UBC Social Ecological Economic Development Studies (SEEDS) Student Report

# Exploring Ways to Lighten the Ecological Footprint of The Moon Noodle Bar

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**University of British Columbia**

**AGSC 450**

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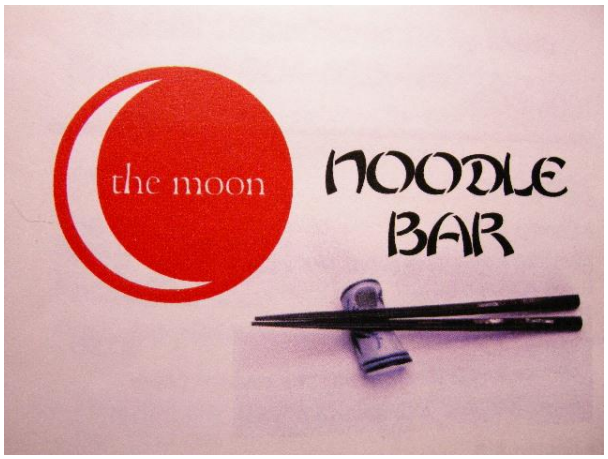


**April 9th, 2008**
**AGSC 450**
**Scenario 2**

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## ABSTRACT

The UBC Food System Project is an ongoing effort to increase the sustainability of the campus food system. Community stakeholders and AGSC 450 students are engaged in a community-based action research (CBAR) approach to finding and implementing sustainability strategies. Our group was part of scenario two, and we had the task of collaborating with The Moon Noodle Bar to research and explore methods to reduce the outlet's ecological footprint. Our group first conducted a review of the literature and of lighter footprint strategies at other universities, in addition to a review of past AGSC 450 papers. We established a definition and classification scheme for ecological footprints, and conducted initial interviews with staff at The Moon. Barriers to engaging in the AMS Lighter Footprint Strategy were identified and a survey was conducted to gain an understanding of the knowledge and values of Land and Food Systems (LFS) students and Moon customers. Further interviews were conducted with stakeholders in the UBC food system, and a costing analysis was completed to compare conventional and organic versions of a similar dish. From the information gathered through research, surveys, and interviews, our group developed useful resources including a recipe and promotional tool as well as suggestions to help the Moon overcome the identified barriers. Recommendations were also formulated to support future AGSC 450 classes in continuing their work on this scenario.

## INTRODUCTION

The University of British Columbia Food System Project (UBCFSP) includes various scenarios, which aim to produce a sustainable food culture at the University of British Columbia (UBC). The scenario assigned to our group (Group 7), specifically explores ways to lighten the ecological footprint of the AMS Food and Beverage Department (referred to as Scenario 2). The AMS Food and Beverage Department (AMSFBD) manages many food venues, four of which were selected to collaborate with the current project. Our group specifically focused on investigating ways The Moon Noodle Bar could participate in creating a sustainable food system at UBC.

The Moon is a Chinese take-out restaurant located in the basement of the Student Union Building (SUB) on the UBC campus. The Moon is owned and run by the UBC Alma Mater Society (AMS), which coordinates a Lighter Footprint Strategy (LFS) for their food outlets. This is the first year that The Moon Noodle Bar has been a community partner for the UBCFSP. Our goal in this first year was to lay a strong foundation so that there is both an understanding and appreciation of the UBCFSP principles. The body of our paper begins by exploring broad theoretical and academic

topics surrounding the UBCFSP project, our group's paradigm and our approach to defining ecological footprint. We go on to explain our methodology, and subsequently we present and discuss the data gathered from literature reviews, surveys and interviews. Lastly we outline our recommendations for various stakeholders and provide the resources developed for The Moon.

## PROBLEM DEFINITION

The Ecological Footprint (EF) is a sustainability indicator tool that is used to help determine the resources necessary for specific lifestyles and their impacts (Redefining Progress, 2009). Our current global footprint is said to be 23% higher than the sustainable level (Global Footprint Network, 2007; Group 15 & 29, 2008). Of the world's total EF, 30% is connected to our food systems (Wackernagel & Rees, 1996; Group 28, 2008). By lowering our food footprint, we are substantially lowering our ecological footprint and shifting our society toward sustainability.

UBC has 65,000 people on campus daily (Richer, 2009). A more sustainable food system at UBC has a large potential for positive impact and the ability to act as a model for other communities. The UBCFSP was initiated to take action on these issues by lowering the food system footprint on the UBC campus. The UBCFSP began in 2001 as a joint initiative between the UBC Faculty of Land and Food Systems and The Sustainability Office's Social Ecological Economic Development Studies Program (SEEDS). Using community based action research (CBAR), AGSC 450 students have been involved with UBC Food system stakeholders to assess the sustainability of the UBC food system, identify barriers to achieving visions of sustainability, and implement procedures that lead towards a sustainable food system at UBC (Richer, 2008). Each year, thirty groups of students have embarked on projects to make positive shifts in the UBC Food system.

Our task as group 7 of AGSC 450 2009 was to help the AMS food outlet The Moon incorporate a lower EF option into its menu (UBCFSP scenarios, 2009). We acknowledge that there are numerous barriers that restaurants face when transitioning to lower EF options. These include

limited access and high costs of local organic food items, as well as logistical issues involving cooking, promoting, ordering, and finding space on the steam table for a new local organic dish. Additionally, limited access to information about the benefits of lower EF food systems may act as a barrier. Suggesting solutions to these barriers and advertising a lower EF menu item would therefore be a beneficial first step.

## GROUP VISION STATEMENT & VALUE ASSUMPTIONS

Our group is in overall agreement with the goals and values outlined in the "Vision Statement for a Sustainable UBC Food System". We respect that this document has been created through years of communication with community stakeholders and that the priorities outlined are important not only from an academic perspective, but from the community's vision for a sustainable UBC food system. We also believe it is important for students, faculty and other UBC communities to not only recognize the vision statement as a common, unifying goal, but to be invested in the accomplishment of this vision. To create a collective sense of pride and urgency for creating a sustainable food system, we suggest expanding the idea put forth in point four: "providers and educators promote awareness among consumers about cultivation, processing, ingredients and nutrition". To have the greatest impact, promotion and awareness should go beyond "cultivation, processing, ingredients and nutrition", and include a component of raising awareness about the UBCFSP project itself. A more visible and accessible campaign can bring people together as a community invested in the health of their food system.

One addition to the vision statement that our group would be interested in seeing is a common definition of "lighter footprint," and a common means for categorizing the "footprint" of specific foods. The AMS LFS holds much potential for influencing the sustainability of the UBC food system. We therefore believe that having a common assessment tool is a useful step for creating shared goals and for transitioning exciting visions into reality.

Through group discussion, we identified aspects of the vision statement that would be most directly addressed by Scenario 2. The local composting of waste is something immediately attainable because the necessary infrastructure already exists. We have therefore identified this as a valuable point to promote at The Moon, where Styrofoam take-out containers are still the norm. Additionally, providing ethnically diverse foods is of particular relevance to our project, since we are working with a restaurant that serves Chinese food. Focusing on locally grown and produced foods is also a priority for our group, since food miles are a contributor to EF. We feel it will be important to pay special attention to managing the balance between ethnically diverse and local foods.

