UBC Social, Ecological Economic Development Studies (SEEDS) Student Reports

Cropedia: Creation of a Web-Based Crop Encyclopedia

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Scenario 6: Cropedia
Creation of a Web-Based Crop Encyclopedia

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Abstract

As members of the Faculty of Land and Food Systems, we have made it our mission to promote sustainable food systems not only to our community, but communities worldwide. UBC is home to many organizations that are compassionate about the same issues as we are, but often these organizations do not communicate. The goal of this project was to increase communication amongst the organizations within the UBC community, most notably food growers such as the UBC Farm/LFS Orchard Garden and food providers such as Agora, Sprouts, and the AMS Food and Beverage Department. Our goal was also to provide information about the crops grown at the farm and LFSOG to consumers. By creating a web-based encyclopedia of crops grown, we are able to showcase the crops grown at the farm and the garden not only to the UBC food providers but also consumers. We found a wealth of information that we feel will be helpful to both the UBC food providers and consumers and we hope that this information will inspire the community as a whole to make more informed food choices. While the project provides information in a user-friendly format, there is room for improvement and additional marketing is needed to ensure the success of the project.

Introduction

"In 1997, UBC became Canada's first university to adopt a sustainable development policy… and has since made significant progress in reducing its environmental impact. In 2003, UBC became Canada's first and only university to receive Green Campus Recognition from the US-based National Wildlife Federation. In 2004, UBC demonstrated leadership by purchasing enough Green Power Certificates from BC Hydro to power UBC's world renowned green buildings."

UBC Annual Report, 2004-2005

Evidently, UBC has proven itself as an innovative University of its time, setting and breaking its own successes. As students of the LFS 450 class of 2010, we have been given the opportunity to partake in this movement with the specific goal of looking at the UBC food system as a whole, from the UBC farm, LFS Orchard Garden (LFSOG) to UBC Food Services, Agora and AgUS. Our goal this semester was to create the LFS Cropedia, an online UBC Urban Agriculture Educational Resource for 44 of the crops grown at UBC. In the future, we aim to see this resource as a mediator by being accessible to all UBC students, faculty members, staff, organizations, managements and to the surrounding community. The Cropedia will aid in mediating the subjects listed above, between the inputs: landbase, water, crops, means of transportation, oil and the outputs: food, waste, compost, and pollution. UBC Farm does provide food to the UBC campus community through various food venders yet the venders themselves as well as the consumers tend to lack the knowledge and appreciation for where their food is coming from, which is where the importance of this project comes into play. We will look at the Problem at hand in respect to this scenario, and follow by looking at our Vision Statement, Methodology, Findings, Discussions, including the importance of the scenario, appropriateness of methodology, successes, shortcomings/limitations, and group dynamics, followed by our Recommendations, directed towards Cropedia specific and course specific goals.

Problem

The UBC community has identified the need to re-establish the relationship between soil and food in order to empower individuals to get more involved with their food choices. The LFS community has long felt the need for people to become aware that their food choices directly affect the planet's current situation and therefore the community feels it is necessary to inform people about local food choices. Currently there is no easily accessible, user friendly-interface

that informs consumers about growing conditions, varieties, and usage of crops grown locally at the UBC Farm and the LFSOG.

Cropedia was created by LFS 450 students to address this issue of the need for a quick, easily accessible source of information for volunteers and consumers to educate about UBC/LFSOG crops. It is an accessible, up-to-date, user-friendly website that serves as a means of communication which bridges the gap of information between the UBC Farm/LFSOG and the campus community including Agora, Sprouts, AMS Food and Beverage, UBC Food Services and individual members of the community interested in local food production.

