current waste system to develop a sustainable waste reduction strategy. Launch a color-coded waste system and establish a reusable container program for all food service facilities.

(group 5)

Group 5 Spring 2004: Social-Economic Sustainability Criteria and Actions

Social - Economic Indicator – Sustainability Criteria

The following is a table that defines the five levels of sustainability and the recommended action plans at each corresponding level.

Level of sustainability	Definition	Action
1. Sustainable	The entire UBC community perceives unprepared and prepared food products as being both personally acceptable and affordable. Similar products correlate strongly in cost with those in surrounding areas.	Constant monitoring of food products and community perceptions are necessary to maintain high levels of food security in acceptability and affordability dimensions. Ability to forecast changing needs and/or adapt quickly and accordingly is an asset to maintain sustainability.
2. Mildly sustainable	The majority of community members perceive unprepared and prepared food products as being both acceptable and affordable. Similar food products are comparable in cost to those in surrounding areas.	Collect and evaluate input from community. Focus on specific areas identified as being unacceptable and/or unaffordable. Work with all stakeholders to increase awareness and implement new practices that promote sustainability across all stages in a food system.
3. Neutral	Community members perceive unprepared and/or prepared food products as being acceptable and/or affordable. Thus, acceptability and affordability are questionable. Similar food products are comparable in cost to those in surrounding areas.	Collect and evaluate input from community. Focus on specific areas identified as being unacceptable and/or unaffordable. Work with all stakeholders to increase awareness and implement new practices that promote sustainability across all stages in a food system.
4. Mildly unsustainable	Only a minority of community members perceive unprepared and prepared food products as being both acceptable and affordable. Similar food products are generally more expensive within the UBC community as compared to those in surrounding areas.	Collect and evaluate input from community. Focus on specific areas identified as being unacceptable and/or unaffordable. Work with all stakeholders to increase awareness and implement new practices that promote sustainability across all stages in a food system.
5. Unsustainable	The UBC community perceives both unprepared and prepared food products as not being acceptable and affordable. Similar food products are considerably higher in price to those in surrounding	Collect and evaluate input from community. Focus on specific areas identified as being unacceptable and/or unaffordable and implement new practices accordingly. Further studies

	areas.	and surveys are required to identify ways to reduce costs to consumers and address acceptability concerns.

(group 5)

Group 5 Spring 2004: Social-Ecological Sustainability Criteria and Actions

Social-Ecological – Sustainability Criteria

The following is a table noting the different levels of sustainability and suggested intervention strategies to employ:

Level of sustainability	Definition	Interpretation
1. Sustainable	The UBC community understands the sustainability concept. This knowledge is demonstrated by environmentally friendly behavior.	Continued education on sustainability and UBC food system for new students and community members to maintain current understanding and behaviors. Continue to provide resources to employ sustainable behaviors.
2. Mildly sustainable	Community members have some understanding of sustainability. This knowledge may not translate into environmentally friendly behavior practices.	Educate the community on sustainability and UBC food system. Education should also target implementation of environmentally friendly behaviors. Ensure resources are available to support such behaviors.
3. Neutral	Community members do not have a complete understanding of the sustainability concept. Also, the lack of understanding interferes with employing environmentally friendly behaviors.	Educate community on sustainability and UBC food system to improve understanding of these concepts. Educate on environmentally friendly behaviors. Ensure resources are available to support such behaviors.
4. Mildly unsustainable	The UBC community has little understanding of the sustainability concept. It appears there is a lack of environmentally friendly behaviors practiced on campus.	Educate community on sustainability and UBC food system to facilitate sustainable behaviors. Ensure resources are available to support such behaviors.
5. Unsustainable	The UBC community lack in-depth understanding of sustainability and UBC food concepts. There is a lack of environmentally friendly behaviors practiced on campus.	Must employ community education on sustainability and the UBC food system if the community is to become informed and thus act responsibly with regards to these concepts. Ensure resources are available to support such behaviors.

(Group 5)

Group 5 Spring 2004: Ecological–Economic Assessment tool

Ecological-Economic Indicator – Assessment Tool

Food mileage calculation assessment sheet

Date: _____

_____ *Source*: _____

_____

Produce/product	Point of origin	Distance traveled (km)	x	Weight (tonnes)	=	Tonne-Kilometres (T-Km)	WASD
*Apple (6)							
*Pear (6)							
*Yams (6)							
*Carrots							
*Squash							
*Broccoli							
*Green onions							
*Potatoes, russet (6)							
**1% milk (2 L)							
**Yogurt (750 g)							
**Cheese, cheddar							
**Short grain brown rice							
**Kidney beans, dried							
**Couscous							
**Dark roast coffee							
**Apple juice							

* Produce items selected for assessment are subject to season and food co-op availability and are meant to serve as a guide for food mileage assessment. The produce items presented are listed as in season for February-March from Pro-Organics. With date of assessment, produce items may vary.

** Items are subject to food co-op availability and are meant to serve as a guide for food mileage assessment.

(Group 5)

WASD = $\frac{\Sigma [m(k) \times d(k)]}{\Sigma m(k)}$

Where:
m = amount (weight) consumed from each point of production
k = different points of production
d = distance from each point of production to each point of use or sale

Level of Sustainability

1 = Safeway: Food Co-op T-Km > 20
2 = Safeway: Food Co-op T-Km ≤ 20
3 = Food Co-op: Safeway T-Km

(group 5)

Group 20 Spring 2004: WASD Equation and Ecological Sustainability Indicator Scale

- Formula for calculating Weighted Average Source Distance (WASD):

*WASD = $\frac{\sum (m_k \times d_k)}{\sum m_k}$

m- amount consumed (kg),
k- location of the production,
d- distances from the locations of production to the point of consumption (km)
*From Pirog, *et.al.* (2001)

(WASD will be calculated for each type of food proposed in Appendix A as well as a random selection of other food products)

- Ecological indicator scale:
  (5 is the highly sustainable and 1 the highly unsustainable)

1= food produced outside North America; food miles is more than 24,256,000 square km

2= food produced in North America; food miles is between 9,093,507 square km and 24,256,000 square km radius

3= food produced in Canada; food miles is between 925,186 square km and 9,093,507 square km radius

4= food produced in BC; food miles is between 114.67 square km and 925,186 square km radius

5= food produced in Vancouver; food miles less than 114.67 square km radius

(Numbers are geographical statistics from http://atlas.gc.ca)

(group 20)

Group 12 Spring 2004: Student Directed Seminar Information

Website for the development of a Student Directed Seminar: http://www.vpacademic.ubc.ca/learning/sdshome.htm

A Brief History of developing a Student Directed Seminar

The University of British Columbia is piloting a program of Student Directed Seminars. As an expansion of the directed studies option offered by most departments, this program allows senior undergraduate students to initiate and coordinate small, collaborative, group learning experiences. The UBC proposal is modeled on an established student-directed seminar program at the University of California at Berkeley.

A student (or group of students), in the third year of undergraduate study or beyond, proposes a course not currently offered at UBC. If a professor agrees to sponsor the proposal, the student proceeds to develop a course outline under the guidance of this faculty sponsor (or in some cases, multiple faculty sponsors). A Student Directed Seminars Advisory Committee considers course outlines for final approval. If approved, the student-initiated course is advertised to the general student body. All upper-level students are eligible to participate, but applicants are subject to a selection process. The minimum enrollment of each class is eight, the maximum fifteen.

Student Directed Seminars create one more avenue through which undergraduate students can become active participants in a UBC community of learners. Student coordinators have the unique opportunity of working closely with a member of faculty to explore a topic. Participants, as members of a self-directed group, also have a high degree of control over their own learning experience.

What should your course be about?

Are there interdisciplinary areas of inquiry that have been overlooked on campus? Do you have an area of research you wish to pursue in combination with other students? In order to present a successful proposal to the Student Directed Seminars Advisory Committee you need to be sure that what you are contemplating does not overlap with what we already offer at UBC. You must have a faculty advisor and departmental approval. As well you must have a topic that is academically sound and that will attract at least eight other students.

What does a Course Coordinator Do?

The student who initiates the course (student-coordinator) is not an instructor. The coordinator's role is that of a facilitator. The coordinator is responsible for setting the parameters of course content and structure, organizing class activities, and facilitating the evaluation of participants and of the course. The participants have an important role in refining the details of the course, including content, assignments, and evaluation procedures, within the parameters set by the student-coordinator.

In preparation for their role, student-coordinators complete a workshop on facilitation skills and course development offered by the Centre for Teaching and Academic Growth.

What does the Faculty Advisor Do?

> Your faculty advisor should be someone who is genuinely supportive of student-initiated education, and of your course in particular. You should feel free to discuss your ideas with your advisor. The faculty sponsor guides the student/students in developing the course outline, generating reading and resource lists and presenting marking options. They are not expected to attend most class meetings, but will be available to the student-coordinator for guidance and to other members of the class if necessary. The faculty advisor will take care of the administrative end of submitting the class marks. They may agree to mark or at least read and comment on the written information produced by the students in the class. This is dependent upon the wishes of the faculty sponsor and the marking scheme the class ends up adopting.

Future faculty advisors may wish to speak to previous advisors to get a feel for their roles. An email directory to facilitate the exchange of ideas and information is under consideration.

Course Design

Your proposal should cover the following topics in a general manner and be approximately 2-3 pages in length. Please submit them either on paper (to room 545 in the Main Library building at 1956 Main Mall) or as an email attachment (to sdo.learning@ubc.ca) by 4:30 Thursday, August 28th, 2003. Any questions can be sent to the same address or phone 822-9818.

Course Content

- What is focus of the course?
- Who might be interested in the course?
- What are the requirements of the course?
- Will interested registrants need to submit prerequisites, certain grades, or an expression of interest?

Course Structure/format

- How often will the course meet?
- What role will the coordinator take vs. other participants? Will everyone have a chance to lead or facilitate a class?
- How do you see the structure of the class? E.g. lecture, seminar, discussion group, films, field trips….
- Will the class include guest lectures? discussions of readings? debates?

Course requirements and evaluation

- What are the assignments?
- What form will the assignments take? Collaborative research project, class presentations, essays, etc.
- How will they be evaluated?
- What other criteria will students be marked on? E.g. participation?
- Remember that the course is an exploration with other students and a democratic process so be prepared for changes to this section during your initial class meetings. It is vital to get the course marking scheme and criteria for assessment spelled out clearly before the UBC course withdrawal date.

Potential faculty sponsor(s)

- Who might sponsor your course?
- Do you have contact information?
- Do you think the department will give approval?

Rationale for why this course should be offered at UBC

- Why would you like to see this course offered at UBC?
- Will there be a demand for this course?
- Will it be sufficiently rigorous?

Qualifications of the coordinator(s)

- Please include:
- Name, student number and contact information (phone #, email address)

- Year and program of study
- Related work / volunteer experience (including peer leadership, group facilitation, etc.)
- Transcript / statement of grades

This information will be kept strictly confidential.