We hope to contribute to increasing awareness among the staff and customers at the Moon about the importance of having a sustainable food system and the role that EF has to play. The results from our survey will hopefully serve to promote involvement with the AMS LFS and the communication tools developed for the lighter footprint dish will ideally help UBC students understand the importance of reducing UBC's EF and help them to engage in the initiative. In our approach to this project, we are integrating our knowledge and experience from courses and other involvements into the theories and values we have learned through the Land, Food and Community series. Additionally, we are committed to ensuring continuity with the work that previous AGSC students have invested in this project by building on their work.

Our paradigm is constructed of a dual-identity, both as members of Land and Food Systems (LFS) but also as part of the general campus community. Within our group there are a variety of approaches to, and engagements in, creating a sustainable food system. Some have a more direct involvement in lighter footprint strategies, through starting a farm in Pemberton or working with Sprouts or Agora. While others, such as the Dietetics students are incorporating sustainability into their daily lives and professional considerations though it may not be their main focus. The assumption that we all share is one gained through our engagement in the LFS Faculty. We are

approaching this scenario under the assumption that shrinking the footprint of the UBC food system will lead to greater sustainability and that this is not a superfluous effort; it is essential to the integrity and ultimate survival of our planet. Additionally, we see ourselves as community stakeholders, but also as students with unique access to expert knowledge on sustainability. There is an inherent assumption that as both stakeholders and 'experts', we have a responsibility to engage in sustainability efforts.

We have a distinct awareness of the impact of the UBC food system on the greater environment and a heightened understanding of the important role that ecological footprint plays in sustainability. Simply by virtue of being LFS students, we have an increased understanding of words such as 'sustainability', 'food security', and 'lighter footprint'. One of our roles as AGSC students is to bring this information to our community partners in an accessible way, and to spread our understanding of the importance of having a sustainable food system.

## METHODOLOGY

This research project was conducted through CBAR with The Moon to identify barriers and introduce a lower EF dish to their menu. The menu includes specials, combo steam table items, soups and congee options. There is no seating area, and food is served either in Styrofoam containers or compostable containers at an extra charge. We involved ourselves with the restaurant by conducting research, interviews, and market research surveys.

### METHODOLOGY OF RESEARCH

As a preliminary step, we conducted background research to further understand the problem definition of Scenario 2. Our information was gathered from previous AGSC 450 papers, class readings, the Internet, and class forums and lectures. From previous papers, we examined methods of conducting research and presenting results and recommendations. This information provided

valuable insights to our project and allowed us to further develop our research. Since our research concerns a restaurant that is new to the UBCFSP, specific literature regarding The Moon was not available. Since the main objective of Scenario 2 was to lighten the ecological footprint of food venues, our team also collected information on how local and organic versus conventional foods contribute to the ecological footprint. We also conducted background research on The Moon restaurant by examining their website and menu as well as by visiting and eating at the restaurant.

## METHODOLOGY OF COMMUNICATION & INTERVIEWS

In order to gain an understanding of how the Moon operates and the feasible ways in which to implement lighter footprint practices, we interviewed two staff members of differing positions. We conducted the first interview as a group, while only one group member conducted the second interview at a different time. We also interviewed Nancy Toogood, the AMS Food and Beverage Manager, and Nick Gregory, the AMS food purchaser, to gain insight into how the AMS food outlets function and to obtain specific information on the ingredients that The Moon purchases. Interviews were conducted in person, through class discussions and through email correspondence.

## METHODOLOGY OF SURVEYS

A survey was conducted to determine current and prospective customers' interests in terms of food choices and sustainability at The Moon. The survey was created based on the questions developed by Group 29 (2008). Surveys were personally delivered to The Moon customers who were standing in line and to people within the vicinity of the restaurant. These surveys were conducted on March 11, 2009 from 11:30pm to 1:45pm. In total, 82 surveys were filled out, but 10 were incomplete and so were omitted. During the distribution and administration of the survey, a group member made observations and counted which types of to-go containers customers chose. An online version of the same survey was also distributed through the survey software Zoomerang from March 12$^{th}$ to 18$^{th}$. The online version was sent to LFS students through the LFS email

announcements. A total of 66 responses were collected during this session.

Survey results were entered into Microsoft Excel and computed to percentages. For questions, which could be classified as having a Likert-type scale response, numerical values were assigned to categorical responses in order to compute a mean value response (Trochim, 2006). Questions which fell into this distinction were questions 1, 3, 4, 5, 6, 7, and 12 (Appendix B).

## FINDINGS

### REVIEW OF PREVIOUS AGSC 450 PROJECTS

After situating our project within the AMS LFS scenario, we reviewed the reports conducted in previous years to gain a better understanding of the current situation. The Moon is a new addition to this scenario and therefore does not have specific reports and ideas on which to build upon. However, many of the past projects worked with other food outlets within the SUB and so nevertheless provide relevant information. Past projects have focused on incorporating local ingredients into menus to reduce food miles; one such was Group 3 (2006), who worked with Bernoulli's Bagels to include produce from the UBC farm. Similarly, another group developed a granola bar, known as the BC Bar, for Blue Chip Cookies, which makes use of seasonal ingredients (Group 8, 2008). Group 28 (2008) also proposed a switch to organic flour and chocolate since these are major ingredients on the menu that would have a large impact on the environment. Reducing the use of animal products with the introduction of the Vegan Ginger Molasses cookie was another innovative idea (Group 28, 2008). Past projects provided many insightful ideas, beginning with minor changes that individual foodservice outlets could undertake and collectively contribute to the larger scale in reducing ecological footprint.

## WHAT OTHER INSTITUTIONS HAVE DONE

Previous UBCFSP groups made it evident that food outlets at many other institutions across Canada are also working towards lowering their EF. The following are some examples of recent approaches seen in 2007 to 2008 (Sierra Youth Coalition, n.d.):

- **Acadia University:** Created an organic campus farm in Summer 2008.
- **École Polytechnique:** Established a Green Cafeteria: Sustainable purchasing and recycling.
- **SFU:** Focused on *Eat BC!* which is a challenge to increase the amount of local food procurement.
- **Trent University:** Has had weekly consultations with Aramark (food service provider) about increasing percentage of local organic food on campus and switching to biodegradable packaging; successful Lug-A-Mug campaign.
- **Lakehead University:** Had Aramark commit to include 100% biodegradable packaging in their next contract; their student union's restaurant, Outpost, sources local organic bread and cheese, serves fair trade organic coffee.
- **UBC (Vancouver campus):** AMS hired a Sustainability Strategy Coordinator, and developed the *Lighter Footprint Strategy*.
- **Université du Québec à Chicoutimi (UQAC):** Student Union signed a food services contract: local, organic and fair trade products are now available.
- **University of Victoria:** Events like 100-mile dinners, focus groups (the food group is running a "locavore challenge" to help encourage purchasing local food)
- **University of Western Ontario:** University Students' Council switched to biodegradable packaging in its two on-campus bar/restaurants and set to hire part time sustainability commissioner to audit operations.

## DEFINING LIGHTER ECOLOGICAL FOOTPRINT MENU ITEMS

The EF of our food supply is an important aspect to consider when looking to increase food system sustainability. Wackernagel and Rees introduced a commonly used definition of ecological footprint in 1996. EF represents the amount of land, measured in global hectares (gha), required to support a given groups' consumption level. Specifically, it is the sum of the cropland, grazing land, forest and

fishing grounds required for production of goods and services, and for absorption of the accompanying waste (Wackernagel and Rees, 1996).

