



Faculty of Land and Food Systems
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AGSC 450 Group Project: University of British Columbia

***Scenario 4a: Practicing Urban Agriculture Right Here: Integrating the LFS
Garden with the Faculty of Land and Food Systems Community***

Group 16:

**Jessica Mackie
Sarah Makepeace
Connie Ma
Yuting Ma (Vicky)
Angelo Maliksi
Sanna Maladwala
Stella Lukman**

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Abstract

As the world's population continues to grow at its current overwhelming rate, we will ultimately reach a point where our current way of living is no longer sustainable. Already we see tremendous pressure on our essential resources such as air, water, inhabitable land, and our increasingly ever changing global food system. In order to alleviate some of this pressure, urban agriculture has been identified as an important tool to promote and develop ecological, environmental, and food system sustainability. Recognizing the profound positive effects urban agriculture can have on food system sustainability, the Faculty of Land and Food Systems at the University of British Columbia (UBC) has provided its students with a unique opportunity to create their own ideal food system. This opportunity is called the UBC Food Systems Project (UBCFSP) and is the corner stone project of the Agricultural Sciences 450: Land, Food and Community III course. The UBCFSP is a multifaceted community based research project which aims to reduce the ecological footprint of the food system at UBC. One aspect of the UBCFSP is to focus on promoting community gardens on campus, specifically the LFS Orchard Garden located behind MacMillan building. This paper showcases the initial stages of establishing connections for both community involvement and educational opportunities for the garden. Accomplishments in such endeavors include (but are not limited to): the establishment of community ties with the Agricultural Undergrad Society (AgUS), the Intergenerational Landed Learning Project (ILLP), design of informative signage for the garden with an accompanying survey to allow for community input into the signage and a proposal to the AgUS for a Fall Harvest Festival and seasonal community Work Parties. Overall, connections for future development have been established and it is undeniable that continued promotion of the LFS Orchard Garden will contribute to a more sustainable UBC campus.

Introduction

The University of British Columbia Food System Project (UBCFSP) is a collaborative, community based research project which was initiated six years ago as a part of the Agricultural Sciences 450: Land, Food and Community III course (Richer, L.,

Rojas, A. & Project Partners, 2009). Since then new generations of AGSC 450 students have elaborated on the project each academic year and have continued to enhance the work done by their ancestors. The UBCFSP involves several key partners and collaborators on campus including: UBC Food Services, AMS Food and Beverage Department, UBC Waste Management, Center for Sustainable Food Systems at UBC Farm, UBC Campus and Community Planning, Sauder School of Business classes, UBC Sage Bistro, UBC Sustainability Office and its Social, Ecological, Economic, Development Studies (SEEDS) program, and the Faculty of Land and Food Systems (Richer et al., 2009).

Scenario 4a of the UBCFSP involved the integration of the LFS Orchard Garden into the Faculty of Land and Food Systems community, as well as the greater UBC and surrounding communities. There is a lot of work to do in this scenario because the LFS Orchard Garden is still in its developing stages. It was therefore decided that it would be most efficient to break the work down into three primary focus groups, which could then be tackled by three separate AGSC 450 groups. The first group was given the task to develop a production, harvest and distribution plan, as well as identify the various resources needed to maintain the garden, determine the best layout scheme for the garden, and explore waste management possibilities. This group was successful in accomplishing these tasks and was able to produce a binder housing the various production, harvest and distribution plans, as well as management ideas, integrated pest management (IPM) plans, raw data collection, and soil test analyses. They also succeeded in securing a composting system for the garden. The second group was responsible for producing a management plan and a budget for the garden. This group

also laid the groundwork for developing a website that will ultimately contain all of the relevant data for the garden and will be easily accessible to both the general public and the relevant stakeholders. Finally, our group was designated the task of investigating and establishing the ties necessary for future educational opportunities and community involvement with the LFS Orchard Garden. It should also be noted that in addition to these three groups working with the LFS Orchard Garden, there were also several groups of AGSC 450 students who worked on both the design and construction of a fence for the garden. Not only will this fence define the boundaries of the garden, but it will also contribute to a sense of place, ownership and stewardship of the garden.

This paper will detail the work done to establish the connections for educational opportunities and community involvement for the LFS Orchard Garden. We have approached this task by identifying the key communities in which we hope to establish these connections and have determined them to be 1) the Land and Food Systems community 2) the general UBC community and 3) the broader community outside of UBC including neighbouring schools, community centers and any interested citizens. We have laid the groundwork for engaging all three of these communities through various outlets such as informative garden signage, Fall Harvest BBQs, seasonal work parties, agricultural learning programs for various age groups, and outdoor yoga, concert, and artistic events along with many more such opportunities.

The following paper will identify the methods we used to develop our project, the relevant findings we discovered through our research, a discussion detailing our progress and ultimate achievements. Also included are a list of recommendations made to the

Faculty of Land and Food Systems, the AGSC 450 teaching team, the LFS Orchard Garden Coordinator, the AgUS, and finally, to our succeeding AGSC 450 colleagues.

Problem Statement

With the increasing population growth and urban development, mounting pressure is put on the remaining agricultural land to produce more food for even more people. A food system required to produce under such extreme circumstances is not sustainable and ultimately this stressed system may be incapable of producing enough to meet our populations growing needs. Urban agriculture and community gardening has therefore gained popularity in recent years as a far more sustainable production system than the conventional one. The LFS Orchard Garden is one example of the many such gardens that have been established around the world to promote sustainability and community involvement. Developing school and community gardens is a great way to increase the consumption of local food and reduce environmental stresses such as the reliance of fossil fuels for food transportation, water and air pollution, etc. It also reconnects people with their environment by allowing them to grow and eat food produced in their very own backyard gardens or from their community. There is a developing worldwide trend, seen especially in universities and schools, where communities are working together to grow, maintain and harvest food from their own gardens. Such an activity serves to promote community involvement and education and ultimately contributes to a more sustainable food system.