(group 12)

Group 16 Spring 2004: Sustainability Continuum

Value of Responses	Level	Interpretation
5 or 80-100%	Very sustainable	Ecological – Most participants in the UBC community participate in the recycling programs, help to reduce waste and are aware of the sustainability initiatives. Social – Most participants are aware, participate and feel that the sustainability initiatives are important. Economic – Most participants are aware of the benefits of sustainable agriculture and would prefer to purchase these products.
4 or 60-80%	Sustainable	Ecological – A fair portion of participants in the UBC community participate in the recycling programs, help to reduce waste and are aware of the sustainability initiatives. Social – A fair portion of participants are aware, participate and feel that the sustainability initiatives are important. Economic – A fair portion of participants are aware of the benefits of sustainable agriculture and would prefer to purchase these products.
3 or 40-60%	Somewhat sustainable	Ecological – Some participants in the UBC community participate in the recycling programs, help to reduce waste and are aware of the sustainability initiatives. Program could be improved. Social – Some participants are aware, participate and feel that the sustainability initiatives are important. Program could be improved. Economic – Some participants are aware of the benefits of sustainable agriculture and would prefer to purchase these

<table>
<tr><td></td><td></td><td>products. Program could be improved.</td></tr>
<tr><td>2 or 20-40%</td><td>Mildly unsustainable The Sustainability Continuum
<table><tr><th>Value of Responses</th><th>Level</th><th>Interpretation</th></tr><tr><td>5 or 80-100%</td><td>Very sustainable</td><td>Ecological –
Most participants in the UBC</td></tr><tr><td>4 or 60-80%</td><td>Sustainable</td><td>Ecological –
A fair portion of participants in the</td></tr></table></td><td>Ecological –
A few participants in the UBC community participate in the recycling programs, help to reduce waste and are aware of the sustainability initiatives. Program needs changes or improvement.
Social –
A few participants are aware, participate and feel that the sustainability initiatives are important. Program needs changes or improvement.
Economic –
A few participants are aware of the benefits of sustainable agriculture and would prefer to purchase these products. Program needs changes or improvement.</td></tr>
</table>

				would prefer to purchase these products.	
		3 or 40-60%	Somewhat sustainable	Ecological – Some participants in the UBC community participate in the recycling programs, help to reduce waste and are aware of the sustainability initiatives. Program could be improved. Social – Some participants are aware, participate and feel that the sustainability initiatives are important. Program could be improved. Economic – Some participants are aware of the benefits of sustainable agriculture and would prefer to purchase these products. Program could be improved.	
1 or 0-20%	Very unsustainable				Ecological – Not too many participants in the UBC community participate in the recycling programs, help to reduce waste and are aware of the sustainability initiatives. Program needs drastic changes. Social – Not too many participants are aware, participate and feel that the sustainability initiatives are important. Program needs drastic changes. Economic – Not too many participants are aware of the benefits of sustainable agriculture and would not prefer to purchase these products. Programs needed or drastic changes need to be made to existing ones.

(group 16)

Group 4 Spring 2004: Economic Cost and Benefit Analysis of Food Purchasing Policies

1) From whom the UBC and AMS food services are purchasing.

	COST	BENEFITS
BUYING FROM LOCAL FARMER	▪ Limited variety ▪ Limited quantity may not meet demand of UBC's market ▪ Would have to deal with numerous farmers to meet demand and increase food variety.	▪ Decrease transportation mileage and related costs ▪ Recycles money back into local economy
BUYING FROM DISTRIBUTOR	▪ May not economically benefit local market ▪ Increased food mileage ▪ Food production practices and sources may be unknown.	▪ Increased food quantity may keep food prices low. ▪ Increased food variety. ▪ One could provide many food products therefore, less time consuming, less paper work, less human intervention.

(group 4)

Group 4 Spring 2004: Social, Economic and Ecological Costs and Benefits of Adopting Sustainable Food Practices

ANALYZING SOCIAL, ECONOMIC AND ECOLOGICAL COSTS AND BENEFITS OF ADOPTING SUSTAINABLE FOOD PRACTICES:

		COST			BENEFITS	
	Social	Economic	Ecological	Social	Economic	Ecological
Locally Grown Foods	Less Food variety	Higher cost of food Less profit for producers	N/A	Enhanced community ties	Money reinvested in local economy	Less pollution due to less transportation. Less food mileage
Ecologically Sound Foods	Increased costs due to higher labor needs Limits variety and quantity	More expensive for farmers to grow thus less profit	No pesticide preservative use May have limited shelf life	Higher contribution to sustainability	Higher contribution to local economy	Less environmental degradation Less pesticide use and consumption in the food chain
Disposal Methods	Require more effort on part of consumer to recycle and compost	Maintaining and providing composts, recycling bins.	N/A	Less landfills.	Less invested in garbage bins, bags and disposal.	Garbage will shrink. Increase nutrients in soil. Less landfills, more parks!!
Decreasing Food Packaging	Will have to bring own utensils etc.	Provide more re-usable utensils and plates.	N/A	More of a home feeling	Less ongoing cost just one time cost of cutlery and plates. Food prices can decrease due to less packaging cost	Less destruction on ozone and less garbage.

Campus Wide Education Program.	Time and effort must be invested into education	Money must be invested into education program	N/A	Education and awareness promote improvements in sustain-ability	Increases in sustainability helps stimulate local rather than foreign economies	More education will result in a decreased ecological footprint

(group 4)

Group 2 Summer 2004: Feasibility Analysis

Table 5: BC produce that UBC Food Services are currently purchasing from Allied Food Services and is also available cheaper at Van-Whole Produce Ltd.

UBCFS currently purchasing non-locally-produced products	**UBCFS currently purchasing locally-produced products**
Broccoli Crowns	Bok Choy
Cabbage Green	Bok Choy Baby
Lettuce Red Leaf	Herb Basil
Lettuce Iceberg	Herb Mint Leaves
Pea Sugar	Herb Cilantro
Sui Choy	Herb Tarragon
Tomato Cherry (Assuming 1 basket is 340g)	Lettuce Butter
	Mushroom Oyster
	Parsley
	Pepper Yellow
	Spinach Bunch

Table 6: BC produce that AMS Food Services are currently purchasing from Central Foods Co. Ltd. and is also available cheaper at Van-Whole Produce Ltd.

AMSFS currently purchasing non locally-produced products	**AMSFS currently purchasing locally produced products**
Herb Mint Leaves	Bok Choy
Herb Basil	Cabbage Green
Lettuce Iceberg	Kale Green
Pea Sugar	Lettuce Butter
Apple Red Delicious	Lettuce Green Leaf
	Lettuce Red Leaf
	Lettuce Romaine
	Mushroom Oyster
	Onion Green
	Parsley
	Pepper Yellow
	Spinach Bunch
	Sui Choy

Price Comparison: Allied Food Service vs. Van-Whole Produce Ltd.

Commodity	**Van-Whole Produce Ltd. BC grown**	**Allied Food Services - UBCFS**		
	Price	**Price**	**Origin**	
Alfalfa Sprouts	8/ 12x4oz	7.35/12cups	BC	
Beets	9/12's	0.65/lb	BC	*

Broccoli Crowns	12/20lb	14.1/20lb	**US**	
Bok Choy	8.4/30lb	9.50/30lb	BC	
Bok Choy Baby	11/30lb	11.6/30lb	BC	
Cabbage Green	12/50lb	15.2/50lb	**US**	
Carrots	12/24's	2.72/5lb(US); 2.65/5lb (AB)	**US/AB**	*Allied's locally produced carrots
Cucumber Long Eng	0.94/ea	0.70/ea	BC	are cheaper than imported carrots
Herb Basil	0.83/ea	1.05/ea	BC	
Herb Mint Leaves	0.5/ea	1.30/ea	BC	
Herb Rosemary	1.17/ea	1.15/ea	BC	
Herb Thyme	1.3/ea	1.20/ea	BC	
Herb Cilantro	0.22/ea	0.40/ea	BC	
Herb Oregano	1.29/ea	1.10/ea	BC	
Herb Tarragon	1.17/ea	2.00/ea	BC	
Leeks	15/30lbs	2.60/ea	**US**	*
Lettuce Butter	8/24's	10.3/24's	BC	
Lettuce Red Leaf	0.33/ea	0.70/ea	**US**	
Lettuce Iceberg	0.46/ea	0.63/ea	**US**	
Mushroom Oyster	4.50/lb	4.65/lb	BC	
Mushroom Portabella	4.25/lb	4.00/lb	BC	
Parsley	12.0/60's	18.0/60's	BC	
Pea Sugar	1.00/lb	2.10/lb	**Imported**	
Pepper Red	1.81/lb	0.8/lb(US); 0.97/lb (Mx)	**US/Mexico**	
Pepper Yellow	19.0/11lb	23.45/11lb	BC	
Potato Small White	37.8/50lb	15.35/50lb	**US**	
Radish Bunch	14.0/4oz	13/48's	BC	
Spinach Bunch	11.0/24's	12.0/24's	BC	
Sui Choy	0.26/lb	0.45/lb	**US**	
Tomato Cherry	19.25/ 16x340g (1.2/bsk?)	1.38/bsk	**Mexico**	
Apple Red Delicious	0.18/ea	0.15/ea (BC); 0.22 (US)	**US/BC**	*Allied's locally-produced
Apple Spartan	0.32/ea	0.28/ea	BC	is cheaper than imported ones.
Note: * indicates that price is not comparable due to different units.				

Price Comparison: Central Foods Co., Ltd. vs. Van-Whole Produce Ltd.

Commodity	**Van-Whole Produce Ltd. Price**	**Central Foods Co., Ltd. - AMSFBS Price**	**Origin**	
Alfalfa Sprouts	8/ 12x4oz	6.5/12cups	BC	
Beets	9/12's	12.25/25lb	BC	*
Broccoli Crowns	12/20lb	14.84/14's	**California**	*
Bok Choy	8.4/30lb	8.76/30lb	**BC**	
Cabbage Green	12/50lb	14.95/50lb	BC	
Cabbage Red	20.5/50lb	19.9/50lb	**Quebec**	
Cucumber Long English	0.94/ea	.81/ea	BC	
Herb Basil	0.83/ea	1/ea	**Import**	
Herb Mint Leaves	0.5/ea	1.2/ea	**Import**	
Herb Rosemary	1.17/ea	1/ea	**Import**	
Herb Thyme	1.3/ea	1.1/ea	**Import**	

Kale Green	0.33/ea	0.50/ea	BC	
Leeks	15/30lbs	2.18/ea	**California**	*
Lettuce Butter	0.33/ea	0.54/ea	BC	
Lettuce Gr Leaf	0.38/ea	0.43/ea	BC	
Lettuce Red Leaf	0.33/ea	0.41/ea	BC	
Lettuce Iceberg	0.46/ea	0.78/ea	**California**	
Lettuce Romain	0.38/ea	0.44/ea	BC	
Mushroom Oyster	4.50/lb	4.69/lb	BC	
Mushroom Portobello	4.25/lb	3.5/lb	BC	
Onion Green	10.0/48's	12/48's	BC	
Parsley	12.0/60's	13.25/60's	BC	
Pea Sugar	1.00/lb	1.96/lb	**China**	
Pepper Red	1.81/lb	28.25/case	**Mexico**	*
Pepper Yellow	19.0/11lb	24.75/11lb	BC	
Potato Small New	16.5/50lb (white)	41.5/50lb	BC	
Potato Small White	37.8/50lb	18.1/50lb	**California**	
Radish Bunch	14.0/4oz	13.25/48's	**California**	*
Spinach Bunch	11.0/24's	11.25/24's	BC	
Sui Choy	0.26/lb	0.28/lb	BC	
Tomato Cherry	19.25/ 16x340g (1.2/bsk?)	1.28/ea	**Mexico**	*
Tomato Roma	13.50/11lb	16.25/caseA	Mexico	*
Apple Red Delicious	0.18/ea	0.245/ea	**Washington**	

Note: * indicates that price is not comparable due to different units.

(Group 2, Summer 2004)

APPENDIX F

Methods of Data Collection: Questionnaires, Interview Guides

Group 7 Spring 2004: Questionnaire

Questionnaire on Food System Awareness
Intended Audience: All Visitors or Customers of Agora

1) How do you rate your general level of awareness with respect to food system issues?