Presently there is no simple way to quantify the environmental impact of any given food item because an enormous number of factors affect the final value. However, there are certain foods that have inherently high impact because of the large amount of energy and resources that go into production. These foods correspond with items that are higher up on the food chain. Collins and Fairchild estimate the EF in global hectares, and this can be used to illustrate the food chain effect. Although based on data from the UK, table 1 clearly shows that animal products have relatively higher EFs than plant foods. The Moon utilizes conventional animal products, including beef, pork, chicken, eggs and fish in the majority of their dishes, resulting in options with high EFs.

| Food Item | Ecological Footprint (gha/kg) |
|---|---|
| Beef | 0.0157 |
| Pork | 0.0019 |
| Poultry | 0.0016 |
| Eggs | 0.0012 |
| All other cereals | 0.0010 |
| Fresh green vegetables | 0.0003 |

Table 1. Collins and Fairchild's estimation of select industrially produced foods

Grain products are not always thought of as high EF foods because they are plant sources of food. Indeed, Collins and Fairchild put all grains except for flour into the 'all other cereals' category. However, the Moon relies heavily on rice, offering it with every dish. This has the potential to impact the EF of the Moon because rice production is far higher in Asia than in Canada. This food item has a relatively low EF in terms of global hectares, but may have a large impact on food system sustainability in terms of food miles. Food miles are defined as "the distanced food travels from point of production to point of consumption and the environmental impact of getting it there" (Bentley, 2005).

The discussion above illustrates that there are numerous factors of production, transportation and consumption affecting the overall environmental impact of our food. For a more robust conceptualization of EF, our group has established a list of influential factors, ranked in descending order of impact. The idea for this ranking was based on the approach taken by group 28 in 2008-2009.

| **Factor** | - **Rationale** |
|---|---|
| Location of production<br>- | Takes into consideration food miles, but also accounts for the fact that consumers have more say in the policy issues around land use, processing techniques, etc. of food produced nearby. |
| Plant vs. Animal source<br>- | As discussed above, foods from plant sources require less intensive input to produce. |
| Organic production methods<br>- | Represent a highly controlled and well-researched method of environmentally friendly food production. Refer to discussion of organic food production on for more information. |
| Other forms of certification: ie. shade-grown, free-range, fair trade | While important, these factors are ranked below organic because they are often less regulated, or are applicable to a narrower range of foods |
| Degree of processing and amount of packaging | More energy inputs are required to process and package foods, often resulting in more carbon emissions. |
| Nutrition considerations<br>- | In the quest to reduce ecological footprints and create a sustainable food system, it is also important to consider the health and nutritional status of the people within the system. |

Table 2. List of Factors influencing EF

Even with a comprehensive list of contributing factors, we are still left without a simple way to classify multi-ingredient dishes as having low, moderate, or large EFs. To tackle this problem, our group turned to the "LOV Line" used by AMS Food Services to promote lighter footprint options. The LOV Line uses three categories (Local, Organic and/or Vegan) to summarize many of the factors influencing the ecological footprint of food. We decided to align our definition with one that is already in existence, and has already been promoted on campus. This system of classification is a natural choice for our scenario, because it builds on previous UBCFSP work, it is meaningful to our community partners and it can be applied to the Lighter Footprint recipe developed for the Moon.

In addition to being an established tool, the LOV classification is user-friendly. Vegan items only contain ingredients from plant sources, and organic ingredients should come clearly labeled with a certification stamp, However, the 'local' designation is somewhat subjective, but seems to mean grown on-campus in Vancouver (AMS, 2008). With the LOV line, the retailer needs to simply create a customized label for the Lighter Footprint dishes by checking the boxes next to local, organic and/or vegan if applicable, and providing any details about the sources of ingredients.

## RESEARCH ON ECOLOGICAL AND HUMAN HEALTH BENEFITS OF ORGANIC FOODS

Demand for organic foods is increasing in Canada as evidenced by a growth rate of 20% according to BC Industry Organic (BCMAL, 2007). Popularity of organic foods over conventional foods is due to a perception that organic foods are a safe food source for both human and environmental health (BCMAL, 2007). It is thought that human health can benefit from the consumption of organic rather than conventional produce due to the higher amounts of bioactive compounds found in organic produce (Niggli, Slabe, Schmid, Halberg, & Schluter, 2008). Organic meats and milk have been found to have higher amounts of important fat-soluble vitamins and polyunsaturated fatty acids in a study in the UK conducted with 25 farms (Niggli *et al.*, 2008). A balance of omega-3 to omega-6 fatty acids is important for heart health, and it was discovered that organic milk tends to have an increased level of omega-3 fatty acids without an increase of omega-6 fatty acids, helping to keep an appropriate balance (Niggli *et al.*, 2008). Safety-wise, organic foods are noted as being equally safe in terms of pathogens as conventional foods (Niggli *et al.*, 2008). Lower levels of nitrates and pesticides are benefits of organic agriculture, and contribute to both human and environmental health due to a reduction in pollution, a potential increase in biodiversity and improved soils in which to produce more food. In general, organic agriculture better supports natural wildlife growth within the surrounding environment (Hammermiester, 2007). These properties are

deduced to expand ecological well-being by helping to mitigate climate change and water usage, while also stimulating the economy and number of jobs available for individuals (Niggli *et al.*, 2008).

## INTERVIEW FINDINGS OF TWO MOON EMPLOYEES:

Our first interview was originally set up with one of the major stakeholders of The Moon, but since he was busy at that time, we interviewed another employee. From the interview, we were surprised to learn that an estimated three out of ten customers requested a compostable container without being asked by the cashier. When questioned about MSG in their dishes, the employee informed us that only the noodle soup and the special menu items contain MSG. However, if a customer asks to have an MSG-free dish, their request will be honoured. When asked about the vegetarian options available at The Moon, we found that aside from the two vegetarian items available on the steam table, there is also a vegetarian noodle soup. The most popular dish, however, is sweet and sour pork. Currently, The Moon orders their ingredients through the AMS from a list of available ingredients. Since last year, The Moon's prices have increased and there have been slight changes to the menu items available.

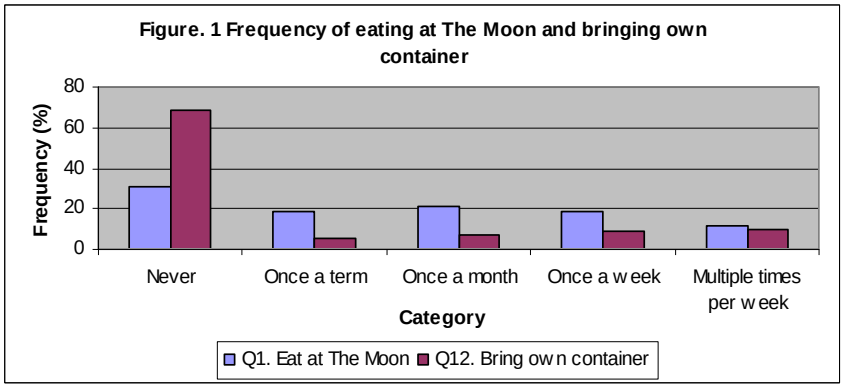
When asked about the possibility of creating a low EF dish for The Moon, the employee responded that the creation of a completely new dish would be a better idea than replacing ingredients in an existing dish. Egg Foo Young was one possibility that our group presented, but the employee believed this to be a "Western Chinese dish" that would not be appropriate for their traditional approach. Customers have requested more dishes with seafood, but currently the only item containing fish is a special, which contains both salted fish and chicken.

