

**Education Programs in LFS Orchard Garden and Agora Café**

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**April 8, 2011**

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LFS 450 UBC  
FOOD SYSTEM  
PROJECT

April 8

2011

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Scenario 4: Education Programs in LFS  
Orchard Garden and Agora Café

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## Table of Contents

Abstract .....	3
Introduction .....	5
Methodology .....	6
Findings and Outcomes .....	8
Discussion .....	9
Recommendation .....	13
Project Evaluation .....	12
Conclusion .....	14
Appendices	
Appendix A: Workshop and Lesson Plan handout for educators .....	16
Appendix B: “Turning the Earth: A Month-By-Month Guide to Your School Garden” template .....	18
References .....	19

## Abstract

Nowadays, many youth do not have access to gardens at home, nor have they been given the knowledge, skills and motivation to participate in practicing a sustainable food system. In order to increase awareness, garden-based learning has been suggested as an important tool to promote the ecology, economic and social health of a food system. The UBC Food System Project (UBCFSP), the corner stone of Land and Food System 450: Land, Food and Community III, has provided students with an opportunity to participate in improving the current issues associated with the environment through the collaboration of 3 stakeholders from the UBC Faculty of Education and the LFS Orchard Garden (LFSOG). The task of this year's project is to create a set of workshops focusing on outdoor education that will be offered at a week long Summer Institute aiming to educate teachers about garden-based learning. Our workshop focuses on increasing awareness of a sustainable food system and food security using LFS orchard garden located behind MacMillan building as our based model. The lesson plan is created using templates found in "Turning the Earth: A Month-by-Month Guide to Your School Garden", which was published by Vancouver School Board. Each lesson plan includes a background of the project, goals and objectives, preparation and resources, and lastly, the lesson outlines. An example of this lesson plan is listed in the appendix section of this paper. The methods for conducting this project are mostly from literature research and comments given by the stakeholders and teaching assistant, which in turn allows us to modify our original focus in a more holistic way.

## Introduction

The University of British Columbia Food System Project (UBCFSP) has been the major focus for LFS 450 since 2001. The main goals of the UBCFSP is to allow students to apply their academic knowledge to the community by conducting research on food-related issues and developing plans to improve the sustainability of food system in collaboration with multiple partners and collaborators. This year, our project stakeholders have identified the need for recognizing the value of teaching outdoors as an important aspect to a holistic learning experience. School communities are becoming more aware of the issues of students lacking the knowledge and motivation to learn about sustainability; as a result, the concept of incorporating an outdoor learning space to their school grounds has become increasingly crucial. However, teachers are often unfamiliar and untrained to use and develop such spaces (Sobel, 1998). In order to extend the concept of outdoor classrooms and school gardens for environmental education, our team has been assigned to develop a set of workshops for the Think&EatGreen@School project in collaboration with Jay Baker-French, the coordinator of the LFS Orchard Garden (LFSOG) and Julia Ostertag and Chessa Adsit-Morris, the stakeholders of the UBC Faculty of Education. The workshops will be offered to an interdisciplinary group of teachers at a one week long Summer Institute with the intention to integrate food production, food consumption, preparation and procurement as well as environmental and health impacts of the school food system (UBC Food System Project, 2011).

Each year LFS courses re-emphasize the importance of the AAAASS, which stands for affordability, availability, accessibility, appropriateness, safety and sustainability, making up the basic components of a food system. Nowadays, it is common for food to be shipped long distances, burning a lot of fossil fuel as well as increasing greenhouse gas (GHG) emissions (Get

Local, 2011). We can improve, or at the least, raise awareness about these situations through environmental education (ie. teaching students in an environment where they can gain hands-on experience and to connect to their natural resources). Therefore, it can serve as a small scale representation of a global situation. The UBC Farm and the LFS orchard garden not only provide access to seasonal fresh produce but they also offer educational programs and volunteer opportunities focusing on sustainable agriculture (Group 3, 2010). These organizations work as a medium to connect people to the local food system. As David Orr (1991) mentioned in his article, “if education does not teach how to sustain planet of Earth or the importance of ecology, then what is education for?”.