Our task then, is to help promote enthusiasm for community gardening right here at UBC where students can gain priceless experience and from that develop the passion

and awareness required to promote new community gardens within their own respective communities. As a group, we feel that the educational opportunities and community involvement we develop will enhance an individual's awareness of community gardening as a more sustainable production system. It will also create a ripple effect amidst the broader global community as the success of the LFS Orchard Garden can act as an example for other developing community gardens.

Vision Statement

All of our group members agree with, and recognize the importance of the seven guiding principles of the AGSC 450 vision statement (Vision Statement, 2008). The trilogy of the AGSC courses we have partaken in has stressed the importance of supporting the development of sustainable food production systems. We feel that the guiding principles are key to the establishment of a sustainable food system here at UBC. Although we strongly support the promotion of the guiding principles, our group has identified that some of the principles may take a significant amount of time before they can be achieved. For instance, we strongly stand by the notion that foods on campus should be locally grown, produced and processed (principle 1), though we question how this will be feasible given the seasonal conditions in western British Columbia and the large quantities of food that the campus requires. We feel however, that the guiding principles will be very useful in conjunction with the UBCFSP as they will guide future AGSC 450 students to tackle the various food system problems experienced at UBC and hopefully one day provide the solutions we need to be completely sustainable.

Methodology

Our primary objective was to establish connections and build the foundational relationships required to develop educational opportunities and community outreach within the LFS Orchard Garden. We succeeded in doing this by: conducting literature reviews of other successful gardens and various university campus gardens, analyzing AGSC 450 projects from previous years, reviewing the history of the LFS Orchard Garden, contacting relevant community members, visiting established community gardens within our own neighbourhood, collaborating with the other Orchard Garden groups as well as the fence groups, and exploring and developing our own educational and involvement ideas for the garden.

We focused on developing collaborations and linkages with the Intergenerational Landed Learning Project (ILLP) based out of the UBC Farm, the Agricultural Undergrad Society (AgUS), and the Land and Food Systems community (LFS). Fundamental in the development of our project was a conversation we had with Stacy Friedman, the coordinator of the ILLP, regarding possible ideas to engage future ILLP participants in educational opportunities using the LFS Orchard Garden. We also contacted the AgUS president, Kirsten Flood, as a starting point in developing community involvement. We discussed the possibility of an annual Fall Harvest Festival showcasing the LFS Orchard Garden and also talked about the continual collaboration of including the garden produce in their weekly Wednesday Night Barbeques. As for reaching out to the LFS community as well as the general UBC community, we drafted a survey template that can be used by future AGSC students to retrieve opinions about what various community members would like to see on the crop signs in the LFS Orchard Garden (see Appendix E).

In planning to incorporate the ILLP, AgUS and the various other community contacts we connected with, it was important to know what types of produce the LFS Orchard Garden could ultimately produce. We therefore utilized the West Coast Seeds online catalogue, the FNH 341 course manual and past AGSC 450 papers to determine which crops grow best in our climate and soil, and which crops were successful in the past and would likely be available for use by our contacts.

To integrate education opportunities within the LFS community and the broader UBC community, we reviewed previous year's AGSC 450 reports and the UBC academic calendar to determine which courses had the potential of including the garden into their curriculum (see Appendix D) for courses we felt could do this). Realizing the importance of crop signage we have designed a crop sign template (see Appendix C) that can be used to identify the crops grown in the garden. Additionally, we made several updates to an entrance sign template that was designed by previous AGSC 450 students, which we feel will better encourage garden recognition and promote awareness and involvement to all communities.

During the progress of our project, we had to ensure that the fence design ideas would be able to allow for community involvement as well as the facilitation of education opportunities in order for our visions for the garden to become reality. Therefore, several of our group members attended the fence design meetings to see the progression of the other Orchard Garden groups, communicate ideas with the other Orchard Garden groups, and ensure that the fence design would accommodate the activities we had planned for the garden.

Findings

History and Established Connections

We felt it important to familiarize ourselves with the history and development of the LFS Orchard Garden and so we turned to a literature review. We discovered that the Orchard Garden was originally a moderately sized grassland, and at one time was the site of a small orchard on campus. During the winter session of 2007, students of a Landscape Architecture (LARC) class began to design and create a garden plot with the help from Agroecology and Global Resource Systems students (Richer et al., 2008). Lin Steedman, a student from the Faculty of Land and Food Systems, was part of a directed studies project that began the transformation of what was once known as the grasslands, into an edible food garden (2007).

Steedman's directed studies paper outlined the process of constructing the garden plot and supplied much background information about the LFS Orchard Garden (2007). According to the report, the garden covers an area of approximately 70 m² sloping westwards. The soil was reported as sandy and slightly acidic with a pH of 5.8, to which Steedman subsequently added phosphorus and potassium to improve quality (2007). To date, Steedman has planted several fruits and vegetables, such as tomatoes, zucchini, basil, cucumbers, squash, and lettuce, as well as herbs, including sage, oregano, and tarragon (2007).