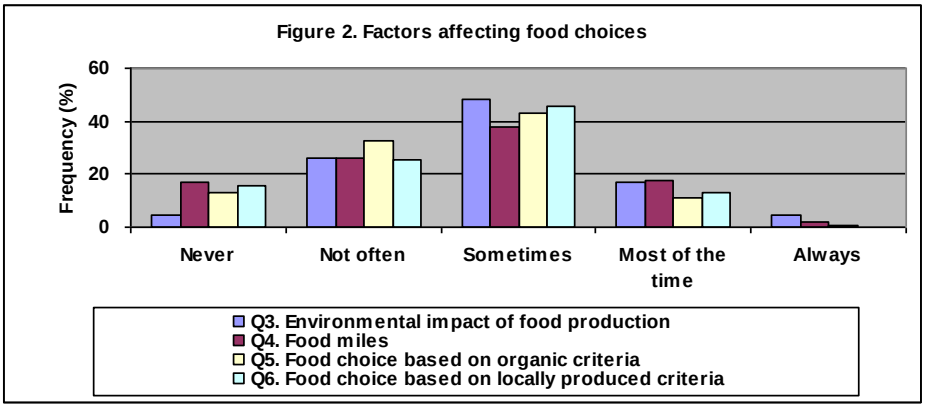
The second interview involved another staff member with a different position. Questions regarding current practices at The Moon revealed that this restaurant currently uses canola oil for cooking purposes. Knowledge of the type of oil used is of ecological and nutritional concern as many of the dishes at this outlet are stir-fried.

The majority of the questions asked related to future considerations for menu items and new ecologically friendly practices. When asked about adding a new lower EF dish to the menu, the response was that only a special could be considered at this time because there is physically not enough space on the serving counter for a permanent addition. It was speculated that a new dish might not be possible this year because of a shortage of staff, but the employee was open to suggestions of using organic local meats, and introducing an ecologically friendly menu item as a special. The employee stated that he would like to receive recommendations and recipes that can be experimented with before the item is introduced. Stamp cards and signs promoting the nutritional value and environmental impact of the new dish were also deemed to be a possibility. When questioned about the possibility of discontinuing the use of Styrofoam containers, it was noted that it was too expensive to do this even if customers were willing to pay more for all menu items. The Moon will still offer both Styrofoam and compostable containers.

## SURVEY FINDINGS:

A total of 148 surveys were collected, but only 138 were complete and qualified for analysis. Surveys conducted in person and online were combined for analysis, as no major differences were observed between responses of the two groups. To determine applicability of research data to The Moon, respondents were asked to indicate frequency of eating at the restaurant (Q1). Approximately 30% never eat at The Moon,

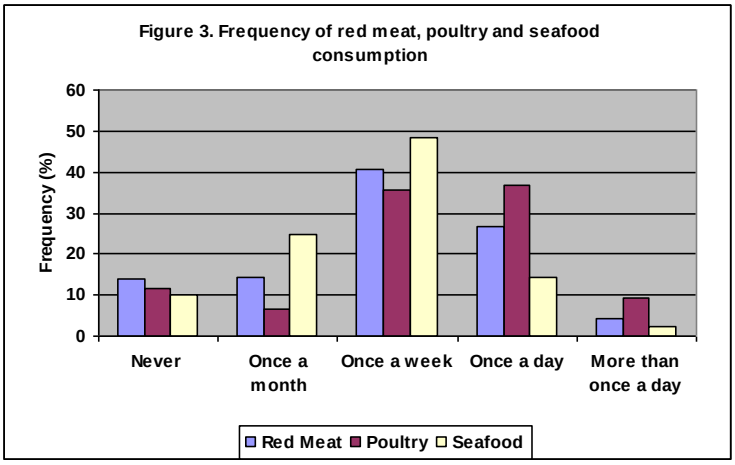


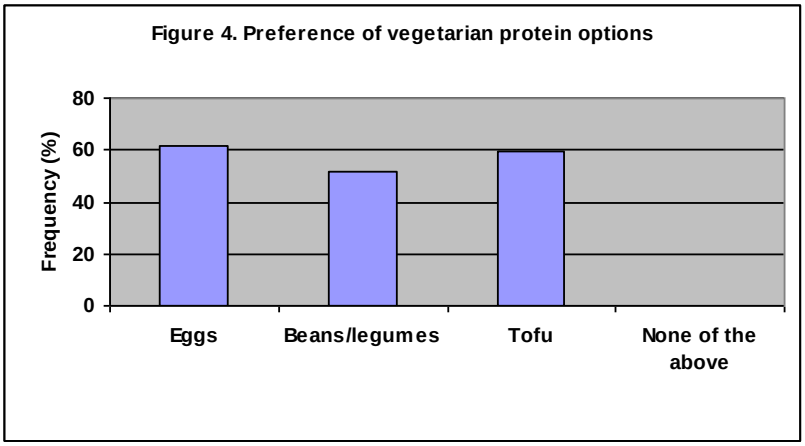
while 19%, 21%, 18%, and 12% eat at The Moon once a term, once a month, once a week and multiple times per week respectively (Figure 1). Numerical values of 1 to 5 were assigned to the categorical responses with 1=never and 5=multiple times per day. The mean value was 2.62, indicating that respondents as a whole eat at The Moon between once a month and once per term.

The survey revealed that 56% of respondents were familiar with the concept of an ecological footprint, 24% were somewhat familiar and 20% were not familiar with the concept. These percentages suggest some awareness of ecological footprint.

One purpose of the survey was to assess whether or not respondents' food choices were affected by various determination factors of low ecological footprint. Respondents were asked whether or not environmental impact, food miles, organic foods or local foods affected their food choices (Q3, Q4, Q5 and Q6) (Figure 2). In all cases the majority of respondents indicated that these factors somewhat affect their food choices, however mean values (range 2.54-2.91) revealed that food choice was between not often and somewhat affected by these factors (never=1, not often=2, somewhat=3, most of the time=4, always=5).




Animal product consumption is a major determinant of ecological footprint. Survey results show that red meat, poultry and



seafood consumption is frequent. We observed that majority of respondents consume red meat (mean=2.93) and seafood (mean=2.74) between once a month and once a week, while poultry consumption (mean=3.26) is between once a week and once a day (Figure 3) (never=1, once a month=2, once a week=3, once a day=4, more than once a day=5). A preference for poultry is shown among the three options since respondents consume poultry more frequently than the other two options.

Respondents were asked for preference of vegetarian options and to indicate all options that may apply (Q8). Eggs appealed to 62% of respondents, 51% like beans/legumes, and 59% like tofu suggesting a similar likeness for these options (Figure 4). 4% of respondents indicated that they would like other vegetarian options such as nuts or seeds and vegetables. No respondents indicated that all of the options were unappealing.

85% of respondents would choose more environmentally friendly food options if they were offered (Q9) (Appendix D, Table G). Respondents who expressed a willingness to pay extra (54%) for these food options and not willing to pay extra (46%) were similar (Q10) (Appendix D, Table G). On average, respondents are willing to pay $0.21 extra per item (Appendix D, Table H).

Of the 138 respondents, 75% expressed that composting take-out containers is important to them, while 9% said it was not important and 15% revealed that it is not a concern (Q11) (Appendix D, Table F). Over half of the respondents (69%) never bring their own container to save 25cents, while 5% to 9% bring their own container once a term, once a month, once a week and multiple times per week (Q12) (Figure 1)

## FINDINGS OF INTERVIEW WITH NANCY TOOGOOD & CAROLINA GUIMARAES:

In a group interview with Nancy Toogood, Food and Beverage Manager of the AMSFBD, and Carolina Guimaraes, AMS Sustainability Strategy Coordinator, we gained deeper insight into the

AMS Lighter Footprint Strategy. The Strategy was developed out of the desire to have a leading role in shrinking UBC's ecological footprint to a sustainable level. They aim to do so by practicing environmental justice and also by campaigning for sustainability within UBC and the larger community outside of the university campus (AMS Lighter Footprint Strategy, n.d.).