This semester, there were three groups working on this scenario; one group focused on designing and evaluating surveys for teachers to determine what types of workshops they would be interested in, while the other group created a workshop targeting composting and vermaculture. They also created a workshop that focused on outdoor gardening, using garlic as an example of a local product that can be grown easily in a backyard garden. Our group developed a workshop based on the principle of increasing the awareness of moving toward a sustainable food system in addition to the importance of local food production. The following paper will identify the methods we used to develop our project, the relevant findings and outcomes we received from the stakeholders, our teaching assistant and other group members, and a discussion detailing our reflection to literature research and to the stakeholders’ feedback. In addition to this, a project evaluation plan is included and indicates the challenges and achievements of our project. Lastly, we developed a list of recommendations directed to our stakeholders, future LFS 450 students and the LFS teaching team for this particular scenario.

## Methodology

In order to develop a workshop for this project, we went through a number of steps to narrow down our focus for the semester. We began by gaining background knowledge on this scenario through reading previous reports done by LFS students, and getting ideas on how to approach this scenario while also incorporating the learning issues. We also used the paper we read for the literature review and the journal club presentation to get a general idea of the possibilities for workshop ideas. The UBC Cropedia resource was useful for our group in determining the produce that is grown at the UBC Orchard Garden, and from that we were able to use that to get an idea of what types of crops can be grown locally.

There was a lot of discussion among our group about possible areas to focus on for the workshop, and we made sure to consult with the other groups so that overlap wouldn't occur in the workshop topics that we chose. We were originally planning on creating a lesson plan that involved cooking as a method of teaching high school students about the importance of local produce and how to prepare meals that are both nutritious and food secure, and having fun while doing it. As discussion among our group continued, we managed to tweak the workshop to make it more effective, and create a lesson that increased participation and involvement. Collectively, in our break out group, we decided that our scenario would be less complicated if we chose a lesson plan from "Turning the Earth: A Month-by-Month Guide to Your School Garden" and developed ways to stimulate learning amongst high school students enrolled in home economics courses. We brainstormed ideas, and modified the generic lesson plan to better suit our learning goals that were developed to create a guide of what students were expected to learn out of this lesson plan.

In addition to this, we had a meeting with our stakeholders to learn about their backgrounds and the projects they're currently working on, and were given the opportunity to present them with our ideas for the workshop. In turn they provided us with feedback, input and recommendations in regards to what they wanted us to focus on, and what was beneficial to look into. Through this meeting we also learned about "Turing the Earth: A Month-by-Month Guide to Your School Garden", as mentioned previously, which is a Vancouver School Board publication from 2007 outlining lesson plans for various gardening activities. We used this guide to formulate a lesson plan that we thought would be suitable for our focus on nutrition, sustainability and local foods. In using this publication, we would not be required to create a lesson plan from scratch, and would therefore put more emphasis on creating a more engaging lesson and workshop.

Through our many group discussions, we came to the conclusion that our group wanted to focus on nutrition and sustainability in regards to local produce, and set our target group as high school students. We decided to raise awareness about local foods that increase sustainability to these students through the incorporation of nutritional aspects that they may have learned in previous courses.

The workshop that we came up with consisted of a portion dedicated to nutrition that we thought would be applicable to high school students, for example, serving sizes and the varieties of food available to them. For this we proposed to use Canada's Food Guide as a template, giving us useful nutritional information as the basis to what we wanted students to gain from this part of the workshop. The next section of the workshop was designed to increase awareness and interest in local foods. We created two interactive games that can be used to supplement the



learning outcomes, and increase participation as well as involvement. For a more detailed look at our workshop, please see Appendix A.

## **Findings and Outcomes**

After presenting our workshop to the stakeholders, we were able to further narrow down our focus and goals of the workshop to create a lesson plan that better represents the prescribed learning outcomes. Because our workshop touched on many ideas, we were advised to choose a more specific aspect of those topics to give a more in depth look at those particular ideas. It was suggested that we focus on either nutrition or local foods rather than trying to incorporate those two ideas together.