High ☐

Moderate ☐

Low ☐

2) List the 3 issues you feel are most important with respect to the food system?
3) Have Agora's existence, example and activities caused you to think or think more deeply about food system issues in the past 12 months?

Several times ☐
Once or twice ☐
Not at all ☐

4) Do you think sustainability as a food system issue is

Very important ☐

Somewhat important ☐

Not important ☐

5) Rank the following indicators of food system sustainability in terms of their importance to you

Profitability ☐

Food Security ☐

Recycling/composting ☐

Other – please specify ☐

6) Rank the following issues in terms of their importance to you

Food miles ☐

Production methods ☐

Composting/recycling ☐

7) Rank the following issues in terms of their importance to you

Use of chemical inputs in agricultural production ☐

Use of water conservation technology in production ☐

Use of low/zero tillage methods in production ☐

8) Rank the following issues in terms of their importance to you

Price of food at the till ☐

Diversity of food offerings available ☐

Number of outlets and hours of operation ☐

9) Rank the following issues in terms of their importance to you

Buying fair trade products ☐

Reducing food miles ☐

Supporting local producers ☐

(group 7)

Group 7 Spring 2004: Questionnaire

Questionnaire On Food Security & Customer Demand.

Intended Audience: All Visitors or Customers of Agora

1) How often do you come to Agora?
   a. Never
   b. Once a week
   c. Two to three times a week
   d. More than three times a week
2) In your perception, are the food options available at Agora suited your preferences?
   a. Yes
   b. No
3) Would you like to see Agora provide more full-meal options?
   a. Yes
   b. No
4) If yes, what meals would you like to see sold at Agora?
   a. Pasta dishes
   b. Sandwiches
   c. Grill items
   d. Other – please specify
5) What convenience foods would you like to see sold at Agora?
   a. Fruit
   b. Chocolate bars
   c. Baked goods
   d. Other - please specify
6) Are Agora's operating hours suited to your needs?
   a. Yes
   b. No
   c. If no, please specify what hours do suit your needs.
7) What is your perception of the current food prices at Agora?
   a. Cheap/ Inexpensive
   b. Fair
   c. Expensive
8) How much do you spend to buy food in a week?
   a. Less than $ 50
   b. $ 50 to $ 100
   c. More than $ 100
9) What is your disposable income per month?
   a. Less than $ 200
   b. $ 200 - $ 500
   c. $ 500 - $ 1000
   d. More than $ 1000
10) In your opinion, how much is the suitable cost for one nutritious meal?

a. $ 3 - $ 4
b. $ 4 - $ 5
c. $ 5 - $ 6
d. More than $ 6

11) Would you be interested in pre-ordering lunches from Agora?
e. Yes, one day in advance.
f. Yes, on a weekly basis.
g. Yes, on an ad hoc basis.
h. No.
i. If yes, please provide contact information.

12) Would you be interested in having Agora cater your meetings and other events in MacMillan?
a. Yes
b. No
c. If yes, please provide contact information.

13) What is your vision for Agora?

Thank you for your time in completing this questionnaire.

(group 7)

Group 8 Spring 2004: Questionnaire

Questionnaire for *(Supplier Name):*

UBC Food Providers (UBC Food and Beverage Services & UBC Alma Mater Society Food Services) is committed to local producers and will make an effort to support the sustainability initiative at UBC. The following questions are designed to create awareness of food origins and the indirect impact on food costs:

1. From which farms does *(Supplier Name)* purchase from?
2. What do you know of the practices of these farms?
3. How many of your products are *(Supplier Name's)* own signature brand?
4. Where are *(Supplier Name's)* processing plants located?
5. From which private food companies does *(Supplier Name's)* purchase from?
6. Which of these companies are within BC?
7. Within Canada?
8. Which products are from outside Canada and from which countries?
9. For what reason does *(Supplier Name)* purchase items from outside Canada?
   Check which one(s):
   - O Price
   - O Availability
   - O Variety
   - O Consumer Demand

(group 8)

Group 17 Spring 2004: Questionnaire

Questionnaire: Awareness of a Local Food System

Please check off one box for each question.
(0=highly disagree, 1=somewhat disagree, 2=neutral, 3=somewhat agree, 4=highly agree)

Attitude

	0	1	2	3	4
I am concerned with the origin of my food.					

I am supportive of the development of a local food system.					
I prefer to eat a seasonal diet rather than relying on imported food.					
I am concerned about the environmental implications of my food choices.					
I think that a local food system will not affect the diversity of food available.					

Belief

	0	1	2	3	4
I believe UBC farm has great community and educational opportunities.					
I believe that purchasing locally grown food contributes to community development.					
I believe locally grown produce is of higher quality than imported produce.					
I believe a local food system will be an important contributor to a sustainable UBC					
I believe UBC should encourage people to buy more locally grown produce.					

Behavior

	0	1	2	3	4
I have purchased from the UBC Farmers' Market.					
I am willing to pay slightly more for locally grown produce.					
My diet usually varies with the seasons.					
I usually try to buy produce that was grown in BC.					
I have participated in UBC farm activity.					

Identity
1. Gender:
1>male 2>female
2. Position at UBC:
1>undergraduate student 2>graduate student 3>faculty 4>other
3. Faculty:
1>Agricultural science 2>Arts 3>Commerce 4>Science
5>other (please specify:_____)
4. Have you ever taken courses or participated in activities (reading, volunteering, etc) which focus on sustainable local food system?
1>Yes 2>No

2004-03-18
AGSC 450: (Group17)

Thank you for taking the time to complete our questionnaire.
The results and analysis of this questionnaire will be available on the AGSC 450 Food System Project Website by December 2004.

Questionnaire evaluation guide:

Add up score out of 60 to determine level of awareness and feasibility of introduction of local and seasonal food on campus.
Total score out of 60:

- 0-15: Indicates a very low level of awareness and interest in the source of food purchased and eaten. Introducing local and seasonal food choices at this time would not be feasible or effective. Introduction on basic educational and promotional tools needed.
- 15-30: Indicates a low level of either awareness or concern for the food system. Introducing local and seasonal food choices at this time would still not be feasible or effective. More education and promotion is needed before the adoption of a local or seasonal diet will be considered.
- 30-45: Indicates a moderate level of awareness and concern for the food system. Further education and promotion of local and seasonal food choices would be very successful in increasing market demand. Introduction of some local and seasonal food choices on campus is feasible.

- 45-60: Indicates a very high level of awareness and interest in the source of food purchased and eaten. Individual is willing to make personal sacrifices to support a sustainable food system and places a high value on sustainability and social responsibility of food choices. Market demand for local and seasonal food choices is high; therefore, it would be economically and socially feasible to provide more local and seasonal food options.

(group 17)

Group 13 Spring 2004: Questionnaire:

I. Willingness to pay for locally produced food	Circle
I. Are you willing to pay more for food that is produced locally?	Yes No
II. If yes, how much more would you be willing to pay?	up to 5% up to 10% up to 20% > 20%
III. Do you consciously look for labels regarding food origins?	Yes No
IV. Do you think that current food labels supply consumers with sufficient information to make informed decisions about their food purchases?	Yes No

o *If No please elaborate*

_____

II. Acceptance of a seasonal menu

The growing season in BC is limited by seasonal variation. Therefore consumers cannot expect local producers to supply them with a constant variety of fresh produce throughout the year. If consumers wish to support local food producers, they must be willing to adapt a seasonal diet.

1. What percentage of food do you consume that is imported?	100% 75% 50% 25% 0 Unsure
2. Would you be willing to give up some imported foods in favor of more local produce?	Yes No
3. Are you familiar with the concept of seasonality in relation to food?	Yes No

III. General Attitudes

1. How much do you value food variety?	High Med

Low

2. Do you make a conscious effort to purchase seasonal produce? Yes / No

IV. Seasonal Diet

1. Are you willing to refrain from eating broccoli 7 months of the year? Yes / No

2. Are you willing to refrain from eating carrots 6 months of the year? Yes / No

3. Are you willing to limit your vegetable intake, between March – June, to only beets, red-cabbage, leeks, lettuce, potatoes, radishes, spinach, Chinese vegetable, green onion, white turnip, and field rhubarb? Yes / No

V. Knowledge of locally produced food

1. Do you know what locally produced foods can be purchased during the winter months?

Bananas
Potatoes
Oranges
Apples
Cabbage
Tomatoes
Asparagus

2. Do you feel there are adequate resources providing you with information about locally produced food and your food system in general? Yes / No

3. If you answered *No* to the above question where could improvements be made?

_____

(group 13)

Group 6 Spring 2004: Survey

Questionnaire – Food Service Providers in the Village and West 10th

1. Would you purchase more fresh produce from a local source if it could be grown in closer proximity to your business?

2. If the capacity to produce food at UBC Farm were increased would you consider purchasing fresh produce from UBC Farm for sale at your establishment?

3. Would you be willing to enter into a contractual agreement with UBC Farm to produce food for your business?

4. What types of incentives would you view as acceptable in increasing your reliance on locally produced foodstuffs and supporting a local food economy?

Questionnaire – UBC Consumers

1. Do you know what food mileage is?

2. What are some of the advantages of food miles?

3. Would you buy a local product (e.g. Apples) that was more expensive than an imported product?

4. "A community enjoys food security when all people, at all times, have access to nutritious, safe, personally acceptable and culturally appropriate foods obtained through normal food distribution channels" (Kalina, 2001) From this statement, how would you rate your food security?

5. Are there culturally diverse and appropriate foods available to you on campus?

6. If you wish to add anything to the definition of food security or have any comments, please use the space provided.

(group 6)

Group 19 Spring 2004: Questionnaires

Food Mileage Survey for the UBC Community

General Questions

1. **Are you aware that the Fuji apple found at your local supermarket traveled over 8500 kilometers from China to arrive there? Yes No**

2. **There are ecological "costs" involved in transporting foods over long distances, including increased use of fossil fuels, which promote global warming.**

   2.1. Are you aware of these ecological costs that may be associated with imported foods? Yes No

3. **Are you aware that foods imported from other countries may have been produced under socially unacceptable circumstances, e.g. very low wages and unsafe working conditions? Yes No**

4. **Have you ever heard of the term "food miles"? Yes No**

   4.1 If yes, what are your ideas on it?

   _____

   4.2 If no, what do you think it might mean?

   _____

For Consumers

1. Which factors influence your food purchasing choices? Rank them in order of importance (1 = most important, 5 = least important)

	Factor	Rank
a)	Cost	____
b)	Local rather than imported	____
c)	Quality	____
d)	Produced using environmentally friendly practices	____
e)	Availability	____

2. How important is it to you to consume locally produced foods?

_____

3. Would knowing that a food item was produced in BC encourage you to purchase it if it was the same price as an identical item produced overseas? Yes No

4. Would knowing that a food item was produced in BC encourage you to purchase it if it was more expensive as an identical item produced overseas? Yes No

4.1. If yes, up to how much would you be willing to pay? (e.g. 5%, 10%, 20%, etc.)

_____

5. Consumption of imported foods may result in greater environmental damage due to increased use of transportation and packaging which may lead to greater amounts of waste produced. Socially, unjust working conditions may have been involved in the production of such foods and the nutritional value of such foods may be reduced

5.1. Would awareness of such environmental and social issues associated with an imported product deter you from purchasing it? Yes No

6. Are you willing to eat seasonally (i.e. consume produce only according to what is locally available in a given season)? This would mean that fruits such as papayas and strawberries may not be available in the winter.
Yes No