Carolina was hired to implement the Strategy, part of which includes the Local Produce Procurement Liason. This liason is concerned with sourcing, availability, seasonality and deliverability in order to incorporate more local and organic foods into AMSFBD (Toogood & Guimaraes, 2009).

Although all AMS food outlets offer compostable containers, the AMS is still not completely comfortable with how sustainable they actually are. One concern is whether consumers are throwing these containers in the garbage, which would be counterproductive and wasteful. Meanwhile, the economic feasibility of providing compostable containers is still not clear (Toogood & Guimaraes, 2009). The standard at The Moon is to serve dishes in Styrofoam containers, and to provide a compostable container only if requested (The Moon staff, 2009). At this time, the AMS cannot absorb the cost of completely phasing out Styrofoam containers and using only compostable containers. Nancy explained that if this was done, there would be an overall decrease in revenue, and so AMS programs would suffer from decreased funds. It is apparently also not feasible to implement only a small increase in the prices of the dishes in an effort to cover the increased cost of the containers, because the price increase would have to be greater than the additional cost and would likely deter customers (Toogood & Guimaraes, 2009).

A great alternative to both Styrofoam and compostable containers is of course to bring your own container, and this is being highly encouraged by the AMS not only by offering a 25 cent discount for doing so, but also by advertising Rubbermaid® Collapsible Containers. These containers are purchased from Home Hardware, a Canadian owned and operated business, and are

then sold at The Outpost in the SUB (Toogood & Guimaraes, 2009).

Nancy and Carolina reminded us about Eco-Friendly Day, which was originally an idea presented by a previous AGSC 450 group and has since been successfully implemented by the AMS. On the last Thursday of every month, all AMS food service outlets feature one or more lower EF item to simultaneously increase awareness amongst consumers about the environmental impact of their food choices and in an effort to lower their own EF. The AMS has developed the LOV product line, and many items are featured in AMS food outlets (Eco-Friendly Day, n.d.).

Several of our group members stopped by The Moon at different times on Eco-Friendly Day in March to sample their LOV item. According to the AMS website, The Moon offers a dish of Curried Tofu Vegetables on Eco-Friendly Day, which uses locally grown carrots, peppers and potatoes as well as locally produced tofu (Eco-Friendly Day, n.d.). However, upon stopping by and asking about the lighter footprint special, one of our group members was pointed toward the tofu and vegetable dishes, which are the standard vegetarian options available everyday. When asked about the special for Eco-Friendly Day, first at 12:00pm and later at 3:45pm, both cashiers replied that there wasn't one. Some reasons for resistance to change as identified by Nancy and Carolina included language barriers, mindset, other priorities, and the fact that managers of the AMS food outlets are primarily by profit incentives (Toogood & Guimaraes, 2009).

PRICE COMPARISON FINDINGS BETWEEN CONVENTIONAL & ORGANIC PRODUCE:

**Table 1: Current B.C. Price Comparison Between Conventional and Organic Produce**

| **Produce** | **Price** | | | |
|---|---|---|---|---|
| | **Conventional (C)** | **Pro Organics (O)** | **Difference (O - C)** | **Difference (%)** |
| | **(Dollar/Each)** | **(Dollar/Each)** | **(Dollar/Each)** | **(%/Each)** |
| CAULIFLOWER | $3.76 | $3.80 | $0.04 | 1.06 |
| CELERY | $0.94 | $1.55 | $0.61 | 64.89 |
| CUCUMBERS | $1.05 | $2.00 | $0.95 | 90.48 |
| LETTUCE ICEBERG | $1.10 | $3.20 | $2.10 | 190.91 |
| POTATOES PEELED | $0.62 | $0.58 | -$0.04 | -6.45 |
| BROCCOLI CROWNS | $2.78 | $5.99 | $3.21 | 115.47 |
| | **(Dollar/lb)** | **(Dollar/lb)** | **(Dollar/lb)** | **(%/lb)** |
| BEAN SPROUTS | $0.55 | $0.76 | $0.21 | 38.18 |
| CARROTS | $0.55 | $0.88 | $0.33 | 60.00 |

| | | | | |
|---|---|---|---|---|
| GINGER | $1.60 | $5.83 | $4.23 | 264.38 |
| ONIONS | $0.25 | $0.82 | $0.57 | 228.00 |
| PEPPERS-GREEN MED | $1.03 | $2.48 | $1.45 | 140.78 |
| PEPPERS-RED | $1.14 | $2.08 | $0.94 | 82.46 |
| TOMATOES | $1.19 | $2.03 | $0.84 | 70.59 |
| | **(Dollar/bunch)** | **(Dollar/bunch)** | **(Dollar/bunch)** | **(%/bunch)** |
| ONIONS-GREEN | $0.30 | $0.79 | $0.49 | 163.33 |
| | **(Dollar/case)** | **(Dollar/case)** | **(Dollar/case)** | **(%/case)** |
| BOK CHOY | $23.75 | $35.00 | $11.25 | 47.37 |
| MUSHROOMS | $18.10 | $32.80 | $14.70 | 81.22 |

In order to assess the economic feasibility of incorporating an organic dish into The Moon's menu, the price differences between conventional and organic produce were compared. Pro Organics is an organic wholesale distributor in Vancouver that Nick Gregory (purchaser for AMS food outlets) recommended we get our produce price quotes from since the AMS Food & Beverage department did not have them. The price of various conventional produce that The Moon already purchases was compared to their organic counterparts offered by Pro Organics (see Table 1). In general, conventional produce is less expensive than the equivalent organic item with the exception of potatoes. According to the information provided, price differences are as low as -6% (potatoes) to as high as 264% (ginger) when comparing conventional to organic products.

## DISCUSSION OF FINDINGS:

From the information gathered through the surveys, interviews and research methods we determined that there were several barriers facing the implementation of a lighter EF menu item at The Moon. Our discussion is structured around these main barriers, which are the cost and access of local and organic produce, logistics of implementation, and access to information. We then discuss how our findings and information regarding barriers resulted in the development of a potential lighter EF menu item for The Moon.

### COST & ACCESS BARRIERS OF LOCAL & ORGANIC PRODUCE:

From our interviews with the staff at the Moon, we found that one of their main concerns regarding introducing a lower EF food menu item at the Moon was the cost and manageability of obtaining local and organic produce. If local and organic produce is not available, then a lower EF

food menu item cannot be implemented. Therefore, our group decided to gather information about the cost and feasibility of accessing local and organic produce.

From our interview with Nick Gregory, we found that if the Moon wanted to order organic items, they only need to request information from him and he will try to source the items from one of his suppliers. Therefore, the availability of local and organic produce should not be a problem when trying to introduce a lower EF menu item with local and organic produce.

From our price comparison of organic and conventional produce, we were not surprised to find that organic produce is more expensive. While we recognize that the new lower EF menu item will cost more due to the increased cost of ingredients, we believe that this should not be a major concern for implementing the new dish. Our survey results indicate that 85% of the respondents would choose the more environmentally friendly food options if they were available at the Moon and slightly more than half of these respondents are willing to pay more for the item. From our price comparison of organic and conventional produce, we can see that there is a wide range in price differences between specific types of organic and conventional produce. For example, organic carrots are only $0.33 more per pound compared to the conventional option while organic ginger cost $4.23 more per pound. Therefore, we can try to introduce organic produce with a smaller price difference in the new lower EF dish to help keep the increase in cost minimal. Although the increase in cost of an organic dish is inevitable, we believe that a slight increase in the cost should not be a major barrier for implementing the new lower EF menu item.