Although the stakeholders never specifically told us that our workshop would be ineffective, they offered many suggestions throughout our presentation that they believed would be interesting topics to study. They commented on local foods, and how we were not specific enough in our focus for that section, so they recommended that we stress that local foods are not always better, and possibly look at the effects and causes of greenhouse gas emissions, as well as the carbon cycle and reducing the carbon footprint. In doing this, it would also be useful to look at “food miles” to see how food gets to where it does, and that would prove that local foods are not always necessarily better, and there are more factors involved in determining food choices than just local versus imported.

Another suggestion for our group was to not focus so much attention on the food guide, as that is simply a model, and may only apply to certain groups of people. It doesn't take into account cultural diversity and religious dietary plans that don't fall into the guidelines of a western food pyramid.

The stakeholders also commented on the hooks we used to get the students interested in our lesson plan, saying that it was a good idea to get objects that the audience can touch or smell. Using our senses is a great aid to lesson plans, as it helps create a better learning experience and increases interest from the students to actively participate in the workshops and lessons. In terms of keeping the attention of the audience, it was recommended that we create a workshop that involves critical thinking to allow them to apply their knowledge and benefit greater from the workshop. The stakeholders also mentioned that they would enjoy learning fundamentals such as being taught how to read labels for food products, and possibly learning about the ingredients that go into the foods we eat.

We took all this feedback into consideration in revising our workshop, basing it on ideas and themes that were presented to us through input from the stakeholders.

## **Discussion**

Conventionally, people only consider a land's production value and spend little or no time thinking about the social and the environmental impact that this land can have on the community. Through the globalization of the food system, distance has grown between producers and consumers and that wealth and power has been consolidated in the hands of a few large corporations. Fortunately, as people are becoming more aware of their roles in a food system, they are more interested in purchasing foods coming from local farmers or community gardens rather than supermarkets, in an attempt to re-localize the food movement. (Belliveau, 2005). Several successful community gardens have developed in the Vancouver areas including the UBC Farm, which also have proved its achievement in bringing social improvements by hosting and providing a vast variety of events and educational programs. Through urban

agriculture, the community will have a better accessibility, affordability, and nutritious foods that improve food security. Besides meeting one's physiological needs, a community garden helps to fulfill other fundamental requirements in terms of psychological and emotional of an individual's well being (Group 16, 2009).

### *Preliminary Research & Journal Club*

With the success of urban agriculture, people have the same optimistic expectations in a school garden setting. Through our preliminary research and the articles that were presented during the journal club, school garden education has been presented as an essential and a critical component that should be included in the curriculum in order to reconnect our next generation with the Mother Nature. Many environmentalists are concerned with the way young people are growing up today because children often substitute their experience in the outdoors and nature with computers, television, video games, and the Internet (Suzuki & Moola, 2010). A way to encourage our future generation to reconnect with and appreciate the natural world is through outdoor education so that they can help protect and ultimately increase the sustainability of the planet. In addition, school gardens have also been suggested as a way to improve a child's academic performance, encourage healthy eating habits and exercise (Ozer, 2009). However since school garden education has not been implemented widely, the supporting evidence is limited. Despite the lack of large data, the current research still provides positive and promising outcomes towards outdoor education. A major challenge is insufficient funding for the outdoor classroom as well as finding experienced garden instructors. That challenge formed the foundation to this project, and our workshop aims to promote teachers' ability in garden education.

## *Stakeholder Feedbacks*

In order to initiate our workshop planning, our group needed a clear and concise learning outcomes expected from our stakeholders and the teaching assistant (TA). Since none of us had the background in teaching and in formulating a lesson plan, it was difficult to start from scratch. The “Turning the Earth” guide (2007) provided a basic outline of how a lesson plan should look, and that gave our group a foundation to work off of.

Initially, we wanted to incorporate both nutrition and local food production into our lesson plan; however, after the stakeholder presentation, we realized that our original focus on these two topics was too superficial.