6.1. If no, why not? _____

7. What is your ethnicity? _____

7.1. What is a favorite food from your home country? _____
7.2. Is it easily accessible (i.e. available at your local grocery store)? Yes No
7.3. If no, does it need to be imported? Yes No
7.4. If yes, would you be significantly affected if this item was not imported, and thus was not available to you locally? Yes No

For Producers

1. Would the UBC farm have difficulty providing the UBC community with the types and volumes of food required to fulfill the social criteria of availability, affordability, variety, cultural acceptability? Yes No

1.1. If yes, what would are some of the barriers?

_____

1.2. What types of extra inputs (such as labor, land, capital) would be required to overcome these barriers?

_____

For Retailers

1. **Cost-wise, how would the shift to purchasing and providing only local food items to your customers affect your bottom line?**

   _____

2. **Would not selling certain types of food items year-round affect your revenue? Yes No**

   2.1. If yes, to what extent? _____

3. **Would you provide locally produced rather than imported food items if the costs of purchasing them were the same? Yes No**

   3.1. What if local food items cost more?

   _____

   3.2. What other factors would affect your purchasing decisions if cost was not an issue?

   _____

(group 19)

Group 9 Spring 2004: Guiding Interview Questions

Sample questions for UBC Food Services

UBC Food services has expressed interest in purchasing more food from the UBC Farm, but notes that there are several barriers to establishing a more broadly-based contract. Based on Group 14's research from 2004 these include:

- Availability of products year round
- Providing the quantity required, the UBC Farm does not produce the volume or selection of products that are required to sustain UBC Food Service, as well a significant volume of what the UBC Farm sells is currently being sold at the Farmers Market
- The consistency of quality in appearance and size of products – as to what the general public/customers are used to seeing at the supermarkets

If the volume and selection were made available by the UBC Farm then details that would have to be worked out would include:

- Making the UBC Food Service's current produce suppliers aware that they are no longer the exclusive produce provider to UBC. This would have to be done as an addendum to the current contract. If the effect was significant in terms of volume reduction it could have an adverse effect on the UBC Food Service's purchasing price, thereby limiting the overall success of the partnership.
- Establishing a standard with the UBC farm regarding the quantity and selection of product needed, delivery times, cleanliness of product, quality and uniformity of product in terms of appearance, and payment terms.

Given these findings from our colleagues in group 14, and given the following rationale, we would propose the following additional questions be discussed with UBC Food Services:

Rationale	Question
The UBC Farm is unlikely to ever provide year-round produce. Even local BC hothouse growers, who have immense amounts of capital and energy at their disposal, do not produce for the full calendar year.	Are there any opportunities to change the nature of the UBC Food Services' food procurement contracts to allow for seasonal suppliers? If this is at all a feasible option, what steps would need to be taken in order to proceed?
The UBC Farm currently has a limited amount of produce to sell to on-campus locations. However, if the UBC Farm does increase its	How much produce are you able to purchase from the UBC Farm before it is necessary to notify your existing suppliers that they are no

volume to a point, existing suppliers may change their prices to reflect the fact that they are no longer the sole produce providers.	longer the exclusive supplier to UBC? In other words, what is the "upper limit," in terms of costs and volumes, on the current "ad-hoc" purchasing arrangements, agreed upon between UBC farm staff and chefs in the kitchens?
Due to its small size, it makes more economic and ecological sense for the UBC Farm to grow specialty, "niche" food products. These type of products, such as heritage fruit and vegetable varieties, are unlikely to have the consistent size and appearance demanded by UBC Food services. Currently, there is a market for these niche products at the Sage Bistro.	Besides the Sage Bistro, are there any UBC Food Services outlets or anticipated catering events that would be willing to purchase "niche" food products, such as heritage tomato varieties, young salad mixes, fresh basil, garlic scapes, zucchini blossoms, forest-harvested berries, or unconventional varieties of fruits and vegetables? How large would you estimate the market for these types of products would be within the scope of existing UBC Food services providers?

Group 9 Spring 2004: Surveys

Market Surveys

Our group deemed that a market survey would help the UBC farm determine how it can best improve its production. Our survey is a nonparametric method of data collection. Using a survey that returns nonparametric data is advantageous because: it allows us to collect information on ordinal and nominal data, it does not require extensive information about the population being sampled, and nonparametric data is easier to calculate and understand than parametric data. Nonparametric sampling methods are not good for determining definitive statistics, but provide a useful tool for assessing general opinions.

Measuring the response rate (the number of surveys released in relation to the number of surveys completed and returned) will give surveyors some indication of the accuracy of any statistics generated by this survey. To improve the accuracy of a survey it is also important to employ a variety of survey methods, as the population demographics of the response differ depending on the mode in which the survey is delivered. Two general groups of people were identified as important to survey: current clients and the general UBC population. Current clients are probably best surveyed person-to-person, or with a short questionnaire to accompany every purchase from the UBC Farm Market. The general UBC population can also be surveyed employing a person-to-person approach, but caution must be used because survey statistics can be skewed if the surveyors are taking samples of convenience. A random e-mail and/or a telephone survey of the UBC staff, faculty and students would probably be the most efficient and powerful way to survey the UBC population.

UBC Farm Market Customer Survey

The purpose of this survey is to measure the responses and feedback *from current UBC Farm customers and/or workers*, and to determine how they feel the farm can best meet the needs of UBC food services.

---

1) In order of importance, what changes are most essential to suit your needs as a customer?
   a. Shorter line-ups ___
   b. More variety of produce, brought from local farmers ___
   c. Selling processed/packaged foods, dry/baked goods, consignment ___
   d. Larger quantity of food ___
   e. Better quality of food ___

2) How satisfied are you with the _(a) or (b) or (c)_of produce available at the UBC Farmers' Market? 1=Very Satisfied 3=Satisfied 5=Neutral 7=Unsatisfied
   (Circle your response)

(a) Quality	1	3	5	7
(b) Quantity	1	3	5	7

(c) Variety 1 3 5 7

3) Rank these ideas in order of importance for the UBC community and the UBC Farm:
   a. Expanding the market garden ___
   b. Introducing Box Schemes: ___
   (With a Box Scheme, farmers make several different boxes of fruit or vegetable varieties, and assign fair and proportionate prices to each different one for all consumers.)
   c. Introducing Community Supported Agriculture: ___
   (In CSA a consumer will purchase a share of the season's harvest. The money goes to farm necessities, and in return the consumer is guaranteed fresh, organic produce throughout the growing season.)
   d. Expanding research and teaching ___
   e. Other_____ ___

4) The UBC Farm may undergo development in the near future. To combat (to protect the farm?) this the farm must receive money faster than spending it, and at the same time we must prove the necessity of the farm for the UBC community. Please rank these in the order that you believe will earn the farm some "points" to decrease the possibility of development.
   a. More or closer partnerships with local suppliers (and producers in the GVRD?) in Vancouver ___
   b. More student from other academic disciplines helping out on the farm to prove its importance for every faculty ___
   c. Greater participation from Commerce, (conservation biology, ecology, sociology/anthropology, tourism and other disciplines?) students to come up with a plan to help the farm run ___
   d. Other_____ ___

Group 9 Spring 2004: Guiding Electronic Interview Questions

Sample Questions for other University Farms

1. How much revenue is generated from the farm sales each year?
2. What are other sources of revenue, if any?
3. To what degree does the farm rely upon grants and donations?
4. Does the farm employ staff or student workers?
5. How many full-time equivalent positions are paid to manage the farm?
6. How much of the farm labor is performed by volunteers?
7. Are there other major expenses?
8. Do you consider the farm to be financially self-sufficient?
9. Is the farmland itself secure, or are there conflicts over its long-term use?
10. Does the farm have the support of the senior administration of the University/college?

(group 9)

Group 1 Spring 2004: Consumer Survey

Consumer Awareness/Action Survey – UBC Food Co-op

Personal Information
Faculty_____ Major_____ Year____ Do you live on-Campus? Yes / No

Please read the following questions and circle the appropriate response.

1. Do you understand the concept of fair-trade?

Yes **No**

If you answered yes, does this understanding influence your shopping habits?

Yes **No**

2. Have you heard of the UBC Food Co-op?

Yes **No**

3. Do you know where the UBC Food Co-op is located?

Yes **No**

4. Have you ever purchased an item from the UBC Food Co-op?

Yes **No**

If you answer no, proceed to question 6.

5. I have purchased an item from the Food Co-op…

within the last week **within the last month** **within the last year**

Please proceed to question 7

6. I have not purchased an item from the Co-op because of….

Please circle all that apply **(End of survey)**

a. price
b. convenience
c. product preferences
d. location
e. other, please specify_____

7. What is your reason for shopping at the Food Co-op?

Please circle all that apply

a. price
b. convenience
c. product preferences
d. location
e. fair trade/organic products
f. other, please specify_____

8. What types of food do you normally purchase from the Food Co-op?

Please circle all that apply

a. Bulk goods
b. Produce
c. Tea/coffee/chocolate
d. Gifts

(group 1)

Group 11 Spring 2004: Survey of Accessibility

Survey to Access the Accessibility of the Food Co-op (Social Indicator)

Question 1: Please check off the time when you usually buy and eat foods in UBC campus: (you can check off if many as possible)

_____ 8am-9am
_____ 9am-10am
_____ 11am-12pm
_____ 12pm-1pm
_____ 1pm-2pm
_____ 2pm-3pm

_____ 3pm-4pm _____ 4pm-5pm
_____ 5pm-6pm _____ 6pm-7pm
_____ 7pm-8pm _____ Never

Question 2: Do you usually buy and eat **breakfast** on the UBC campus? ___ Yes ___ No

Question 3: Do you usually buy and eat **lunch** on the UBC campus? ___ Yes ___ No

Question 4: Do you usually buy and eat **dinner** on the UBC campus? ___ Yes ___ No

Question 5: Do you usually purchase and eat snacks on the UBC campus? ___ Yes ___ No

Question 6: What days you usually buy and eat foods in UBC campus? (You can check off if many as possible)

_____ Monday _____ Tuesday
_____ Wednesday _____ Thursday
_____ Friday _____ Saturday
_____ Sunday _____ Never

Question 7: Do you live in UBC Campus? ___ Yes ___ No

Question 8: Would you (more) buy and eat foods in UBC campus if the stores open later/earlier than currently they are? ___ Yes ___ No

Thank you for participating in our survey.

(group 11)

Group 11 Spring 2004: Survey of Waste

Survey for evaluating the waste produced at the Natural Food Co-op (Ecological Indicator)

1. What types of waste are being produced?
    - Recyclable
        - # of boxes
        - Paper
        - Etc.
    - Non-recyclable
        - Plastics
        - Etc
    - Compost
        - Vegetables
        - Fruit
        - Etc.
    - Other?

2. How much of each is being produced on a weekly basis?
    - Weight
    - Volume
    - Number/Amount

3. How much of the identified recyclable and compostable waste is being recycled and composted?
    - Recyclable
        - # of boxes
        - Paper
        - Et cetera

    - Compost
        - Vegetables

- Fruit
- Etc.