Vision Statement

As a result of previous' years experience with the UBC Food Security Project (UBCFSP), stakeholders and the LFS 450 teaching team developed a vision statement which promotes the development of a sustainable food system:

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

Each project addresses one or more points in the vision statement. Our scenario directly addresses the fourth principle as Cropedia serves as a communication tool between stakeholders, faculty, students, and prospective members of the community. Cropedia users will in turn

become more aware of cultivation, growing conditions, varieties, nutritional value, and delicious ways to prepare forty-four different crops which ultimately become used at food establishments on campus. Apart from addressing the 4th principle, the scenario also touches on the first, fifth and sixth principles. Cropedia provides a resource to showcase foods that are grown locally on campus. It brings people together and enhances community through celebration of food in scrumptious ways in the hope of helping to inspire consumers to connect with the LFSOG and UBC Farm; and indirectly introducing the UBC community and others to socially, ecologically conscious producers who, for example, have gone out of their way to preserve the UBC farm t**o** grow a wide selection of crops for community consumption and for on-site experiential learning.

Methodology

The crops on the Cropedia website came from the seed logs provided by the UBC Farm and the LFSOG. The seed logs contained far too many crops for the project to handle so the list was narrowed down to forty-four crops. Crops were selected based on their economic contribution to the UBC Farm/LFSOG or their academic connections to the University. These forty-four crops were divided evenly amongst the four groups (eleven per group) in the scenario. Each group researched information on their eleven crops, but came to a consensus as to what format and structure each page will follow (e.g. nutritional information for each crop came from the Canadian Nutrient File (CNF) and presented as a nutrient facts table that follows federal labelling regulations from Health Canada's website). Duncan McHugh, the LFS faculty's multimedia developer, provided technological support on how to build the Wikipedia-like pages and insert our nutrient facts tables made from Microsoft Excel as images as well as how to find non-copyrighted images of our crops.

Several resources were used for researching information of each crop. We had face-to-face meetings with Jay Baker-French (LFSOG) and Amy Frye (UBC Farm) to find out how long the crops have been grown at their respective sites as well as any academic affiliations that the crops have on campus (e.g. any research by faculty members). The seed logs were also used to find out the species of each crop. Library books on garden crops and the CNF from the Health Canada website were used to find the seasonality, nutritional information, growing conditions and other common uses for each crop. Recipes for the crops were provided by group members and Laura Hsu, the Agora manager.

Findings

The actual production of Cropedia pages was easier than originally anticipated. Initially, we thought we had to learn to make pages from scratch by learning the computer language for the Wikipedia software. Luckily, Duncan constructed a sample page for reference and provided a template for which each page had to follow. This resulted in making only minor modifications (such as copying and pasting information) to a copied version of the template to create our pages.

As a group, we researched eleven crops grown at wither the UBC Farm or the LFSOG, or both. Each crop was unique and presented its own set of challenges:

Basil

This herb is also commonly known as: St. Joseph Wort or Sweet basil and comes from the family: Lamiaceae. Basil can be seed grown and either sewn directly into pots or plug trays, early in spring in order to germinate with warmth. It is easy for basil to be over watered and die as a result of doing so, therefore it is important to not over water and to water in the early afternoon and never in the evening for that will not allow enough time for the soil to dry. Some options for storing basil is either freezing or drying if one is not needing it for immediate use.

The ideal growing spot for basil is in a windowsill, which can double up as a wonderful way to bring your garden into your home. There were no problems gathering information on this crop because basil is a very commonly used herb.

Link: http://cropedia.landfood.ubc.ca/wiki/Basil

Bush Beans

Bush beans are also known as string or green beans. Finding specific information about bush beans can be extremely challenging as these beans are always generalized with other bean varieties. Apparently, bush beans grow faster than pole beans and often produce all at once. They don't need a support to grow on unlike pole beans and they can be harvested earlier than pole beans.

Link: http://cropedia.landfood.ubc.ca/wiki/String_Beans

Garlic

Finding information on garlic was hassle-free. There were books in their entirety on garlic. Garlic, *Allium sativum* L., is commonly used in cooking and has received much attention for its health benefits including heart health and its antibacterial and antioxidant effects. Garlic is hardy but does best in warm, sunny, well-fertilized open ground.