Due to its proximity to MacMillan Building, the LFS Orchard Garden was deemed as having tremendous educational potentials and outreach opportunities (Steedman, 2007). Prior to the involvement of AGSC 450 students and the UBCFSP,

several relationships had already been established as outreach possibilities. These included the LARC students, UBC plant operations, staff from the Faculty of Land and Food Systems, student groups such as the AMS club “Friends of Farm”, Agora, AgUS, and UBC farm (Steedman, 2007).

Currently, the garden is run by Jian Hui Cheng, a LFS student who took over the position of Orchard Garden Coordinator last June. The garden receives modest funding from the 2008 Grad Class Council, and the UBC farm shares some of its earnings from the market sales with the garden. It should be noted that LFS Orchard Garden will need to find someone to take Jian’s position when he graduates in May 2009.

Production

To determine the seasonal availability of BC produce, our group utilized the West Coast Seeds online catalogue and FNH 341 course manual. These resources helped us to search for the fruits and vegetables that can be grown locally and be in season during the months of September to April, when the demand for produce would be high. Some of the fruits and vegetables that were identified include: apples (from August till April), onions (August till March), lettuce (year-round), potatoes (year-round), leeks (July till March), parsnips (July till March), and cabbage (June till February) (Kasten and Rankin, 2009).

Other University and School Based Gardens

An online literature research was used to learn about other university campus gardens, such as the gardens at the University of Alberta, University of Toronto, University of Ottawa, University of Arizona, and University of Moncton among many others (Richer et al., 2009). We were most impressed with the Garden Project at

Princeton University. The Garden Project was a student-initiated project that aimed to educate the campus about organic food production, sustainable agriculture and its implications for health the environment (Aronson, 2007). The students who coordinated the project believed that their garden could begin conversations on campus about environment and sustainability (Aronson, 2007). Our group felt strongly inspired by the work done here and envision the same type of development for the LFS Orchard Garden.

In addition to reports citing the environmental benefits of community gardens, we also found several studies demonstrating “that gardening serves a wide range of needs and benefits on many levels, including psychological, emotional, social, and spiritual”(Kidd et al., 2002, Abstract, Para. 1). One such study was The California Healthy Cities and Communities (CHCC) initiative, which demonstrated how a community garden program could facilitate knowledge and community improvements (Twiss et al., 2003). These improvements ranged from knowledge and skill enhancement to behavioral and systems change. For instance, the city of West Hollywood “complemented its school gardening program with nutrition and physical activity education” (Twiss et al., 2003, Results & Discussion, Para 1). This resulted in an “increase [in] weekly physical activity sessions from 4.9 to 5.2 times per week [,] and [an] increase [in] consumption of fruits and vegetables from 3.44 to 3.78 servings per day [;] among 338 students participating in gardening and educational workshops” (Twiss et al., 2003, Results & Discussion, Para 1). These results highlight the educational potential of community gardens.

Educational Opportunities and Community Outreach

Within the LFS and UBC Community

We researched the courses that had the potential to integrate the garden into their curriculum by reviewing previous year's reports and the UBC academic calendar. Courses that have the potential to incorporate the LFS Orchard Garden as part of the curriculum are identified in Appendix D. A discussion with our Professor Alejandro Rojas revealed that there are plans to incorporate the LFS Orchard Garden more heavily into the LFS curriculum (Personal Communications, 2009). It was indicated that next years AGSC 250 students will use the LFS Orchard Garden as part of their Community Food Security Assessment Project. This will definitely help in promoting educational opportunities and community involvement between the LFS community and the Orchard Garden.

In addition, we contacted the president of the AgUS Kirsten Flood, who expressed AgUS's continued support for the development of LFS Orchard Garden. It was clarified that the fresh, local and organic produce from the garden will continue to be used in their weekly Wednesday Night Barbeques.

Beyond the UBC Community

Garnering support from the community beyond the UBC campus can better ensure the continuation and further development of the LFS Orchard Garden. In hopes of establishing connections, we researched various secondary schools and educational programs near the Point Grey area that may be interested in being involved with the LFS Garden. One example is Windermere Secondary School which was visited by several of our group members. Although this school already has its own very successful school

garden, we felt that there was much opportunity to learn from their experiences and potentially collaborate with them in the future. The details of the Windermere visit are discussed further in the Discussion section.

Another project that particularly sparked our interest was the ILLP organized by Stacey Friedman. The ILLP is an educational program for children between the ages of eight and ten to learn about farming and food-production with teachers and retired local farmers. The project aims at fostering a holistic experience that allows the children to perform hands-on gardening tasks at the UBC Farm. Such activities strive to inspire children to become more appreciative of the land-food-human connection (ILL, 2007). Since the ILLP shares similar visions with the Faculty of LFS, we felt the staff of this project could become supporters of the LFS Orchard Garden. As members of the Faculty of Education at UBC organize this project, collaboration between it and the LFS Orchard Garden would strengthen the interdisciplinary relationships on campus. Such collaboration would also help the LFS Garden reach the community outside of UBC by promoting the garden to children, teachers, and farmers from the Point Grey area.

Unfortunately during our interview with Stacey Friedman, some challenges to establishing connections and outreach opportunities between the ILLP and the garden were identified. First off, the garden is still in the planning stages and further development needs to be implemented before educational activities can take place. Stacey also pointed out that the funding for any educational program is always a concern. Unless there are volunteer teachers available or people who are willing to pay to learn at the LFS Orchard Garden, it may be difficult to have a concrete educational program in the garden anytime soon.