4. Who will measure and record the aforementioned data?

   - Food Coop Executives
   - Volunteers (from the Faculty of Agricultural Sciences or the Food Co-op)
   - Agricultural Sciences Undergraduate Society
   - AGSC 450 students

(group 11)

Group 11 Spring 2004: Survey of Community Awareness

Survey to Evaluate the Community Awareness of Organic and Fair-Trade Foods, Local Production, and Food Systems (Social-Ecological Indicator)

1. Have you heard about Organic food before?
   Yes □□ No □□
2. Do you know the difference between Organic food and conventional Non-Organic food?
   Yes □□ No □□
3. Have you heard about Fair-Trade goods?
   Yes □□ No □□
4. Do you know what a Fair-Trade good is?
   Yes □□ No □□
5. Do you know the difference between Fair-Trade and Non-Fair-Trade goods?
   Yes □□ No □□
6. Do you know the benefits of supporting local production?
   Yes □□ No □□
7. Could you list at least two social, two ecological and two economic benefits from local production?
   Yes □□ No □
8. Have you heard of a systems approach before?
   Yes □□ No □□
9. Do you know what a systems approach is?
   Yes □□ No □
10. Have you heard of a food system before?
    Yes □□ No □
11. Do you know what a food system is?
    Yes □□ No □
12. Have you heard the term Foodshed before?
    Yes □□ No □
13. Do you know what it means?
    Yes □□ No □

(group 11)

Group 11 Spring 2004: Guiding Questions

Research Proposal for Documenting the Lessons Learnt from other Student-run Food Co-ops and Community–run Co-ops

1. Perform Internet-based research of other co-op operations to find out information and gain a list of contact people at other operations using:
   - Links offered by the AMS website

- Listings of non-university food co-operatives

2. Questions to consider when completing the preliminary review of student-run websites and written publications:
    - What type is the University?
        - Agricultural Faculty Involvement?
        - Population Size/Consumer Base
    - What is the main source of food for the co-op?
        - On-campus Farm?
        - Local Producers?
        - Imported Goods?
    - What types of food are sold at the co-op?
        - Organic?
        - Fair-trade?
        - Variety?
    - How does the enterprise manage its waste?
        - Composting?
        - Recycling Program?
    - What are the details of the operation of the co-op?
        - Student/Faculty Staff?
        - Volunteer/Employment
        - Location
        - Accessibility (days/hours of operation)
    - What are the economic parameters of the co-op?
        - Profit Margins
        - Donations?
        - Sponsors?
        - Fund Raising?
        - Membership Fees?
        - Cost of Products
            - Competitiveness
            - Affordability
    - Is there any collaboration between stakeholders?
        - Consumer/Producer
        - Producer/Distributor
        - Among Stakeholders
        - Co-op/Community
    - What kind of marketing or promotion tools do they use?
        - Tactics of Informing the Public
        - What Works vs. What Doesn't?
    - What are some of the barriers or problems they encountered?
        - Common links
        - Solutions/Resolutions
        - Proposals
    - Are there any success stories we can learn from?

3. Contact executive members at other universities for information that can not be accessed through he web-based search
    - E-Mail
    - Telephone

4. Investigate/research other local, non-university co-op using the same set of questions recommended above

Contact

In-person Interview:

- Economics
- Suppliers
- Advice/Strategies for Success
- Collaboration

(group 10)

Group 5 Spring 2004: Two Surveys Assessing Accessibility of Prepared and Unprepared Foods on Campus

Social Indicator – Assessment Tool

Food Accessibility and Availability Questionnaire
Commuters and Multiple Occupant Residents version

The following is a series of questions to determine your perception regarding food accessibility and availability *of food of prepared food?* on the UBC campus. Please answer the questions honestly, as your answers will help determine UBC community food needs and practices. *Please circle the most appropriate response*.

I am a: ☐ Commuter ☐ On-campus resident (with meals provided) ☐ On-campus resident (no meals provided)

1. I can easily find and purchase prepared food items on UBC campus.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

2. I am satisfied with the selection of prepared food items on campus.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

3. I am satisfied with the hours of operation of UBC food outlets.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

4. I feel that the payment options available at UBC food outlets negatively affect my food purchases.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

5. Having accessible and available prepared food items on campus is important to me.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

6. I am satisfied with the availability and accessibility of prepared foods on UBC campus.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

Total = _____
Level of Sustainability =
Total ÷ 6
= _____

Food Accessibility and Availability Questionnaire
Single Occupant and Family Residents version

The following is a series of questions to determine your perception regarding food accessibility and availability ***of unprepared food?*** on the UBC campus. Please answer the questions honestly, as your answers will help determine UBC community food needs and practices. *Please circle the most appropriate response*.

Are you a: ☐ Single occupant resident ☐ Family resident

7. I can easily find and purchase unprepared food items on UBC campus.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

8. I have adequate transportation to purchase unprepared foods.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

9. Having unprepared food available is important to me.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

10. I purchase unprepared food items:

1	2	3	4	5
Once per month	Twice per month	Once per week	Twice per week	> Twice per week

11. Having accessible and available prepared food items on campus is important to me.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

12. I am satisfied with the availability and accessibility of unprepared foods on UBC campus.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

(group 5)

Group 5 Spring 2004: Food Acceptability & Affordability Questionnaire

Food Acceptability and Affordability Questionnaire

The following is a series of questions to determine your perception regarding food acceptability and affordability on the UBC campus. Please answer the questions honestly, as your answers will help determine marketing and community education on this topic. *Please circle the most appropriate response*.

13. I consider the food available on the UBC campus to be personally acceptable.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

14. I can easily find foods on UBC campus that meet my cultural practices and beliefs.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

15. I can easily find foods on UBC campus that meet my nutritional preferences.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

16. I am happy with the quality of the foods available on UBC campus.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

17. I consider that the foods available on UBC campus are comparable in price to similar food items bought off campus.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

18. I consider that the foods available on UBC campus are affordable to most students.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	Disagree

(group 5)

Group 5 Spring 2004: Food Sustainability Questionnaire

Food Sustainability Questionnaire

The following is a series of questions to determine your knowledge on sustainability. Please answer the questions honestly, as your answers will help determine marketing and community education on this topic. *Please circle the most appropriate response*.

Please note the appropriate response:

❑ Student ❑ Faculty ❑ Staff

19. I understand and can define the term sustainability.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	disagree

20. I understand the reasons for recycling, composting and other forms of waste management, especially on the UBC campus.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	disagree

21. I employ environmentally friendly behaviors in my home. E.g. I recycle, use a compost system, etc.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	disagree

22. I understand the role that food choices play in preserving the environment.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	disagree

23. I like to know where my food comes from so I can make environmentally safe choices.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	disagree

24. I consider the negative environmental consequences of my food choices prior to purchase.

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	disagree

25. I am aware of all food choice options within the UBC community (e.g. UBC Farmer's Market, village food stores, restaurants, UBC food services etc.)

1	2	3	4	5
Strongly agree	Mildly agree	Neutral	Mildly disagree	disagree

(group 5)

Group 5 Spring 2004: UBC Food Co-op Questionnaire

UBC Food Co-op Questionnaire

The following is a series of questions to determine your knowledge about UBC's Food Co-op. Please answer the questions honestly, as your answers will help determine the stability and marketing of this project. *Please circle the most appropriate response*.

1. I am aware that the Food Co-op is located on the lower level of the Student Union Building.

   1. Yes 2. No

2. If answered "No" to the above question, what would you do to make more students aware of the UBC Food Co-op.

   _____

   _____

3. I would buy foods from the UBC Food Co-op.

1. Yes 2. No

4. What kind of food items would you want the UBC Food Co-op to sell?

---

5. Do you feel that volunteers should run the UBC Food Co-op or be part of the AMS services, where they are paid employees?

1. Yes 2. No

6. If you were to become a member of the UBC Food Co-op, how much are you willing to pay?

1. $2.00 2. $5.00 3. $7.00 4. $10.00

7. Are there any other suggestions that can be made to improve UBC's Food Co-op?

(group 5)

Group 20 2004: Proposed Questionnaire Measuring the Perceived Availability, Acceptability, and Accessibility of Food on the UBC Campus

Section I: Personal Background

Age _____ Ethnic Background _____
Gender _____ 2003 Income _____
Do you live on-campus or off-campus? _____

Section II: Perceived Availability of Food on the UBC Campus

(1) Do you find that you have access to adequate amounts of safe foods?

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5	4	3	2	1

(2) Do you feel that you have access to adequate amounts of nutritious foods?

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5	4	3	2	1

(3) Do you feel that the UBC food supply is one that is reliable?

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5	4	3	2	1

(4) Do you feel that the campus offers a healthful variety of foods in vending machines?

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5	4	3	2	1

(5) Do you feel that there is enough locally grown produce available on the UBC campus?

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5	4	3	2	1

Section III: Perceived Accessibility of Food on the UBC Campus

(1) Do you typically purchase food on campus?

Strongly Agree Agree Neutral Disagree Strongly Disagree

5 4 3 2 1

(2) Are you able to afford nutritionally balanced meals on campus?

Strongly Agree Agree Neutral Disagree Strongly Disagree
5 4 3 2 1

(3) Do you feel that the hours of operation of retail food outlets meet your needs?

Strongly Agree Agree Neutral Disagree Strongly Disagree
5 4 3 2 1

(4) Do you feel that the location of retail food outlets meet your needs?

Strongly Agree Agree Neutral Disagree Strongly Disagree
5 4 3 2 1

(5) Would you choose to use community kitchens if such facilities were available?

Strongly Agree Agree Neutral Disagree Strongly Disagree
5 4 3 2 1

Section II: Perceived Acceptability of Food on the UBC Campus

(1) Do you feel that the campus offers foods that are culturally appropriate?

Strongly Agree Agree Neutral Disagree Strongly Disagree
5 4 3 2 1

(2) Do you feel that the campus offers foods that accommodate food allergies and/or disease-state diets?

Strongly Agree Agree Neutral Disagree Strongly Disagree
5 4 3 2 1

(3) Would you like to see nutrition labeling on both packaged and prepared foods?

Strongly Agree Agree Neutral Disagree Strongly Disagree
5 4 3 2 1

(4) Would you like to see bio-labeling, such as food miles, on both packaged and prepared foods?

Strongly Agree Agree Neutral Disagree Strongly Disagree
5 4 3 2 1

(5) Do you feel that the campus offers foods that are personally acceptable to you?

Strongly Agree Agree Neutral Disagree Strongly Disagree
5 4 3 2 1

(group 20)

Group 14 2004: Proposed Methods of Data Collection for Indicators

Instruments of Data Collection

1. Social Sustainability of the UBC Farm: Availability and Acceptability of UBC Farm Foods

- The social indicator of the UBC Farm is measured by the availability and acceptability of its foods.

- The following questions can be answered by the AGSC 450, Class of 2005 students upon research of the UBC Farm and UBC food service outlets.

1. List all the UBC food service outlets that serve UBC Farm products.

2. In those food outlets that serve UBC Farm products, are there any signs that inform people which foods are from UBC Farm?

3. How many days of the week and how many hours of the day does UBC Farm's Market Garden open?

4. How many methods of payment does UBC Farm's Market Garden accept?

5. How many types of produces are sold in UBC Farm? What is the proportion of these products being organically grown?

Based on the data you collected, calculate the percentage of each category (e.g. for question 1 above, how many food outlets are serving UBC Farm products out of all the ones in UBC?) Take the lowest percentage calculated from each question and apply this number to the Method to measure the social sustainability of the UBC Farm: availability and acceptability of UBC Farm foods provided in Appendix C, to determine the social sustainability of the UBC Farm

2. Economic Sustainability of the UBC Farm: Profitability of the UBC Farm

- The economic indicator of the UBC Farm is measured by the profitability of UBC Farm.

- The following questions can be answered by the AGSC 450, Class of 2005 students upon research of the UBC Farm.

1. What was the exact accounting for cost of inputs and total sales at the UBC Farm last year?

2. How much revenue was UBC Farm earning last year? Is UBC Farm making enough revenue to cover costs and improve the farm as well?