### *a. Local Food Production*

Instead of just been judgmental and tell the audience that local is good and import is bad, we should consider every aspects of the whole food system. One of the suggestions was to look at the carbon footprint, because sometimes buying local does not mean that the production is sustainable, unsustainable methods such as applying pesticides and chemical fertilizers may still be used on local produce. The process of making pesticides and chemical fertilizers requires a large input of fossil fuels, and that in turn creates large amounts of GHG, a major contributor to air pollution, acid rain and climate change. So, when does eating local enhance our food security? “Local” is often associated with attributes such as quality, freshness, and ecologically sound farming. However, without direct interaction between producers and consumers, there is no guarantee that the food possesses any of these qualities, and may in fact be unsustainable. Face-to-face supply systems add on additional meanings to “local” in a setting such as farmer’s market. Choosing local food in this setting also enhances the community’s economy by helping farmers

to stay in business. It also creates consumers confidence in food safety because consumers will have a better knowledge on who is growing their food and all that goes into growing it (Get Local, 2008).

*b. Lesson Plan*

After listening to other groups' presentation, we felt that our direction in formulating the workshop was too specific and it also created confusion in delivering our ideas to the stakeholders. We were thinking too narrowly and too superficially, so our team felt that the workshop outline should be more generic and be more applicable to any subject in the curriculum than just Home Economics. We wanted to provide a broader range of ideas, so instead of focusing on nutrition and local food production, we decided to focus on sustainability, particular in carbon food print and greenhouse gas emission to encompass the ecology, social and economy aspects of a community.

## **Project Evaluation**

Since we were not given the opportunity to implement the actual workshop for this course, the success of our project was evaluated mainly by presenting our ideas, and designed workshop plans to our stakeholders, teaching assistant as well as the other groups in our breakout room. The feedback is summarized and discussed among our group to identify the successes and challenges of this project. First of all, after meeting with the stakeholders, our group changed the direction of our project to take into account all of the stakeholders' suggestions. For instance, we narrowed down our focus to the topic of sustainability and reconstructed our workshops accordingly. Secondly, we took stakeholders' suggestions to research for more interesting facts

and add them to our lesson plans, so that the people conducting the workshops can attract the audiences' attention in a more creative and engaging way. Thirdly, we came up with various activities that involve participants' use of their sense to smell, touch and taste local produce. However, due to time constraints, we did not have the chance to receive new feedback from our stakeholders regarding the newly designed workshop. Therefore, we recommend for future groups to conduct an informal interview with the stakeholders using qualitative and quantitative measures to assess the success of our project before carrying on. In doing so, they will have a basic idea on what the stakeholders are looking for so that they can create effective workshops rather than starting from scratch. On the other hand, we realized that it would have been easier for us to evaluate our project if we had the chance to actually implement our workshops or at least demonstrate them step-by-step.

## **Recommendation**

### To LFS Teaching Team

Having only three people in a group makes it difficult with the diversity of opinions and ideas. However, our TA made it clear that we were not expected to do as much as other groups, but we still found that it was hard to determine the boundary and the workload was overwhelming especially at the end of the term. Although there were quite a few things we would like to accomplish in the beginning, we realized that it was not easy for a group of three due to the time required to prepare for presentations and the reports. An equal distribution among groups will be more appropriate for a project that requires so much discussion and feedback from group members.

### To Future Groups

There are a few suggestions we would like to direct to future groups doing the Think&EatGreen@School projects . First of all, try to meet with stakeholders as early as possible to assess their needs so that the learning outcomes are as clear as possible. In addition, we recommend that future groups can improve their communication between breakout groups by posting updates once every one to two weeks to ensure that everything is at the right direction. Lastly, in order to carry out the project smoothly, starting research early as well as setting up short term, intermediate, and long term goals are also important.

### To Stakeholders

Our group found that meeting with stakeholders and getting feedback was really helpful to identify our goals and objectives, and to keep us on the right track. Therefore, we recommend arranging more meetings with the stakeholders, if possible. We also appreciated the fact that our stakeholders put so much effort in obtaining funding to keep this project going. This gives our workshops an opportunity to be taken and actually used in a real learning situation. We understand that there are still a lot of ideas our stakeholders want to carry out, but more specific and concise suggestions would be more helpful for us in terms of this project. With time constraints and an abundance of ideas, it would have been more beneficial if the stakeholders assisted us in narrowing down topics rather than giving us more ideas.