Link: http://cropedia.landfood.ubc.ca/wiki/Garlic

Oregano

Oregano generally grows as a hardy perennial herb. There are only a few among the several oregano species that can be grown from seeds while the other species can only be propagated by cuttings or division. Oregano is an excellent source of Vitamin K, antioxidants as well as Manganese, Iron and fibre. In addition, oregano leaves are used as medicinal herbs or tea for

headaches, pain relief, and colds. This plant is very popular and considered one of the best antiseptics due to its effectiveness.

Link: http://cropedia.landfood.ubc.ca/wiki/Oregano

Pole Beans

It was difficult to find crop specific information. Pole beans share similar growing conditions as other string beans. Information was limited to basic soil requirements and the different methodologies used in supporting pole bean climbing – wire trellis, fence, bark, and stubs.

Link: http://cropedia.landfood.ubc.ca/wiki/String_Beans

Potatoes

The amount of information available on potatoes was expansive and it was quite difficult to narrow down and present it in a user-friendly format. It was important to include not only a large section on the growing conditions due to the unique challenges with potatoes, but it was also important to have a larger culinary section as potatoes are so versatile. Potatoes contain a surprising amount of potassium, almost as much as a banana. It is important not to eat green potatoes as they contain the toxic compound Solanine.

Link: http://cropedia.landfood.ubc.ca/wiki/Potatoes

Radishes

The amount of information available on radishes was limited. Radishes are one of the easiest and quickest growing garden vegetables. Radishes contain vitamin C and very little calories. It was difficult to include a recipe for radishes as they are mostly used as a salad vegetable.

Link: http://cropedia.landfood.ubc.ca/wiki/Radishes

Rhubarb

Rhubarb is a perennial crop ideal for cool temperate zones. It is relatively low in calories with considerable amount of Calcium and Vitamin C. The leaves of rhubarb itself are extremely poisonous so they should be removed prior to cooking. Rhubarb can also act as a potent laxative and can eliminate chest pains and ringworms. There are so many interesting rhubarb recipes on the internet because rhubarb is a very common ingredient for dessert dishes such as tarts, pies and strudels.

Link: http://cropedia.landfood.ubc.ca/wiki/Rhubarb

Rosemary

Although there was relatively less information available on rosemary as compared to garlic, crop specific information from books on culinary herbs was quite comprehensive. *Rosmarinus officinalis* come in different varieties. It is an evergreen perennial shrub that prefers light and well-drained, relatively dry soil with lime. In cold areas, it is best to grow rosemary against a south-or southwest-facing wall. Like garlic, rosemary has antibacterial and antifungal properties. Current research aims to find therapeutic properties of rosemary's acetylcholinesterase inhibitors in treating Alzheimers's disease.

Link: http://cropedia.landfood.ubc.ca/wiki/Rosemary

Sweet Potatoes

Rich in Vitamin A and C, and high in antioxidants, these delicious tubers know primarily as 'sweet potatoes' but also as: Kumara, Louisiana Yams, or Yellow yams, are an excellent addition to the UBC farm. The optimal growing conditions for sweet potatoes are in tropical or subtropical climates where temperatures range from 70-77°F with an annual rainfall of about 30-50 in., with wet weather in the growing period and dry conditions for tubers to ripen. For

protective measures, it is important to grow this crop undercover in a cool temperature zone and to maintain moisture regularly while making sure to avoid congested growth. With ideal conditions, tubers will ripen in about 4-5 months and once harvested, can be eaten in a variety of ways ranging from simply steamed or roasted to a sweet dessert such as pies or cookies. The information available for sweet potatoes was quite extensive, especially for interesting recipes, which we think will provide future groups lots of options to get creative in that section

Link: http://cropedia.landfood.ubc.ca/wiki/Sweet_Potatoes

Tomatoes

Tomatoes are important in many diets, most notably the Mediterranean diet. Tomatoes contain a compound called lycopene which is a powerful antioxidant. There is quite a bit of information available for growing tomatoes but the amount of information available for growing tomatoes in greenhouses was a bit limited. There was quite a bit of nutritional and culinary information on tomatoes, to the point where it was difficult to present the information in a user-friendly format.