3. Comparing to previous years in general, is UBC Farm earning more or less profits last year?

4. Comparing to the year with highest profits, what percentage of those profits was the UBC Farm earning last year?

5. In comparison to other university farms, was the UBC Farm earning more or less profits last year?

Use the Method to measure the economic sustainability of the UBC Farm: profitability of UBC Farm provided in Appendix C to determine the economic sustainability of the UBC Farm.

3. Ecological Sustainability of the UBC Farm: Proportion of Food Wastes that are Being Composted or Recycled

- The ecological indicator of the UBC Farm is measured by proportion of food wastes that are being composted or recycled

- The following questions can be answered by the AGSC 450, Class of 2005 students upon research of the UBC Farm and UBC food service outlets.

1. How many recycling and composting bins available throughout the campus and where are they located.

2. List all posters and programs that inform and educate people about recycling and composting of food wastes.

3. If a sufficient number of recycling and composting bins is provided, how often do people use them?

4. To calculate changes in percentage of recyclable and compostable food wastes, compare the amount of food and food packaging materials that are produced and used by UBC food service outlines with that of being composted and recycled each month.

5. Calculate the amount of composted material that is being used in the UBC Farm for growing produces.

Use the Method to measure the ecological sustainability of the UBC Farm: profitability of UBC Farm provided in Appendix C to determine the ecological sustainability of the UBC Farm.

4. Social-Economic Sustainability of the UBC Farm: Affordability of UBC Farm Foods

- The social-economic indicator of the UBC Farm is measured by the affordability of its foods.
- The following questions can be answered by the AGSC 450, Class of 2005 students upon research of the UBC Farm and of local supermarkets.

1. List all of the different types of foods being sold at the UBC Farm.

2. What are the prices of the above-mentioned foods being sold at the farm?

3. What are the supermarket prices of the exact same foods?

4. Are the farm prices greater than, equal to, or less than the supermarket prices?

5. If the farm prices are less than the supermarket prices, are they 95%, 90%, 85%, or 80% of the supermarket prices?

Use the Method to measure the social-economic sustainability of the UBC Farm: affordability of UBC Farm foods provided in Appendix C to determine the social-economic sustainability of the UBC Farm.

5. Social-Ecological Sustainability of the UBC Farm: Awareness and Knowledge of the UBC Farm and its Role in the UBC Food System

- The social-ecological indicator of the UBC Farm is measured by the awareness and knowledge of the UBC Farm and its role in contributing to the overall sustainability of the UBCFS
- The following questions can be answered by the AGSC 450, class of 2005 students upon research of the UBC Farm and UBC food service outlets

1. Are you aware that there is a Farm on the UBC campus?

2. If so, do you have any general knowledge on what the Farm produces?

3. Have you ever heard the term “sustainability”?

4. If asked, would you be able to clearly define this term?

5. According to your definition, do you think the current UBCFS is sustainable or unsustainable?

6. Are you aware that some campus food outlets have purchased food from the Farm in the past, if so which ones?

7. In your opinion, do you think that the UBC Farm can be further integrated into and improve the sustainability of the UBCFS?

Use the Method to measure the social-ecological sustainability of the UBC Farm: awareness and knowledge of the UBC Farm and its role in the UBCFS provided in Appendix C to determine the social-ecological sustainability of the UBC Farm.

6. Economic-Ecological Sustainability of the UBC Farm: Proportion of UBC Farm Foods Sold to UBC and AMS Food Services

- The economic-ecological indicator is measured by assessing the proportion of UBC Farm foods that are sold to UBC and AMS Food Services as either ingredients or directly to the UBC community.

- The following questions can be researched and answered by AGSC 450 students.

1. What proportion of the food produced by the UBC Farm is sold to UBC and AMS Food Services?

2. What percentage of the total amount of food purchased by UBC and AMS Food Services does the Farm supply?

3. Does the Farm have the productive capacity to supply UBC and AMS Food Services with all some or only a small proportion of their overall need?

4. Is there an opportunity to increase the amount of Farm food purchased by UBC and AMS Food Services?

5. What proportion of Farm food purchased by UBC and AMS Food services is sold directly to members of the UBC community?

Use the Method to measure the economic-ecological sustainability of the UBC Farm: profitability of UBC Farm provided in Appendix C to determine the economic-ecological sustainability of the UBC Farm

(group 14)

Group 12 Spring 2004: Sustainability Awareness Questionnaire

Questionnaire (Ecological, Economic, and Social Indicators)

Objective: To determine the level of sustainability awareness amongst the students, faculty, and staff on the University of British Columbia campus. Awareness has been divided into three realms: ecological, economic, and social.

Ecological:

What is composting?
a) The biological decomposition of solid organic materials by bacteria, fungi, and other organisms into a soil-like product
b) A process that converts waste material into a form that cannot be reused
c) All of the above

Did you know UBC has started a composting program?
a) Yes
b) No

Which of the following materials are compostable?
a) Plastic
b) Fruits and vegetables
c) Egg shells

Do you recycle?
a) Yes
b) No

Which of the following products are recyclable?
a) Milk cartons
b) Ink cartridges
c) Plastic

Economic:

On average how much of every dollar spent on food goes to farmers?
a) 25 cents
b) 91 cents
c) 9 cents

Did you know that Alma Mater Society (AMS) gives back a portion of its total food sales back to the University?
a) Yes
b) No

What percentage of sales does AMS give back to the university?
a) 10 percent
b) 1 percent
c) 3 percent

How much of a discount do you receive if you bring your own coffee mug to UBC food service outlets?
a) 10 percent
b) 15 cents
c) 10 cents

Social:

On average how far does food travel from where it's produced to the consumer's plate?
a) 11 km
b) 1666 km
c) 60 miles

Does the farther the food travels have an effect on the nutritional quality of food?
a) Yes
b) No

What is the effect?
a) enhances quality
b) increases nutritional value
c) increases usage of preservatives and additives

(group 12)

Group 12 Spring 2004: Scavenger Hunt Questions

Scavenger Hunt (suggested questions)

1. Locate one coffee shop on campus selling free trade coffee _____

2. Locate 2 restaurants on campus that offer discounts for bringing your own mugs and containers_____ and _____.

3. Locate where you can buy BC produce on campus_____

4. Locate 2 recycling bins on campus_____and_____

5. Find the UBC farm on the map_____

6. Locate 1 compost bin on campus_____

(Group

10) Group 12 Spring 2004:

Questionnaire (To conduct market research into customers' support for and participation in current and proposed sustainability initiatives)

1. Would you be interested in attending a *Sustainability Awareness Week*?

Not interested- 1 2 3 4 5- Very interested

2. Would you be interested in purchasing UBC farm produce if it was made readily available?

Not interested- 1 2 3 4 5- Very interested

3. Would you be interested in participating in a composting and recycling seminar put on by the campus sustainability office?

Not interested- 1 2 3 4 5- Very interested

4. Would you be interested in purchasing a seasonal foods cookbook that illustrates how to prepare your favourite dishes using BC produce?

Not interested- 1 2 3 4 5- Very interested

5. Would you be interested in attending a Green Building tour that educates students regarding how UBC is reducing green house gases and still generating power for the buildings?

Not interested- 1 2 3 4 5- Very interested

6. Would you be interesting in applying to an exchange program to Mexico to learn more about sustainability issues, if it was made available for students at UBC?

Not interested- 1 2 3 4 5- Very interested

7. Would you be interested in participating in a focus group to discuss the various sustainability initiatives being implemented on campus?

Not interested- 1 2 3 4 5- Very interested

(group 12)

Group 16 Spring 2004: Interview Guide

Interview Guide (Questions for the food purchasers of UBCFS and AMSFS)

1) What is the primary motivating factor involved when you purchase food for UBC food services?
2) Are there guidelines you follow when making purchases?
3) Is cost an issue?
4) Do you have any incentives to purchase locally? From B.C.? Or from Canada?
5) How important is freshness?
6) How important is quality of the food you purchase?
7) When making the menu, what is considered?
8) Is providing nutritious, affordable food a factor?

(group 16)

Group 16 Spring 2004: UBC Food System Sustainability Survey

Structured Survey for UBC Community

UBC Food System Sustainability Survey:
Used to evaluate what motivates consumers and their attitudes
Part 1: Please answer the following questions on a scale of 1-5:
(5 = Often, 4 = Sometimes, 3 = Neutral, 2 = Rarely, 1 = Never)

Ecological

1. Do you bring your own mug when you purchase beverages on campus?
2. Do you bring your own container when you purchase food on campus?
3. Do you bring your own cutlery to eat at school instead of using disposables?
4. Do you throw your beverage containers in the appropriate bin?
5. Do you throw your waste paper in a recycling box instead of the trash?

Social

6. Do you feel that recycle bins are easy to locate and accessible?
7. Do you feel that locally produced food is more eco-friendly?
8. Do you feel that the campus needs more variety in food choices?
9. Do you feel that the campus needs healthier menu choices?
10. Would you consult an on-campus dietitian if one was available?

Economic

11. Would you prefer purchasing locally grown produce as opposed to imported?
12. Would you pay a little more knowing a product is more eco-friendly?
13. Would you prefer to purchase healthier foods?

Part 2: Please answer the following with a yes or no:

14. Did you know that if you bring your own mug/container to make food purchases, you can receive a discount $0.15 on campus?
15. Did you know that china/cutlery/glassware is available at 99 Chairs and Pacific Spirit Place for customer use?
16. Did you know that there are cardboard, metal, glass, paper, and plastic recycling bins placed all over campus?
17. Did you know that imported foods burn more fossil fuels than locally grown produce?

Social:
4. Do you know what sustainability initiatives are?
Do you support it by participating in those initiatives?

Ecological:

1. Are you aware and understand with the recycling and composting programs that are proposed by the UBC Waste Management?
2. Are you willing to participate in the recycling and composting programs that are proposed by the UBC Waste Management?

(Group 16)

Group 18 Spring 2004: Sustainability Survey

Sustainability Survey
(completion time: approximately 5 - 10 minutes)

General Background

1. Gender (check one): _M _F _ I choose not to specify

2. My status at UBC (check primary role):
   _Undergraduate
   _Graduate
   _Faculty
   _Staff
   _Other

3. Length of enrollment/employment at UBC:
   _Less than 1 year
   _1-4 years
   _Greater than 5 years
   _Greater than 10 years

4. Are you currently living in Student Residence? (If 'no' proceed to Section A question 3) Y N

5. If so, which Residence?
   _Place Vanier
   _Totem Park
   _Ritsumeiken
   _Gage Towers/Apartments
   _Fairview
   _Thunderbird

Section A Recycling

1. Are you aware of recycling programs in your residence? Y N

2. Do you participate in these recycling programs? Y N

3. If you do not live in residence at UBC, do you recycle at home? Y N

4 How knowledgeable do you consider yourself to be regarding which items are recyclable, and which are not? (e.g. what type of plastics, paper products, and metal materials)

   _Not at all _Somewhat _Moderately _Mostly _Very

5. How do you inform yourself about which items you are able to recycle in your area? (check all that apply)
   _I don't
   _I read the instructions on the large recycling bins
   _I've received pamphlets from my residence advisors
   _I've seen commercials on TV
   *Other*_____

6. How much of the recyclable material you use at home do you recycle?

   _0% _25% _50% _75% _100%

7. Are you aware of UBC campus-wide recycling initiatives? (bins in buildings, the three-part garbage and recycling bins outside buildings)

   Y N

8. Do you recycle outside of your home while on campus? Y N

9. How much of the recyclable material you use at UBC do you recycle?
_0% _25% _50% _75% _100%

10. If you do not recycle 100% of the recyclable material you use on campus, why? (check all that apply)
_I was not aware there were recycling bins on campus
_I cannot readily find the appropriate bins
_I just don't want to bother
*Other*_____

11. How satisfied are you with the recycling effort on the behalf of UBC?
_Completely dissatisfied
_Somewhat dissatisfied
_Neutral
_Satisfied
_Very satisfied

COMMENTS
_____
_____

Section B Composting

*If you live in UBC Residence, proceed with question 1, if you live off-campus, proceed to question 3

1. Are you aware of composting programs in your residence? Y N

2. Do you participate in these composting programs? Y N

3. If you do not live in residence at UBC, do you compost at home? Y N

4 How knowledgeable do you consider yourself to be regarding which items are compostable, and which are not? (e.g. cooked or uncooked foods, meats, spoiled food, plant materials, etc.)