Miscellaneous Findings

During a discussion with Dr. Andrew Riseman, a stakeholder in the fence building project, we discovered several concerns relating to the design of the signage for the LFS Orchard Garden. Dr. Riseman stated that it was important for the LFS Orchard Garden to have sound infrastructure, including clear signs, a perimeter, pathways, and benches that appear clear, formal and pleasing (Personal Communications, 2009). Dr. Riseman made clear his preference for the signs to look professional and well manufactured and proposed they be made of machine printed aluminum (Personal Communications, 2009)

Finally, we would like to acknowledge that through consultations with our stakeholders it was made clear that an important concern for the LFS Orchard Garden was that the garden not be viewed as a replacement for the UBC Farm. UBC Farm land is already under pressure to be developed into housing, and if the garden is seen as a replacement, the existence of the farm may be in jeopardy. To avoid this, we would like it to be known that it is critical to showcase the LFS Orchard Garden as a small-scale model of the farm, using it to promote the UBC Farm and not to replace it.

Discussion

Many people look at a piece of land and only consider its production value. They spend little or no time thinking about the kind of social impact that piece of land can have on its surrounding community. There are several successful community gardens in Vancouver and around the world, which have demonstrated how the presence of a community garden can bring about incredible social improvements within a community. Community gardens have been known to have a vast variety of functions. Most

commonly, they can be used as a way to improve food security; since urban agriculture is a sustainable source of accessible, affordable, and nutritious foods. However, it is important to recognize that a community garden is much more than a way to meet ones physiological needs. A community garden helps fulfill other fundamental needs that ensure an individual's social, psychological, and emotional well being. Through our involvement in the UBCFSP we intend to promote educational and community outreach potentials for the LFS Orchard garden, which will address the fundamental needs of the LFS, UBC, and neighboring communities.

Preliminary Research

Identification of UBCFSP Project Objectives and Expectations

In order to initiate our preliminary research, our group needed a clear and concise understanding of the project's expectations and primary objectives from our course instructor and teaching assistant (TA). Judging from past experiences with group projects in other LFS courses, the group expected the teaching staff to provide a framework for our project scenario that would result in a concrete and visible outcome, such as an education program, by the end of our project. However, this was an impractical expectation made by our group that hindered our progress. This misunderstanding could have been avoided if the project's expectations were explained to our group in a consistent manner. The group found it difficult to identify the project expectations since we were initially given conflicting instructions from our instructor, than our TA. Our instructor suggested we approach our project as a guide to creating community gardens. On the other hand, our TA informed us that this approach was incorrect, and that we should be seeking inspiration from the ILLP at the UBC farm. After considering these

suggestions of our teaching staff, our group decided to continue with the direction given by our TA.

Intergenerational Landed Learning Project (ILLP)

Our group was impressed by the history and effectiveness of the ILLP, and decided to follow its format in designing an educational program for elementary schools neighboring the UBC campus. In order to obtain a better understanding of the ILLP and its challenges, Stacy Freidman, the ILLP project coordinator was contacted and interviewed. Soon after establishing that contact, the group realized that it was very ambitious of us to try and set up an education program, when the garden itself has not been completely developed. Realizing our haste in the matter, and acknowledging the fact that we were unclear about how to progress with our project, we met with our TA to resolve our uncertainties about the project. After doing so, the group finalized a plan of action for the project, through a brain storming session. This plan is summarized in Appendix A. The plan takes into account the recommendations made by previous AGSC 450 groups in the LFS Orchard garden scenario.

Educational Opportunities

LFS and UBC community

Several universities around the world have used community gardens to esthetically enhance their campus, while providing functional green-spaces to their students. Numerous local schools have done the same. Windermere High School is one such example. During our preliminary research, a few members of our group paid a visit to the school in hopes of attending a workshop aimed at creating school community

gardens. Unfortunately, this event was cancelled by the organizers. However, an interview of the student leadership class revealed the student's enthusiasm, knowledge, and sense of pride towards their garden. As the students talked to us about their garden's crop cycle, composting plan, and shared their hopes of starting a greenhouse, we quickly realized that these students were ahead of the learning curve compared to other children their age. They were acquiring knowledge that we, as LFS students, didn't have until university. Sadly most university students from other faculties are not given the same opportunity to learn about food systems as LFS students. However, the LFS Orchard garden can play a part in the education of fellow UBC students. Several courses offered at UBC would benefit from practical integration of indoor and outdoor classroom sessions that provide an opportunity for hands on learning. As mentioned, these courses have been identified in Appendix D.

Broader Neighboring communities

A garden can be the site of important discoveries for young and old alike. Take the example of Gregor Mendel (the father of genetics), and his pea plants. Through gardening in the common monastery garden, Mendel discovered the laws of genetic inheritance (Griffiths et al., 2004). As noted in an interview with Stacy Friedman, hands-on outdoor learning can be enjoyable and it promotes enthusiasm for learning about nature in young children (2009). During the interview, Stacy mentioned that she constantly receives requests from elementary schools to participate in the ILLP (2009). This is an encouraging indicator that the LFS Orchard garden will be accepted as a possible outdoor classroom for neighboring elementary schools. Although the ILLP allows school children to work in soil beds at the farm, having children do extensive

gardening in the Orchard garden during their short visits is not feasible. Giving the children little planters to take home may be a better alternative because this will increase their learning experience as they can teach others about it. In addition to the planters, the children can participate in activities that help them learn about growing seasons, garden history, nutritional value of the crop etc.

In addition to using the garden for educational purposes during site visits, a LFS Orchard Garden website can expand the garden's network to a wider Vancouver community via the internet. The website, which was developed by one of the other Orchard Garden groups, could be helpful in bringing us closer to our project goals. The group has agreed to feature a webpage that contains information about the history of the garden and a current events webpage for upcoming community events. The website therefore provides an additional venue to promote the garden and vision statement to the wider community.