Link: http://cropedia.landfood.ubc.ca/wiki/Tomatoes

Discussion

Importance of Scenario

The main purpose of our scenario is to help increase communication between the UBC Farm/LFSOG and the UBC community (Agora, Sprouts, individual consumers, etc.) by providing information about the crops grown at the farm/LFSOG. The information contained within the Cropedia website will allow people to make more informed food choices that will benefit the entire food system. We hope to inspire people to choose local foods and hope that Cropedia will provide the inspiration. By using the internet, a broad target audience will be reached as many people can access the site at little to no cost.

Our scenario is only one aspect of the entire food system but it is crucial due to the importance of having the communication piece on board so that people are provided with the knowledge of where their food comes from and how they can influence their nutritional status to make informed food choices

Appropriateness of Methodology

In order to successfully achieve this scenario, it was necessary to collaborate between four groups of five people to create one large scenario group. The main reason for having such a large group was due to the relatively short time we had to research all forty-four crops. A group of five people would have found the task of forty-four crops challenging and we felt it would be beneficial to the users of the site to include as many crops as possible. By dividing the crops, each group was given eleven crops to work with which provided an adequate amount of time to focus on the specific crops. Individuals were able to filter out the most important information on their respective crops in order to supply the most important information posted on the website for the future users. Our group chose to use the same book to get the majority of our information in order to increase the consistency of the information for our crops.

Having time set aside in our curriculum during scheduled class time aided in the efficiency of our scenario group meeting up to collaborate our ideas. Especially in the beginning, the allocated scenario group meeting time was appropriate and necessary because we had to work with the same template for the Cropedia and decide on a consistent layout of information, specifically for the nutrition facts. It was therefore vital for us to all meet and if time was not scheduled in advance, it probably would have been almost impossible to coordinate everyone. With the presence of our T.A. at these meetings, we were able to address questions that had come up within our individual groups and through the class discussion. It was with his

guidance and clarifications that we were able to all agree on a final layout for the project. At this point, around the beginning of March, our individual groups began to spend more time working on our portions of the Cropedia and really saw the project come to life. Having a universal page that was visible for all members of the scenario allowed for visual assessment of other groups' ideas to both facilitate new ideas as well as refine the overall presentation of each crop page.

One issue that we ran into, which will be further discussed in Discussions, was working with the larger scenario group to contact Jay and Amy for information, more specifically directed to academic-based studies and affiliations. An example of this was finding out the 'years grown' for each crop. We discussed the appropriateness of this in class quite extensively because all of the scenario group members didn't see the need to include this, especially because it was hard to get in touch with Jay and Amy in a short amount of time when they were busy and this information was only available through Jay and Amy. After much discussion, we all were able to understand why this information was requested in our Cropedia template page but unfortunately was not found for our group due to an overload of inquiries to Jay and Amy in such a short time frame.

Successes

With Duncan's guidance, we were able to create Cropedia pages with uniform appearances. Each page contains a standardized set of information presented in an easy to read manner. Using the CNF and Health Canada websites, we were able to find accurate nutritional information with proper labeling regulations for the nutrient facts table for each crop. The LFSOG and UBC Farm seed logs provided the biological names of the species for each crop.

Shortcomings/Limitations

1. Gap between project description and group expectations

Our group initially underestimated the amount of work that was needed to put together such a comprehensive online resource. Part of the reason lies in the fact that we had assumed that information about academic affiliations and the crop specific information (i.e. years grown at either UBC Farm or LFSOG) would be easily accessible through liaising with community contacts. However, it turned out that such information was either unavailable or a lot harder to find than originally expected.

Ambiguous classification of beans was another frustration that our group had experienced. There is little information on specific beans (bush, pole, and fillet) in terms of growing conditions so after discussion with other groups; we have decided to clump those bean varieties into one category – string beans. In a meeting with Jay from the LFSOG, he also mentioned that bean categorization is rather confusing.