_Not at all _Somewhat _Moderately _Mostly _Very

5. How do you inform yourself about which items you are able to compost? (Check all that apply)
_I don't
_I read the instructions that came with my home bin
_I've received pamphlets from my residence advisors
_I've seen commercials on TV
*Other*_____

6. If you do compost, how much of the compostable material you use at home do you compost?

_0% _25% _50% _75% _100%

7. Are you aware of any composting programs at UBC? (Outside of Macmillan, near the Pendulum, etc)

Y N

8. Do you compost outside of your home while on campus? Y N

9. How often would you use composting facilities on campus if they were made available, for example, as a fourth compartment in the 3-compartment garbage and recycling bins, or as bins in Pacific Spirit Place and other campus eating areas?

_Never _Seldom _Occasionally _Often _Always

COMMENTS

_____
_____
_____
_____

Section C Food Issues

1. Which of these terms regarding food origin are you familiar with (check all that apply):
   _Fair Trade
   _Organic
   _Certified Organic
   _Environmentally-friendly/ Eco-friendly

2. How often do you purchase food items with any or all of the above labels outside of UBC?
   _Never _Sometimes _Occasionally _Often _Always

3. Do you purchase Fair Trade beverages at UBC (coffee, tea, hot chocolate, etc.) Y N

4. When you purchase coffee, tea, etc., at UBC how often do you purchase Fair Trade?
   _Never _Sometimes _Occasionally _Often _Always

5. If you do not always purchase Fair Trade, why not? (Check all that apply)
   _Fair Trade items are too expensive
   _ I do not like the variety/blend that is offered as Fair Trade
   _Fair Trade is not always available
   _ I do not make an effort to purchase Fair Trade
   *Other*_____

Questions 6 through 8 pertain to purchases made at grocery stores, not necessarily on campus.

6. How often do you buy local (Lower Mainland or BC) produce or processed goods when you buy groceries?
_Never _Sometimes _Occasionally _Often _Always

7. If your answer to question 5 was not 'always', what are your reasons for not buying local produce or processed goods? (Check all that apply)
   _I do not base my purchasing decisions on the source of the food
   _Local products are not readily available
   _Local products are not obviously labeled
   _Local products are too expensive
   _The foods I like are not grown or processed locally

8. If the same product, for example, red apples, were available for the same price from both a local and an imported source at the grocery store, would you purposefully choose local?
Y N

9. Are you aware of the UBC Farm Market? Y N

10. Have you ever attended the UBC Farm Market? Y N

11. Are you aware of the Natural Food Coop at UBC? Y N

12. Have you ever purchased from the Natural Food Coop at UBC? Y N

13. How interested would you be in attending a Food Week in the SUB, where local, Fair Trade, and/or organic foods would be showcased in AMS and UBC Food Service establishments?

   _Not interested
   _Somewhat interested
   _Neutral
   _Interested

_Very interested

14. When you purchase food from establishments on campus, how often do you get the food to go?

_Never _Sometimes _Often _Very often _ Always

15. If you get your food to go, how do you take it? (Check the two most frequent modes)
_In my own reusable container
_In a paper bag or other recyclable container
_In a Styrofoam container
_In a reusable Tupperware container I bought from a Food Service outlet on campus

16. Check the three factors that you consider most important when making your food choices at UBC (in no particular order):
_Nutrition
_Taste
_Affordability
_Convenience (fast food)
_Location (close to classes/work)
_Able to carry to class/work
*Other*_____

17. Are there any initiatives you would specifically like the AMS/ UBC Food Services to implement regarding recycling, composting, using reusable containers and/or sourcing their products?

_____
_____
_____

18. What incentives would you require in order to take further advantage of the sustainability initiatives AMS and UBC Food services already offer? (E.g. greater discounts, etc.)

_____
_____

GENERAL COMMENTS

_____
_____

Thank you for participating in our survey!

(group 18)

Group 2 Spring 2004: Price Perception Questionnaire

Hello, we are students in the Faculty of Agricultural Sciences, conducting research on the UBC Food System. The purpose of this questionnaire is to collect information regarding your thoughts about food at UBC. If you are interested in participating, please complete each question outlined below.

For each question, please select ONE answer that best describes your current situation.

1. Do you currently live…
$ On campus
$ Off campus

2. Which describes you best…
¨ Student
¨ Faculty

- ¨ Staff Member
- ¨ Resident
- ¨ UBC Visitor (if selected, please go to question 4)

3. Do you attend UBC…
   - ¨ Full time
   - ¨ Part time
   - ¨ Sessional

4. How often do you eat food purchased on campus per week on average?
   - ¨ Never
   - ¨ Once
   - ¨ Twice
   - ¨ Three times
   - ¨ Four times
   - ¨ Five times
   - ¨ Everyday

5. When you purchase food at UBC, how much do you spend at each meal (including the price of beverages)? *Please select the appropriate answer for each meal…*

	Breakfast	Lunch	Dinner	Snack
<$2.50				
$2.50 to $5.00				
$5.00 to $7.50				
$7.50 to $10.00				
$10.00 to $15.00				
>$15				
Not Applicable				

6. What do you think about the prices of food at UBC? (one question asks also about quality…)
   - ¨ The prices are too cheap, so that you would question the quality
   - ¨ The prices are cheap
   - ¨ The prices are average
   - ¨ The prices are expensive
   - ¨ The prices are too expensive, so that you would not consider buying

7. How would you compare the food prices on campus at UBC to the food prices off campus?
   - ¨ The prices are much cheaper on campus, so that you would question the quality of food on campus
   - ¨ The prices are cheaper on campus
   - ¨ The prices are the same on and off campus
   - ¨ The prices are more expensive on campus
   - ¨ The prices are much more expensive on campus, so that you would not consider buying on campus

8. Overall, how would you rate the availability of specific foods, including ethnic, vegetarian, or special diets (gluten or lactose intolerance, kosher) at UBC?
   - ¨ The variety of food is high
   - ¨ The variety of food is above average
   - ¨ The variety of food is average
   - ¨ The variety of food is below average
   - ¨ The variety of food is low
   - ¨ Do not know

9. Would you be willing to pay for a greater variety of foods available at UBC?
   - ¨ Yes, regardless of the price increase
   - ¨ Yes, if the price increase is marginal
   - ¨ Depends on amount of price increase

¨ No, prices are already too high
¨ No, variety is not important
¨ Do not know

10. Overall, how would you rate the availability of what you deem are nutritious foods on campus (i.e. fruits and vegetables, whole grains, low fat, or low sugar items)?
¨ Nutritious foods are always available
¨ Nutritious foods are frequently available
¨ Nutritious foods are seldom available
¨ Nutritious foods are never available
¨ Do not know

11. Would you be willing to pay more for a greater availability of nutritious foods at UBC?
¨ Yes, regardless of the price increase
¨ Yes, if the price increase is marginal
¨ Depends on amount of price increase
¨ No, prices are already too high
¨ No, quality is not important
¨ Do not know

12. Overall, how would you rate the quality of food at UBC?
¨ The quality of food is high
¨ The quality of food is above average
¨ The quality of food is average
¨ The quality of food is below average
¨ The quality of food is low

13. Would you be willing to pay for locally produced food if its overall quality is superior to what is currently available at UBC?
¨ Yes, regardless of the price increase
¨ Yes, if the price increase is marginal
¨ Depends on amount of price increase
¨ No, prices are already too high
¨ No, quality is not important
¨ Do not know

14. Would you consider "locally produced" food to be…?
¨ Produced 25 miles or less from point of purchase
¨ Produced 100 miles or less from point of purchase
¨ Produced in the Lower Mainland
¨ Produced in B.C.
¨ Other_____

15. What would motivate you to buy locally produced foods…Please indicate your **top 3 choices** from the list provided below:
___price
___quality
___supports local farms
___environmental concerns
___food security
___healthier food
___freshness
___helps local economy
___other: _____

16. How much of a higher price would you be willing to pay for locally grown foods?
¨ 0%
¨ 1-5%

- ¨ 6-10%
- ¨ 11-15%
- ¨ >15%
- ¨ Price does not matter
- ¨ Other: _____

17. How much of a higher price would you be willing to pay for food that has been produced using environmentally friendly methods?
    - ¨ 0%
    - ¨ 1-5%
    - ¨ 6-10%
    - ¨ 11-15%
    - ¨ >15%
    - ¨ Price does not matter
    - ¨ Other: _____

18. What would be the most important factor regarding the production of a food that would affect your purchasing decisions, given that it has comparable price and appearance?
    - ¨ Grown locally by farms in the Lower Mainland & Fraser Valley
    - ¨ Organic - unknown origin
    - ¨ Organic - imported
    - ¨ Organic - grown locally in the Lower Mainland & Fraser Valley
    - ¨ Organic - grown in B.C.

19. How much do you know about sustainability and how it relates to the food system?
    - ¨ A lot
    - ¨ Average
    - ¨ Some information
    - ¨ Never heard of it
    - ¨ Do not care

20. How important is a sustainable food system at UBC to you?
    - ¨ Very important
    - ¨ Important
    - ¨ Slightly important
    - ¨ Not important

(Group 2)

Group 2 Spring 2004: Contingent Valuation Survey

We are faced with sustainability crisis here at UBC, which can neither be solved easily or inexpensively. Some of the current problems are named below, and for each please indicate whether you think we should spend more, the same, or less money than we are spending now.

	Great Deal More	Somewhat More	Same Amount	Somewhat Less	Great Deal Less	Not Sure
Food Safety	1	2	3	4	5	6
Availability Of Nutritious Foods	1	2	3	4	5	6
Recycling	1	2	3	4	5	6
Composting	1	2	3	4	5	6
Availability of Ethnic Foods	1	2	3	4	5	6
Availability of Local Produce	1	2	3	4	5	6
Utilization of Local Produce in Food Prepared at UBC	1	2	3	4	5	6

It is estimated that food travels an average of 1300 miles (~2100 kilometers) from its point of production to point of consumption (Kloppenberg, Hendrickson & Stevenson, 1996). Increased food miles are associated with environmental damage, declining food quality, and lower nutritional value of food. In order for UBC to move towards a more sustainable food system, several measures must be implemented. This would include purchasing a greater amount of local food products, and making UBC a more self-sufficient food system through increased composting and recycling on campus.

1.At present, it is estimated that in order to increase the availability of local food products at UBC, it would cost you approximately ___% per item purchased. Would you be willing to pay ___% per item purchased?

2.What if the percentage was ___% per item? Would you be willing to support UBC's move towards a more sustainable food purchasing policy?

3.What is it about UBC's move towards a more sustainable food purchasing policy that would make you willing to pay for it?

4.Before the survey, did you think that the food system unsustainability crisis at UBC as described to you was more serious, less serious, or about the same?