Community Outreach

Community outreach will be addressed with a number of unique activities that will see the LFS, UBC, and broader neighboring communities come together to form a unified Orchard Garden community.

LFS Orchard garden signs

One of the recommendations made repeatedly by previous AGSC 450 groups was to have clear and visible signs identifying the garden, its vision statement, and the crops grown. In addition to these requirements, the LFS Orchard Garden signs should also inform its visitors about the garden's history, contributors (AGSC students, volunteers,

etc.), and the purpose of the garden. These signs are significant in building a sense of stewardship towards the garden for its stakeholders and the Orchard garden community.

Recognizing the significance of appropriate signage, our group designed a ‘crop sign information survey’ (Appendix E). This survey can be used by the next years AGSC 450 students working on the garden scenario to conduct a needs analysis for appropriate garden and crop signs. The survey will provide input from various communities, which is crucial in assessing their interest and expectations for the garden. Since the garden will mostly be used by the LFS and UBC communities, it is important to design signs that are compliant with their needs.

Using a previous AGSC 450 group’s design as a template, an updated version of the main Orchard Garden sign was created (Appendix B). In addition to this sign, a template for individual crop signs was also planned (Appendix C). Consequently, this template can only be finalized once the crop sign information survey is completed. Our group originally contemplated the idea of having visiting school children from the ILLP decorate the crop signs. We felt that this could engage the children in an enjoyable, yet informative way, and provide them with the chance to learn about growing seasons in a social and hospitable environment. However, once we shared this idea with one of the garden’s stakeholders, Dr. Andrew Riseman, we were reminded that the garden’s signs need to appear professional, in order to be taken seriously. Dr. Riseman therefore suggested using machine printed aluminum signs that were legible and cost effective (Personal Communications, 2009).

Harvest BBQs and Work Parties

Many cultures around the world celebrate the beginning of the harvest season. It is a joyous occasion where farmers can enjoy the fruits of their labor (Wikipedia, 2009). A similar atmosphere can be brought into the LFS Orchard garden through a Fall Harvest Festival, organized in collaboration with the AgUS. The AgUS holds a weekly Wednesday night BBQ that is mostly attended by LFS students, faculty, and some Forestry students. Unfortunately, the Wednesday night BBQs are not advertised to the whole UBC community. The AgUS does feature a few products from the garden in their BBQ's, but it does not happen very frequently (Sarah Makepeace, Personal Communications, 2009). Therefore, in order to raise awareness about the garden, and increase the diversity of students attending the BBQs, it is important to find a unique hook to draw people in. A Fall Harvest Festival, similar to the already popular Wednesday Night BBQs, held at the beginning of the school year is a great way to welcome back old students, and attract new ones. Holding a Fall Harvest Festival would be a great way to build a culture that stems from the garden. During the Fall Harvest Festival, the garden can be highlighted with some inexpensive lighting (such as Christmas lights) and through the use of 'Garden games'. We envision Garden games as trivia style games that test the participants' Orchard garden knowledge. The questions can include a variety of topics such as history of the garden, the garden's crop cycle, the nutritional value of the crop, etc. The aim is to make the activities enjoyable, and the food affordable so that the guests appreciate the value of the garden. The Harvest BBQs can be advertised through the garden's website (developed by one of the other Orchard Garden groups), and through flyers around campus.

Although the Fall Harvest Festival is an exciting idea to raise awareness about the garden, finding volunteers to maintain the garden is a challenge. Stacy Freidman of the ILLP shared our concern in finding volunteers that are capable and available to work in maintaining the garden year round. During our interview, Stacy mentioned that funding and long-term volunteer recruitment were the biggest challenges for the ILLP (2009). However, we suggest that this challenge can be simplified with the introduction of ‘Work Parties.’ We envision Work Parties as social gatherings for individuals who enjoy gardening. During the parties, the guest can help to maintain the garden, while enjoying some refreshments and the company of friends. The frequency of the parties can depend on the amount of work that would need to be completed.

Besides the activities and events discussed above, the LFS Orchard garden has tremendous potential to be used by other organizations on campus. Once the garden is well established, the garden and its surrounding area can be used by groups such as the AMS mini-school (for gardening workshops), UBC Rec (for outdoor yoga or tai chi classes), the UBC music department (for rehearsals), the UBC Art department (for outdoor painting classes), and many more. Through its diverse functionality, the LFS Orchard garden will certainly be recognized as a UBC landmark in the years to come.

Recommendations

Recommendations to the Faculty of Land and Food Systems

Previous AGSC 450 students have recognized the possibility of using the garden as an educational tool for many courses in UBC including those offered by the Faculty of Land and Food Systems and other faculties (see Appendix D) (AGSC 450 Group 17, 2008). We recommend that these opportunities be further developed and that the garden

be used for things such as direct studies research projects and hands on learning opportunities in Agricultural Science (AGSC), Agroecology (AGRO), Food, Nutrition and Health (FNH), Soil Science (SOIL), and Food Resource Economics (FRE) courses. Once this has been proven successful, we envision collaborative studies being possible with students in other faculties such as Education, Engineering, Arts, Biology, Forestry, and Environmental Studies and we recommend that these opportunities be further developed.