Some possible sources of error for the price comparison used may be due to the price unit conversions between weight and per unit cost for the different produce items, since the separate distributors use different units for some of the produce items in the comparison. Also, from this price comparison, it is difficult to know how much more exactly per serving the new lower EF dish

will cost. Additionally, the increase in cost of the dish is not simply the increase cost of ingredients. This is similar to the increased cost for phasing out Styrofoam containers as discussed earlier.

## LOGISTICAL BARRIERS TO LIGHTENING FOOTPRINT:

The logistics involved in introducing a new dish into the menu of The Moon are vast. To incorporate a new item into the menu and to facilitate the receiving of new goods, re-organization and additional training of staff members would have to take place. Staff members would likely have to learn to handle invoices from new suppliers and how to store and organize the new items, while the chefs would have to learn how to prepare the new dish in an efficient manner that fits into their current regime. In addition, the steam table would either have to be re-organized or re-designed to accommodate the new dish.

Since replacing one of the current dishes is perhaps not feasible, it may be necessary to consider planning for a new steam table. Advertising and promotion of the new dish are other important considerations for its success, as is appropriate pricing to ensure that adequate profit is made. Advocates for lightening the AMS footprint could help to raise awareness of the new special option. Having a Sustainability Outlet Officer ensure that the food outlets are ready to feature their LOV item in the days leading up to Eco-Friendly Day, and help them with any issues or concerns they may have regarding this initiative may help make sure that the current lighter EF menu item is served. (Toogood & Guimaraes, 2009).

## BARRIERS TO ACCESSING INFORMATION:

After an initial interview with The Moon staff, our team recognized that there was a lack of awareness of sustainability issues. We felt that one reason for this was a lack of access to information regarding the benefits of producing a sustainable food system. It is clear that the central managerial body of the AMSFBD has an intention to lower their EF. However, communication between the central managerial body of the AMSSFBD to convey the purposes and benefits of creating a

sustainable food system could be stronger. It is difficult for a small business to put time and money into investigating methods of reducing EF with its limited resources especially when the benefits of such practices are unknown. Therefore, an initial push from interested bodies is required to introduce the sustainability concept to an audience who is unfamiliar with this knowledge. Since one of The Moon staff we interviewed spoke little English, we recognize that language may be a barrier to proper communication thus preventing understanding between the central managerial body and the individuals who run the food venue. Moreover, we found that The Moon staff did not know that it was possible to obtain organic ingredients from the central purchaser of the AMSFBD. This observation further confirms the lack of understanding in food venues of the AMS LFS.

Although The Moon currently provides some lower EF food options and compostable containers, we feel that sustainability knowledge has not been passed on adequately to employees. Over the years, the staff changes significantly as new students are hired. Thus, new employees should be trained to inform customers of the existence of lower EF menu items. In addition, employees should be trained to remind customers that compostable take-out containers are available and that it is possible to save 25 cents by bringing their own container.

## RECIPE DEVELOPMENT BASED ON FINDINGS:

We performed recipe searches through Google and in various household cookbooks to find an appropriate recipe to suggest as a LOV item for The Moon. We searched for vegan Chinese food recipes, and decided upon a Spicy Seasonal Stir-fry, the full recipe and nutritional analysis of which can be found in Appendix A. This dish features locally produced organic Sunrise tofu, locally grown organic vegetables from the UBC farm including carrots, beans, cabbage, bok choi and garlic, and Canadian non-GMO canola oil. We altered the original recipe to include more locally available vegetables, and also chose to substitute almonds for cashews, since cashews are not produced in North America while almonds can be sourced from California (Davis, 1999; Almonds, 2009).

However, since we did find that both walnuts and hazelnuts could be grown locally, we recommend that next year's AGSC 450 group sample our proposed recipe with our recommended changes as well as trying it these nuts.

According to Groups 16 and 20 from the 2008 AGSC 450 class, the UBC Farm could potentially increase its production of carrots, cabbage, fava beans, pole beans, Maxibel bush beans, Chinese long beans, bok choi, gai lan, sui choi, and garlic. We therefore consider the vegetables we suggested to be appropriate; they could even vary depending on what is in abundance at the UBC farm, since all these vegetables require approximately the same cooking time and method.

Our group and our Teaching Assistant Sophia Baker-French sampled the proposed recipe and were pleased with it, but have some recommendations for improvement. We followed the recipe exactly, except for the one slight change of adding almonds in the beginning with the vegetables, rather than adding them as a finishing touch before serving. From previous cooking experience, we felt as if this would allow them to soften slightly and to absorb some flavour and juices from the vegetables, and make them more palatable. Our group's unanimous opinion was that the dish could definitely use more flavour and spice; perhaps more of the hot and spicy chili sauce and soy sauce could be used. In addition, since the pressed tofu was firm, we found that it did not absorb a lot of the flavour of the sauce, and we therefore recommend that medium tofu be used. There was also agreement across the group that increasing the ratio of vegetables to tofu would be more appealing.

## RECOMMENDATIONS:

Based on our discussion of the findings, we have several recommendations for the teaching team of AGSC 450, the students who will be working on the scenario next year, the AMSFBD and The Moon restaurant. These recommendations are made here in point form; further description can be found in previous sections of the paper.

### TO THE TEACHING TEAM:

- Create a common definition or method to assess EF of food items.
- Assign groups when registration list becomes finalized so that confusion does not occur.
- Allow students to choose scenarios so that all members of the group are interested in the project.

TO AGSC 450 STUDENTS:

- Complete taste test with The Moon staff using our proposed recipe.
- After the dish is implemented, collect data on consumer satisfaction and preference over other or similar dishes.
- Design and conduct a new survey that would enable statistical analysis so that results are more accurate and then compare the changes to our original data.
- Look into the ecological impact of condiments in lightening EF (i.e. sauces).
- Look into sustainable rice (Group 29, 2009) and try to find options to present to The Moon.
- Create an EF information awareness package and make it available to The Moon staff to increase their knowledge and appreciation of the Lighter Footprint Strategy and menu items.
- Look into organic, local meat options to use in current menu items.

TO THE AMS FOOD & BEVERAGE DEPARTMENT:

- Continue to look for more ecologically-friendly disposable food containers.
- Increase communication with employees of The Moon to make sure that they understand the AMS Lighter Footprint Strategy and its benefits.

TO THE MOON:

- Adopt new recipe after adjusting to taste, and implement poster to increase awareness.
- Verbally offer customers the compostable containers and display them more visibly (higher stacks of compostable containers than Styrofoam containers should be visible to the public).
- On Eco-Friendly Day, have cashiers inform customers of the regular 25 cent discount for bringing their own containers to AMS food and beverage outlets such as The Moon.

- Switch from Styrofoam containers to more ecologically-friendly containers when the AMSFBD makes this a more feasible option.
- Increase total use of local and organic products – incorporate into everyday menu, not just specials.