(group 2)

Group 2 Spring 2004: Interview Guide

UBC & AMS Food Services Interview Guide

1) Currently what food products generate the most profit?
2) What are the least profit generating products that you carry?
3) Do you use a food distributor when ordering food products or do you order straight from the suppliers?
4) If you use a food distributor, what is the name of the distributor you use?
5) What percentage of your food is produced in the lower mainland?
6) What percentage of your food is imported from outside the lower mainland?
7) Do you know where the majority of your food products come from?
8) Is it more cost effective to buy food locally or outside the lower mainland?
9) Would you sell locally grown food? Yes__ No__ If no, please explain why not.
10) What is your definition of sustainability?
11) If the benefits of locally grown food products outweighed the costs, would this change your perception of selling more locally, sustainable products?

(Group 2)

Group 3 Spring 2004: Survey

Perceptions of Price Survey
*OE: Open ended Question

1. Do you live in residence
1a. If yes, which one?

2. How often do you eat on campus? (OE)

3. Approximately how much money do you spend on food/week (OE)?

4. If you had a choice between purchasing a meal plan and not purchasing one, would you still purchase one?

   Yes No Why?_____

5. Would you describe UBC food as:
   High Quality Medium Quality Low Quality

6. Do you find the food at UBC to be expensive in relation to its quality?

   Yes No Why?_____

7. Would you pay more for "brand name" food products (Subway, Bread Garden etc.)

   Yes No Why?_____

8. If an outlet was situated at a more convenient location would you pay more for food there?

   Yes No Why?_____

9. Would you support a discount for bringing your own utensils and containers?
   Yes No Why?_____

10. Would you support more locally produced food if it were the same price as food brought in from elsewhere?

Yes No Why?_____

11.Would you pay MORE for locally produced food because it uses less fossil fuel (for transport), requires less packaging and supports the local economy

   Yes No Why?_____

12. If a local food was the same price as another exported food, would you purchase the local food over the exported? (given that both food items were hypothetically of the same size, same quality, same freshness)

   Yes No Why? _____

13. Would you be willing to pay more for food that is purchased in a more sustainable manner?

   Yes No Why?_____

14. Define sustainability_____

15. Name a sustainability initiative of UBC Food Services or AMS Food and Beverage Services_____

16. Are you aware of the UBC Farm? Have you ever been there?

(group 3)

Group 4 Spring 2004: Survey

CIRCLE ONE:

1. Do you find food prices at UBC:
    a. cheaper than other places
    b. similar to other places
    c. more expensive than other places.

2. What foods would you be willing to pay more for?
    a. Organic
    b. Locally produced
    c. High nutritional value
    d. Food produced using ecologically sound methods.

3. I would want knowledge about where my foods were made and/or coming from? YES NO

4. If UBC resorted to seasonal produce, (i.e. providing food that is locally available due to the seasonal climate e.g. strawberries only in summer), would you be supportive of this method:
    YES NO

5. Pick a single food item (including beverages) that you find more expensive at UBC than at other locations in the lower mainland._____

(group 4)

Group 1 Summer 2004: Questionnaire

Awareness and "Willingness to Pay" for Locally Grown Food Survey

All information gathered from this survey will remain anonymous, but will be accessible to the public for use in community projects

General Background

1. Are you a (check one)
    ¨UBC Student
    ¨ Faculty Member
    ¨ Staff Member
    ¨ Other: _____

2. Gender (check one): M ☐ F ☐

3. Age: _____

3. Annual income? ☐ $0 – 5,999 ☐ $6,000-17,999 ☐ $18,000-29,999 ☐ $ 30,000+

4. Do you live: ☐ On-campus ☐ Off-campus

5. How often do you pack your food and bring it to campus?
    ¨ Most of the time
    ¨ Sometimes
    ¨ Rarely
    ¨ Never

6. How often do you purchase your food on campus?
    ¨ Most of the time
    ¨ Sometimes
    ¨ Rarely
    ¨ Never

Awareness

7. What are the TOP 3 factors that influence your food purchasing choices?

- ¨ Price
- ¨ Quality
- ¨ Convenience
- ¨ Availability
- ¨ Service
- ¨ Local rather than imported

8. Purchasing locally grown food contributes to community development.
   - ¨ Highly agree
   - ¨ Somewhat agree
   - ¨ Neutral
   - ¨ Somewhat Disagree
   - ¨ Highly Disagree

9. Locally grown produce is of higher quality than imported produce.
   - ¨ Highly agree
   - ¨ Somewhat agree
   - ¨ Neutral
   - ¨ Somewhat Disagree
   - ¨ Highly Disagree

10. Consuming locally grown produce contributes to environmental preservation
   - ¨ Highly agree
   - ¨ Somewhat agree
   - ¨ Neutral
   - ¨ Somewhat Disagree
   - ¨ Highly Disagree

11. There is a farm on UBC lands T ☐ F ☐

12. UBC should encourage its community to buy more locally grown foods.
   - ¨ Highly agree
   - ¨ Somewhat agree
   - ¨ Neutral
   - ¨ Somewhat Disagree
   - ¨ Highly Disagree

13. Why do you think it is important to purchase and consume locally grown foods?

_____

Food that we consume in the UBC food system has traveled, on average, thousands of kilometers to reach our plates. Transporting food products great distances from area of production to area of consumption contributes to many negative environmental and social impacts. These include global warming, increased garbage, and waste, reduced nutrition and palatability of foods, and poor wages/working conditions for people in some food producing areas. At the same time, imported foods allow year-around access to fruits that would not be available (except those that can or are produced in the locality (BC?) and are often cheaper.

Would you be willing to pay more for local foods than imported ones?
What would you choose if the price of local and imported foods were the same?

14. If you are willing to pay more for local foods: How much more would you be willing to pay for locally grown foods, realizing that this would leave you with less money to spend on other things?
   - ¨ 0%
   - ¨ 1-5%
   - ¨ 6-10%
   - ¨ 11-15%
   - ¨ 15%- 30%
   - ¨ > 30%
   - ¨ Other: _____

15. Would you be willing to adapt a seasonally variable diet, in which some products are not available all year long? (need to provide an explanation that some highly valued products that can not be obtained locally –like banana-) would still be imported. The issue is re-dressing the current unbalance, not to eliminate imported foods.
    - ¨ Highly agree
    - ¨ Somewhat agree
    - ¨ Neutral
    - ¨ Somewhat Disagree
    - ¨ Highly Disagree

16. People should try to buy produce that are grown in BC
    - ¨ Highly agree
    - ¨ Somewhat agree
    - ¨ Neutral
    - ¨ Somewhat Disagree
    - ¨ Highly Disagree

17. How interested are you in purchasing and consuming locally grown foods?
    - ¨ Really Interested
    - ¨ Somewhat Interested
    - ¨ Not Interested
    - ¨ Neutral

18. Explain why you are or are not willing to pay more to consume locally grown foods?

Thank you for completing this survey
Results of the survey will be available to the public in May, 200

(group 1)

APPENDIX G

Education Pieces, Labeling Systems

Group 17 Spring 2004: Educational Poster

Eat Thoughtfully, Buy Locally

A **Sustainable Food System** is defined as one where "food is grown, harvested, processed, marketed, sold and consumed as close to home as possible"== **"Local Food System"**

By you will: **locally grown products** **supporting**

- Know where your food comes from and how it is grown
- Build connection with the food that you eat
- Increase local economy
- Less traveling time → result in fresher food
- Local farming is more traditional → less pesticide
- Lesser food mileage and usage of fossil fuel for transport.
- Decrease in carbon emission and air pollution

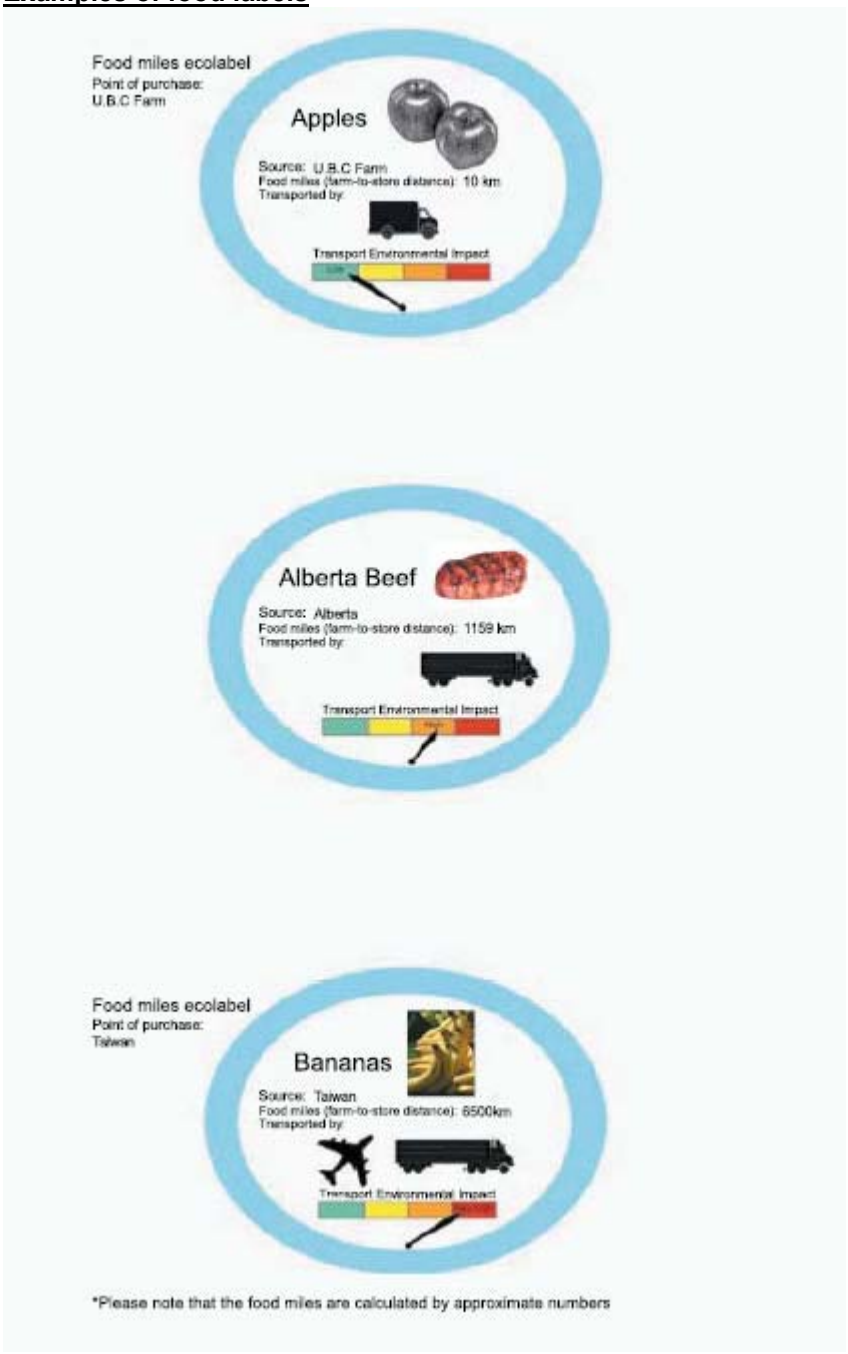
you can **Actions** **take:**

- Support local farms and food Co-op.
- Purchase fruits and vegetables in season
- Join the Community Supported Agricultural (CSA) program in your community and be involved.
- Encourage more farmer's markets in your community
- Appropriate use of "Eco-Labels"
- Sell more local food products in grocers
- Promote local food products in school's meal plan.

(group 17)

Group 6 Spring 2004: Food Label Designs

Examples of food labels



Group 3 Summer: Logo Design