Recommendations to the AGSC Courses Teaching Team

We recommend that the AGSC 450 teaching team continue to include the LFS Orchard Garden as part of the UBCFSP. This way, future students can continue to improve upon the work done by our group and the groups before us, especially in terms of education and community outreach. We also recommend that the teaching teams of AGSC 100, 250, and 350 include the garden to their course programs either as an option for volunteer opportunities, as a part of the course as a problem scenario, or both. Not only will it promote education in the garden, it will also provide the garden with volunteers for its management and maintenance in the future.

Recommendations to the LFS Orchard Garden Coordinators

Once a new LFS Orchard Garden coordinator has been appointed we recommend that they work to obtain additional financing for the garden, continue with garden maintenance, and develop and coordinate a volunteer program.

Recommendations to the Agricultural Science Undergraduate Society (AgUS)

We recommend continued collaboration between the LFS Orchard Garden and the AgUS with events such as the Wednesday Night BBQs, an annual Fall Harvest Festival, and garden Work Parties to help maintain and promote the garden. These events will help promote community involvement and education by allowing students, faculty members and community stakeholders to meet and discuss educational opportunities and issues related to the garden. AgUS might also consider using the garden as a venue for Imagine UBC to welcome first year LFS students to the faculty.

Recommendations for Future AGSC 450 Students

Our group strongly believes that the continued success of this project depends on the strength of future AGSC 450 students to keep an open mind and be proactive. We encourage future students to continue on with the developments already established in the garden and to improve upon our accomplishments to ensure that our ideas are feasible and current. We recommend that future AGSC 450 students explore more ways to use the garden for education opportunities and community involvement. Students could approach the AMS Mini School to see if they could use the LFS Orchard Garden as a site for a “garden workshop” where the basics of gardening and composting could be taught. Students could also examine the possibility of starting an Orchard Garden Club within the AMS Student Clubs program where students can sign up to help in the management and education in the garden.

Our group feels strongly that clear signage for the LFS Orchard garden will go a long way in developing its potential as a site for education opportunities and community involvement. We strongly recommend that a large LFS Orchard Garden sign stating the name, overall vision of the garden, and contributors to the garden be produced. We have

already enhanced and finalized an entrance sign template (see Appendix B) and all it needs now is someone to simply construct it.

Similarly, we have developed individual crop sign templates that can be constructed by the future AGSC students to identify each plant in the garden (see Appendix C). We have also produced a survey (see Appendix E), which can be used to obtain community input regarding what information should be listed on the crop signs.

We think it is important that future students stay in contact with Jian's replacement in order to finalize some of our ideas, such as the entrance sign and the crop signs, and the harvest schedule which will be vital in incorporating garden produce into AgUS BBQs, and our planned Fall Harvest Festival.

We think that next years students should try to make contact with AGORA, a volunteer student run Café in the basement of Macmillan building. Our group tried to make contact with them but we were not successful. Agora is already involved with the LFS Orchard Garden and it would be good to discuss more with them about their involvement and how they can help with the garden activities that AgUS is going to help out with.

We suggest that future students look into using the garden to educate grade school children about gardening and stewardship of the land much like what is currently being done in the ILLP. Students could also approach other faculties to investigate the potential for the garden in becoming a venue for other relevant educational and recreational experiences such as yoga, Tai Chi, photography, painting, ballroom dancing, and other activities (Friedman, 2009).

Finally, future students should help maintain and update the LFS Orchard Garden website once it is up and running. This will help to keep current students, alumni, stakeholders and interested communities connected and up-to-date with the latest events and educational opportunities happening in the garden as well as to allow the exchange of ideas efficiently.

Conclusion

The importance of supporting alternative ways of food production cannot be stressed enough. That is why development of the LFS Orchard Garden as a successful on-campus community garden is such a vital component of the UBCFSP. The LFS Orchard Garden is full of potential, not only for sustainable food production and environmentally sensitive agricultural practices, but also for the development of an educational epicenter. Here people can learn about food and gardening and more importantly about stewardship, community involvement and the significance of environmental sustainability. Through our involvement with the LFS Orchard Garden and the UBCFSP, we feel confident that we have laid the essential foundation to eventually reach this goal.

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Appendices

Appendix A: Plan of Action

EDUCATIONAL OPPORTUNITIES:

LFS	UBC	BROADER
<ul style="list-style-type: none"> - Courses offered in programs such as soil science, AGRO, and wine science can use the garden for instructional purposes. - AGSC 100 and trilogy can provide educational and volunteer opportunities to students. - Website will be a medium for education and promotion of events related to the garden. - Make use of the garden as a classroom/breakout room for AGSC or any other LFS courses that has gardening (scenarios involving community gardens and garden productivity) and production aspect to it. - Potential of the garden to be used for student research. - Use garden as a place of collaboration between faculties (education, engineering, LFS). 	<ul style="list-style-type: none"> - Know the history of the garden/space as a tool to educate UBC students and faculties about the beginnings of the project. History will serve as a starting point for the future of the garden and its development. - History can be part of the signage discussed below. - Signage a valuable tool to inform UBC students about the project and its objective. Not only gives the project a name but also identify those who participated and contributed to the project (make UBC people know that this is a student driven project!) as well as give LFS faculty a sense of ownership/achievement over the garden. - Explore the potential link between AMS mini-school (gardening) and the orchard garden. - Orchard Garden club - will be a source of enthusiastic volunteer that will take care of the garden as well as education. * meet up with club society (SACE) to 	<ul style="list-style-type: none"> - History - Website - Signage - Act as outdoor classroom for students in neighboring elementary schools; provide connections between what they eat and how foods are grown. Act as a place for kids to EXPERIENCE growing foods and waste management. This enables them to learn and be attached (rather than detached) to the food they eat at a very young age. - Serves as a tool to instill to the children the values of stewardship of the land and sustainability even at an early stage. <p>Stacy's input:</p> <ul style="list-style-type: none"> - Use orchard garden as a place of learning new things other than growing food and sustainability, i.e. a place where people can gather and learn Tai chi,