### **Conclusion**

The LFS Orchard Garden in the University of British Columbia provides an excellent outdoor learning space where various workshops can be conducted to introduce the concept of sustainability in regards to local food system and food security. In addition, with the success of

the LFSOG, the future and the benefits that school garden education can bring to school systems are very promising. Moreover, we believe that with interaction and fun activities, we can increase teachers and students' interest and enthusiasm toward outdoor education.



## Appendices

Appendix A: Workshop and Lesson Plan Handout for educators

### **Learning Sustainable Food System and Food Security in the LFS Orchard Garden**

#### Background of the LFS Orchard Garden:

LFS Orchard Garden is located in the west side of Macmullian building in the University of British Columbia. It is 600 square meter area where grows vegetables and fruits such as potato, garlic, kale, beets and squash.

#### Goals and Objectives:

Learning sustainable food system and food security in outdoor settings to increase participation and involvement of the audiences

#### Preparation and Resources:

A global map, vegetables and fruits from supermarkets

#### Lesson Plan Outline: (~55 minutes to 1 hour and 20 mminute)

1. Brief introduction of the workshop (~5 minutes)
2. How to start it (~20 minutes)
  - a. A brief discussion about the importance of sustainable Food System. There was two acre of farmland losing every minute for urban development in the United States between 1992 and 1997. That means it involved a lot more transportation now before the vegetable and fruits arrive to your nearby supermarkets. What are the problems associated with it? The increase in air pollution and the decrease in food quality due to the longer transportation time. How can we solve this problem? Promoting school gardens and gardens at your backyards to minimize the transportation. Moreover, supporting local farmers' markets.
  - b. Among pairs: Do you have a garden in your backyard? When is the last time you and your family visit a local farm market?
  - c. Presenting a "food mile" map to help visualized the travelling distance of the common vegetable and fruits they purchase in supermarkets.
  - d. Optional activity (~25 to 50 minutes)
    - i. Sensory test

1. Let the students touch, smell and taste the products straight from the Orchard garden and compare them to the same items obtained from supermarkets.
  - ii. field trip to UBC farm market
- e. (~5 minutes) Wrapping up the workshop by discussing the quality differences between the produces from Orchard garden and the same items from supermarkets; also, they can share their experience of visiting the UBC farm market with their peers. How does UBC farmer's market correspond to the idea of sustainable local food system and food security? What can the students accomplish at home to help?

#### Additional Resources

1. What is local?: <http://www.sustainabletable.org/issues/eatlocal/>
2. What is sustainable food system: <http://www.faqs.org/nutrition/Smi-Z/Sustainable-Food-Systems.html>
3. Orchard garden: <http://www.landfood.ubc.ca/orchard-garden>
4. What is Local food system: <http://www.ers.usda.gov/Publications/ERR97/ERR97.pdf>

## primary activity 3



### plants for eating

what do you see? what do you eat?

In this activity, students will grow edible plants from seeds in the classroom. They will observe the germination of the seeds and eat the sprouts within five or six days.

Children will:

- observe sprouting seeds and eat the sprouts.
- begin to understand the life cycles of plant life.
- see what a seed looks like as it starts to grow.

#### preparation and resources






- small jars, paper plates or other small containers
- paper towels
- package of cress seeds
- 1/2 cup of mung beans (from health food and garden stores)

#### vocabulary



cress, mung, bean, seed, root, stem, leaf

#### how to do it

##### CRESS GARDEN

-  Put wet paper towel on a plate or fold it into a jar. Remember to keep paper towel wet!
-  Sprinkle seeds on wet paper towel.
-  Cover and keep dark until seeds have sprouted about 1 cm (about 3 days).
-  Uncover and place near a sunny window.
-  Cut cress and use in sandwiches or salad when 7-8 cm high. Discuss the taste and texture of the cress (crunchy, fresh, peppery, cold, etc.).

##### BEAN SPROUTS

-  Wash beans and soak in clean water overnight.
-  Drain water and put beans in jar. Punch holes in lid and screw it on. Cover the jar or put it in the dark.

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