## CONCLUSION:

Engagement in the AMS Lighter Footprint Strategy is an important contribution to the overall UBCFSP that will help UBC become a leader in sustainability. The Moon Noodle Bar has recently joined the UBCFSP and is encountering barriers to engaging in the Lighter Footprint Strategy. Through interviews, surveys and literature reviews, we have identified information and strategies that can help decrease these barriers to involvement. In order to support The Moon, we have developed a vegan Chinese recipe and promotional tool for this new menu item. We have also identified how The Moon can incorporate organic ingredients into their existing menu items. We have begun to lay the groundwork for a successful partnership between the Moon and AGSC 450 students, and have provided recommendations for the continuation of this partnership.

## REFERENCES:


About.com-Part of The New York Times Company. (2009). *Chinese Food. Spicy Tofu.* Retrieved March 1, 2009, from http://chinesefood.about.com/od/tof1/r/spicytofu.htm

AMS. (2008). *AMS Lighter Footprint Strategy.* Accessed on February 20, 2008, from http://www.amsubc.ca/index.php/student_government/subpage/category/ams_lighter_footprint_strategy/

Bentley, S. (2005) *Fighting Global Warming at the Farmer's Market: The Role of Local Food Systems in Reducing Greenhouse Gas Emissions*. Food Share, Toronto.

British Columbia Ministry of Agriculture and Lands. (2007). British Columbia Organic Industry Overview. Retrieved from http://www.agf.gov.bc.ca/organics/organics_industry/BC_Organic_Industry_Overview_dec2007.pdf

Centers for Disease Control and Prevention. (n.d.). *Nutrition for Everyone- Protein.* Retrieved March 28, 2009, from http://www.cdc.gov/nutrition/everyone/basics/protein.html#top

Collins, A., Fairchild, R. (2007). Sustainable Food Consumption at a Sub-national Level: An Ecological Footprint, Nutritional and Economic Analysis. Journal of Environmental Policy & Planning Vol. 9, No. 1, March 2007, 5–30

Davis, Kristin. (1999). *Cashew – Echo Technical Note.* Retrieved March 10, 2009, from http://www.echotech.org/mambo/images/DocMan/Cashew.pdf.

Farmology. (2007). *Almonds.* Retrieved April 1, 2009, from http://www.farmology.com/almonds.html

Global Footprint Network. (2008). *Advancing the Science of Sustainability*. Retrieved March 31, 2009, from http://www.footprintnetwork.org/gfn_sub.php?content=glossary#globalhectare

Group 15. (2008). *UBCFSP Scenario 3: Exploring Ways to Lighten AMS Food and Beverage Department's Ecological Footprint- Venue: Blue Chip Cookies.* University of British Columbia. Faculty of Land and Food Systems: AGSC 450: Land, Food and Community III. Retrieved March 31, 2009, from https://www.vista.ubc.ca/webct/urw/lc5116011.tp0/cobaltMainFrame.dowebct

Group 16. (2008). *UBCFSP Scenario 4: UBC Farm to Campus Plates.* University of British Columbia. Faculty of Land and Food Systems: AGSC 450: Land, Food and Community III. Retrieved March 20, 2009, from https://www.vista.ubc.ca/webct/urw/lc5116011.tp0/cobaltMainFrame.dowebct

Group 20. (2008). *UBCFSP Scenario 4: UBC Farm to Campus Plates.* University of British Columbia. Faculty of Land and Food Systems: AGSC 450: Land, Food and Community III. Retrieved March 20, 2009, from https://www.vista.ubc.ca/webct/urw/lc5116011.tp0/cobaltMainFrame.dowebct

Group 28. (2008). *UBCFSP Scenario 3: Exploring Ways to Lighten The Ecological Footprint of Blue Chip Cookies.* University of British Columbia. Faculty of Land and Food Systems: AGSC 450: Land, Food and Community III. Retrieved March 31, 2009, from https://www.vista.ubc.ca/webct/urw/lc5116011.tp0/cobaltMainFrame.dowebct

Group 29. (2008). *UBCFSP Scenario 3: Exploring Ways to Lighten AMS Food and Beverage Department's Ecological Footprint: A Focus on the Pendulum and Development of an AMS-wide Strategy to Encourage "Ecological Eating".* University of British Columbia. Faculty of Land and Food Systems: AGSC 450: Land, Food and Community III. Retrieved March 31, 2009, from https://www.vista.ubc.ca/webct/urw/lc5116011.tp0/cobaltMainFrame.dowebct

Hammermiester, Andy. (2007). *Organic Agriculture Centre of Canada (OACC).* Retrieved March 28, 2009, from http://www.organicagcentre.ca/Consumers/cons_benefits_organic_ah.asp

Niggli, U., Slabe, A., Schmid, O., Halberg, N., & Schluter, M. (2008). *Vision for an Organic Food and Farming Research Agenda 2025 - Organic Knowledge for the Future - Technology Platform Organics.* Retrieved February 1, 2009, from www.orgprints.org/13439

Redefining Progress. (2009). *About the Ecological Footprint.* Retrieved March 28, 2009, from http://www.rprogress.org/ecological_footprint/about_ecological_footprint.htm

Richer, Liska. (2008). *The UBC Food System Project (UBCFSP): Summary Report 2008.* Retrieved March 21, 2009, from https://www.vista.ubc.ca/webct/urw/lc5116011.tp0/cobaltMainFrame.dowebct?JSESSIONID=d5PDJNkB7SdfHwxv41HKxZ1jl6QGSJ4mFxP8dfQ59n5ScFm3gGzj!-1770655094!node08.vista.ubc.ca!20001!-1!-220278759!node09.vista.ubc.ca!20001!-1

Richer, Liska. Personal communication, January 14, 2009.

Sierra Youth Coalition. (2008). *Sustainable Campuses: SYC Guides*. Retrieved March 25, 2009, from http://syc-cjs.org/sustainable/tiki-index.php?page=SYC+Guides

Staff member at The Moon. Personal communication, The Moon, February 2009.

Toogood, Nancy & Guimaraes, Carolina. Personal communication, March 11, 2009.

Trochim, W. M. K. (2006). *Likert Scaling. Research Methods Knowledge Base*. Retrieved April 7, 2009, from http://www.socialresearchmethods.net/kb/scallik.php

UBC Alma Mater Society. (n.d.). *AMS Lighter Footprint Strategy*. Retrieved March 28, 2009, from http://www.amsubc.ca/index.php/student_government/subpage/category/ams_lighter_footprint_strategy/

UBC Alma Mater Society. (n.d.). *Eco Friendly Day*. Retrieved March 28, 2009, from http://www.amsubc.ca/index.php/student_government/subpage/category/eco_friendly_day/

UBCFSP Scenario. 2009. The University of British Columbia: British Columbia, Canada

Wackernagel, M., Rees, W.E.. (1996). *Our Ecological Footprint. Reducing Human Impact on the Earth*. New Society Publishers, Gabriola Island, British Columbia, Canada. Retrieved March 31, 2009, from http://www.iisd.ca/consume/mwfoot.html

Zello, Gordon A. (2006). *Dietary Reference Intakes for the macronutrients and energy: considerations for physical activity*. Retrieved April 1, 2009, from http://pubs.nrc-cnrc.gc.ca/rp/rppdf/h05-022.pdf

## APPENDICES

APPENDIX A:

**Spicy Seasonal Stirfry (Spicy Tofu, 2009).** Prep Time: 5 minutes, Cook Time: 7 minutes

Ingredients:
300 grams Sunrise Pressed or Extra Firm Tofu
3 cups vegetables (carrots, beans, cabbage, bok choi, garlic, onions, and mushrooms)
1/4 cup almonds
2 tablespoons canola oil

Sauce:
1 tablespoon soy sauce
1 tablespoon sesame oil
1 tablespoon hot and spicy chili sauce
1 tablespoon cornstarch dissolved in 2 tablespoons of cold water

Preparation:
Cube tofu and vegetables into 1/4" cubes. Heat oil in wok. Stir fry vegetables for 2 minutes or until half cooked. Add tofu, and stir fry for another 1 minute until heated through. Add sauce and cook until sauce thickens. Add more water if necessary. Toss in almonds and serve. Makes 4 servings.