	<p>discuss possibility of this club in the future.</p> <ul style="list-style-type: none"> - Survey people about the garden. - Website will be a medium for education and promotion of events related to the garden. 	<p>Yoga, Arts and for all other educational purposes. In essence, the garden becomes a place of new and open learning.</p>
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OUTREACH: (Not categorized in any community)

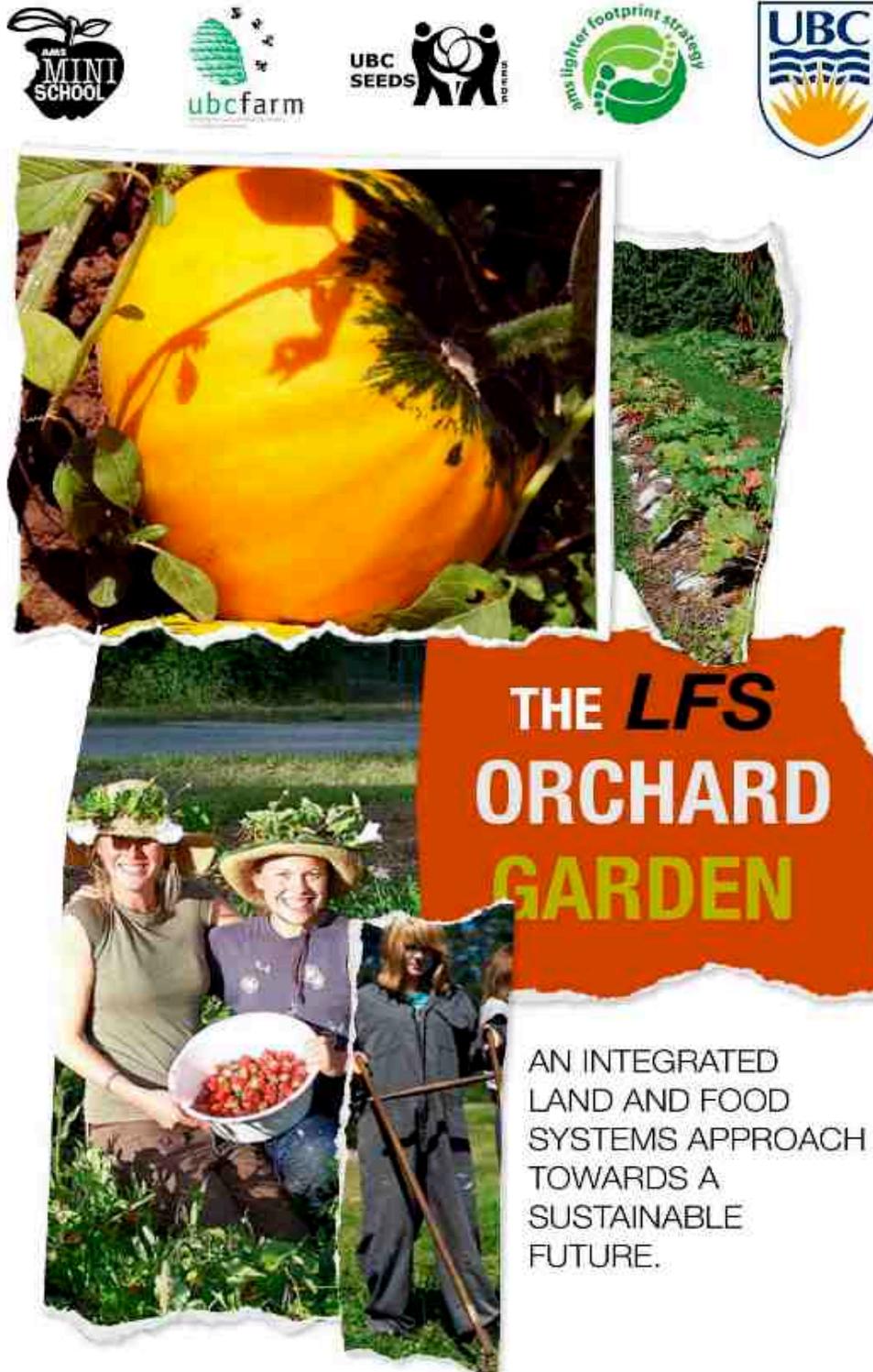
- Old pictures of garden/space can be used to tell the story behind the beginnings of the gardens.

- Work parties and Harvest Festivals. Wednesday night BBQ be held in the garden (organized through the AGUS).

- Survey will be a tool to gather suggestions and recommendations about almost anything about the garden as well as a excellent tool to promote the garden.

- Garden games for visiting students, gardening workshops, Orchard garden club meeting (potentially).

Appendix B: Proposed LFS Orchard Garden Sign



PART OF THE AGSC 450 UBC FOOD SYSTEM PROJECT.

 Faculty of Land and Food Systems
Grounded in Science | Global in Scope

Appendix C: The Proposed Crop Sign Template

The LFS Orchard Garden			
<h1 style="margin: 0;">Cherry Tomatoes</h1>			
Plot # here.	Scientific Name Here.		
<p>Optimal Growing Conditions:</p> <p>List all optimal growing conditions here like...</p> <p>Season:</p> <p>Temperature:</p> <p>Sunlight:</p> <p>Fertilizer:</p> <p>Planting Orientation:</p> <p>Water needs:</p> <p>Others:</p>	<p>List of ways to enjoy cherry tomatoes:</p> <ul style="list-style-type: none"> - Add to salads - Add to omelets - Add to pasta sauces - More - More - More - More 		
	<table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top;"> <p>Nutritional Content:</p> <ul style="list-style-type: none"> - CHO : - FAT : - PRO : - Vitamins : - Minerals : </td> <td style="vertical-align: top;"> <p>Nutritional Benefits:</p> <ul style="list-style-type: none"> - List them here - More - More - More </td> </tr> </table>	<p>Nutritional Content:</p> <ul style="list-style-type: none"> - CHO : - FAT : - PRO : - Vitamins : - Minerals : 	<p>Nutritional Benefits:</p> <ul style="list-style-type: none"> - List them here - More - More - More
<p>Nutritional Content:</p> <ul style="list-style-type: none"> - CHO : - FAT : - PRO : - Vitamins : - Minerals : 	<p>Nutritional Benefits:</p> <ul style="list-style-type: none"> - List them here - More - More - More 		

Appendix D: Possible UBC courses that can use the LFS Orchard Garden for educational purposes (AGSC 450 Group 17, 2008).

FACULTY	COURSE	COURSE TITLE
LFS	AGSC 100	INTRODUCTION TO LAND, FOOD AND COMMUNITY
	AGSC 250	LAND, FOOD AND COMMUNITY I
	AGSC 350	LAND, FOOD AND COMMUNITY II
	AGSC 450	LAND, FOOD AND COMMUNITY III
	AGSC 490	TOPICS IN AGRICULTURAL SCIENCES
	AGRO 322	HORTICULTURAL TECHNIQUES
	AGRO 324	PLANT PHYSIOLOGY I
	AGRO 326	INTRODUCTORY PLANT PATHOLOGY
	AGRO 328	WEED SCIENCE
	AGRO 340	SOIL CHEMISTRY AND ENVIRONMENTAL QUALITY
	AGRO 341	SOIL PHYSICAL PROPERTIES AND BEHAVIOUR
	AGRO 342	SOIL BIOLOGY
	AGRO 361	KEY INDICATORS OF AGROECOSYSTEM SUSTAINABILITY
	AGRO 401	SOIL PROCESSES
	AGRO 402	SUSTAINABLE SOIL MANAGEMENT
	AGRO 403	FIELD AND LABORATORY METHODS IN SOIL SCIENCE
	AGRO 421	INTEGRATED CROP MANAGEMENT
	AGRO 423	ECOPHYSIOLOGY AND HORTICULTURE
	AGRO 440	PEDOLOGY
	AGRO 497	DIRECTED STUDIES
	FRE 302	SMALL BUSINESS MANAGEMENT IN AGRI-FOOD INDUSTRIES
	SOIL 200	INTRODUCTION TO SOIL SCIENCE
	SOIL 501	SOIL PROCESSES
SOIL 502	ADVANCED SUSTAINABLE SOIL MANAGEMENT	
SOIL 503	ADVANCED FIELD AND LABORATORY METHODS IN SOIL SCIENCE	
SCIENCE	BIOL 140/141	LABORATORY INVESTIGATIONS IN LIFE SCIENCE

FACULTY	COURSE	COURSE TITLE
	BIOL 209	NON-VASCULAR PLANTS
	BIOL 210	VASCULAR PLANTS
	BIOL 317	WEED SCIENCE
	BIOL 324	INTRODUCTION TO SEED PLANT TAXONOMY
	BIOL 343	PLANTS AND PEOPLE
	BIOL 351	PLANT PHYSIOLOGY I
	BIOL 407	PLANT ECOLOGY II
	BIOL 433	PLANT GENETICS
	BIOL 443	PLANT BREEDING AND BIOTECHNOLOGY
ARTS	GEOG 204	FOREST AND AGRICULTURAL CLIMATOLOGY
	GEOG 309	PHYSICAL GEOGRAPHY FIELD COURSE
	GEOG 350	INTRODUCTION TO URBAN GEOGRAPHY
FORESTRY	FRST 311	PLANT PHYSIOLOGY I
	FRST 310	SOIL BIOLOGY
POSSIBLE UBC COURSES THAT CAN USE THE LFS ORCHARD GARDEN FOR EDUCATIONAL PURPOSES		

Appendix E: Crop Sign Information Survey

AGSC 450 UBC Food System Project: LFS Orchard Garden

January - April 2010

THE LFS ORCHARD GARDEN CROP SIGNAGE SURVEY

We would like to know your opinion regarding the crop signage for the LFS Orchard Garden. We appreciate your patience and time in answering this survey.

1. How do you feel about having a community garden on campus?

- Positive
- Negative
- Uncertain

2. Are you aware of the LFS Orchard Garden at UBC?

- Yes
- No

3. Do you think the garden should have crop signs constructed to identify plants in every plot?

- Yes
- No
- Uncertain

4. What kind of information would you like to see on the sign? (check all that apply)

- Name/type of crop
- Picture of crop
- Seed variety and quality
- Fertilizer needs
- Watering needs
- Sunlight
- Seasonality
- Specialized care
- Nutritional Value
- Cooking Tips
- Other(s): Specify: _____

5. Who do you think will benefit from having signs constructed for the garden? (check all that apply)

- LFS students and faculty
- UBC community
- General/Visiting public
- No one
- Uncertain

Group # goes here.

Thank you very much and have a nice day.