**Nutrition information per serving (1/4 recipe):**
Per ¼ recipe: 358 kcal, 17g Fat, 2g Sat Fat, 347mg Na, 41g CHO, 3.5g Fibre, 2.25g Sugars, 14g PRO, 24.5% (147 mcg) Vit A, 40% (18 mg) Vit C, 42.5% (552 mg) Ca, 30.75% (2.5 mg) Fe

Approximately 42% calories from fat, 45% calories from carbohydrate, 15% calories from protein.

Serving this dish as part of a meal with rice or noodles will increase the percentage of carbohydrate and decrease the percentage of fat, thereby more closely following the AMDRs for these nutrients (Zello, 2006). This would also result in consumption of complete proteins (*Protein*, 2009).

APPENDIX B:

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## Questionnaire for *The Moon*

1. How often do you buy food items at The Moon? (Choose the closest estimate)

☐ Never ☐ Once a term ☐ Once a month ☐ Once a week ☐ Multiple times per week

2) Are you familiar with the concept of an ecological footprint?

☐ Yes ☐ No ☐ Somewhat

3) Does the environmental impact of food production affect your food choices?

☐ Never ☐ Not often ☐ Sometimes ☐ Most of the time ☐ Always

4) Do food miles (how far your food travels to get to you) affect your food choices?

☐ Never ☐ Not often ☐ Sometimes ☐ Most of the time ☐ Always

5) Do you choose foods based on whether or not they are organic?

☐ Never ☐ Not often ☐ Sometimes ☐ Most of the time ☐ Always

6) Do you choose foods based on whether or not they are locally produced?

☐ Never ☐ Not often ☐ Sometimes ☐ Most of the time ☐ Always

7) How frequently do you consume:

| | Never | Once a month | Once a week | Once a day | More than once each day |
|---|---|---|---|---|---|
| a) Red meat | ☐ | ☐ | ☐ | ☐ | ☐ |
| b) Poultry | ☐ | ☐ | ☐ | ☐ | ☐ |
| c) Seafood | ☐ | ☐ | ☐ | ☐ | ☐ |

8) Which of the following vegetarian options appeal to you most? Please circle all that apply.
Eggs Beans/Legumes Tofu None of the above
Other_____

9) Would you choose more environmentally friendly foods if they were available at The Moon?
☐Yes ☐No

10) Would you pay more for environmentally friendly food options?

☐Yes ☐No

If 'yes', how much **more per item** are you willing to pay? (circle one)

$0.10 $0.20 $0.30 $0.40 $0.50 $0.60 $0.70 $0.80 $0.90 $1.00

Other amount: (specify)_____

11) Is it important to you to be able to compost take-out containers?

☐Yes ☐No ☐Not concerned

12) How often do you bring your own container to save 25c? (Choose the closest estimate)

| ☐ | ☐ | ☐ | ☐ | ☐ |
|---|---|---|---|---|
| Never | Once a term | Once a month | Once a week | Multiple times per week |

APPENDIX C:

## Specialty Item:
## Spicy Seasonal Stir-fry

Spice it up!!! Try this tasty stir-fry with almonds and tofu that uses local, seasonal and organic ingredients whenever possible.

Price: $$$

### Reduce your ecological footprint!

- Consuming local products can reduce gas mileage and the total distance that foods have to travel to get to your plate
- Vegetables generally require less total energy to produce than meat products do
- Organic farming helps to maintain biodiversity and healthy soil
- Load your compostable or reusable containers for an even more ecologically friendly meal.

### Health Benefits:

- Vegetables contain many vitamins, minerals and phytochemicals that can decrease your risk of cancer and cardiovascular disease
- Almonds contain vitamin E and calcium and contribute to a heart healthy diet
- Tofu is a good alternative source of protein
- Using seasonal produce in a dish provides greater variation in your diet throughout the year

APPENDIX D.

**Survey Results:**

| | Q1 | Q12 |
|---|---|---|
| Never | 30.43 | 68.84 |
| Once a term | 18.84 | 5.07 |
| Once a month | 21.01 | 7.25 |

| | | |
|---|---|---|
| Once a week | 18.12 | 8.70 |
| Multiple times per week | 11.59 | 9.42 |
| Mean response value | 2.62 | 1.83 |

**Table A**. Frequency of eating at The Moon (Q1) & frequency of bringing own container (Q12).

Values represent % of total (n=138)

**Table B**. Familiarity with concept of an ecological footprint.

| | Q2 |
|---|---|
| Yes | 56.52 |
| No | 19.57 |
| Somewhat | 23.91 |

Values represent % of total (n=1380)

**Table C**. Food choices as influenced by environmental impact (Q3), food miles (Q4), organic (Q5) and local produce (Q6).

| | Q3 | Q4 | Q5 | Q6 |
|---|---|---|---|---|
| Never | 4.35 | 16.67 | 13.04 | 15.94 |
| Not often | 26.09 | 26.09 | 32.61 | 25.36 |
| Sometimes | 48.55 | 37.68 | 42.75 | 45.65 |
| Most of the time | 16.67 | 17.39 | 10.87 | 13.04 |
| Always | 4.35 | 2.17 | 0.72 | 0.00 |
| Mean response value | 2.91 | 2.62 | 2.54 | 2.56 |

Values represent % of total (n=138)

**Table D**. Frequency of red meant, poultry and seafood consumption (Q7).

| | Red meat | Poultry | Seafood |
|---|---|---|---|
| Never | 13.77 | 11.59 | 10.14 |
| Once a month | 14.49 | 6.52 | 24.64 |
| Once a week | 40.58 | 35.51 | 48.55 |
| Once a day | 26.81 | 36.96 | 14.49 |
| More than once a day | 4.35 | 9.42 | 2.17 |
| Mean response value | 2.93 | 3.26 | 2.74 |

Values represent % of total (n=138)

**Table E**. Preference of vegetarian options (Q8).

| | Q8 |
|---|---|
| Eggs | 61.59 |
| Beans/legumes | 51.45 |
| Tofu | 59.42 |
| None of the above | 0.00 |
| Other (specify) | 4.35 |

Values represent % of total (n=138)

**Table F**. Importance of composting take-out containers (Q11).

| | Q11 |
|---|---|
| Yes | 74.64 |
| No | 9.42 |
| Not concerned | 15.22 |

Values represent % of total (n=138)

**Table G**. Willingness of choosing (Q9) and paying more for (Q10) environmentally friendly food options.

| | Q9 | Q10 |
|---|---|---|
| Yes | 84.78 | 54.35 |
| No | 14.49 | 45.65 |

Values represent % of total (n=138)

**Table H**. Dollar willing to be paid toward environmental friendly options per item.

| | $0.10 | $0.20 | $0.30 | $0.40 | $0.50 | $0.60 | $0.70 | $0.80 | $0.90 | $1.00 |
|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Frequency | 3.62 | 5.07 | 2.90 | 0.72 | 24.64 | 1.45 | 2.90 | 2.17 | 0.00 | 10.14 |
| Mean response value | 0.21 | | | | | | | | | |

Values represent % of total (n=138)