2. Time Constraints

Linking back to the aforementioned limitations, the biggest challenge was time. Our community partners from the UBC Farm did not have a lot of time to spare to provide us with information on the specifics of the crops as the farm is busily preparing for its planting season. We also felt that the 6-8 weeks we were given for the project was tight and we were forced to rush through sections of the project.

3. Basic skeleton of website

Having to work within a basic skeleton of the Cropedia website may have confined student creativity. However, within the time constraints of the course, it leaves very little time for students to further explore the technicalities of the page. We have only had one lecture with

Duncan on how to upload basic information and pictures onto the website. We found we had many other ideas for the site but due to time constraints and our lack of technological knowledge, we were unable to add our other ideas.

Group Dynamics

This year, the entire LFS 450 class was split up into 8 scenario groups. Most of these scenarios were then split into sub-groups consisting of 5-6 people. For the Cropedia project, scenario 6, a total of four groups were assigned to work on the project. Therefore each student was required to work in essentially 2 groups, their sub-group and the scenario group.

Generally speaking, our sub group worked together well. Everyone came to class prepared and finished their assignments on time. The most difficult part of the project was working as a scenario group. Each group ended up working by themselves and only came together to agree on formatting issues for the pages and which websites would be used to standardize nutritional information. This would otherwise be fine for most projects, but a large issue arose when contacting project stakeholders.

Part of the Cropedia project required each crop to have number of years grown at the farm or LFSOG and any academic connections. To find out this information, the groups were required to contact the UBC farm stakeholders and the LFSOG stakeholders. In this project, two major issues arose when contacting the stakeholders. The first issue was that none of the groups worked together to contact the stakeholders. Some groups contacted the stakeholders on their own while other groups tried to gather everyone together to contact the stakeholders. The second issue arose once the stakeholders had actually been contacted. It was discovered that the groups waited too long to contact the stakeholders and once we actually met with them, it was far too late to gather all of the information needed for each of the 44 crops. Due to the time of year,

many of the stakeholders were far too busy with planting crops and preparing for the season to assist us with our scenario.

Due to these two issues, the group communication on this project was not successful. Although each group had a communication representative, these representatives were often too busy or unresponsive to other communicators. Each group worked on their own 11 crops and had very little interaction or input from the remaining groups. The groups also did not keep the Teaching Assistant informed with their progress, which lead to the Teaching Assistant not being used as a facilitator and resource for the project. The project was not completed as specified in the assignment as the scenario groups did not come together as an organized, cohesive group. Because we did not work as a group, some of the required information is missing and should be addressed in future years.

Recommendations

Cropedia-Specific Recommendations

1. Inclusion of other crop-specific information

For the future, information about pests and insects should be included. A section on companion plants would also be interesting for anyone who is planning to start his/her own garden. We feel that Cropedia should be an informative online resource that captures audience from different disciplines with one goal in mind: to strengthen the relationship between soil and food. It is also important to regularly update new UBC Farm and LFSOG crop varieties on Cropedia. We feel this task would be best suited for future LFS 450 students.

2. Direct hyperlinks to members of the UBC Food System

Hyperlinks should be available to link Cropedia to the UBC Farm, LFSOG, UBC Food Services, AMS Food and Beverage Department, Agora, and AgUS. This way, users can explore

those campus affiliations in more detail on the web. This task should be accomplished by future LFS 450 students as they can communicate with the organizations to incorporate their hyperlinks.

3. Monthly highlights based on seasonality

The Cropedia homepage should feature a different Agora, Sprouts, or AMS food venue recipe that incorporates campus grown produce on a monthly basis to draw immediate attention to the relationship between soil and food upon visit to the website. Events like Farm-Aid and Apple-Fest can also be advertised on Cropedia. Each organization, such as Agora or Sprouts should be responsible for updating their monthly features. This will not only help people make the connection between soil and food but will also serve as a marketing tool for each of the organizations.

4. Recipe ratings

Rating application should be added to Cropedia to allow users to rate and comment on recipes posted on website. This will make the website more appealing to users and will help users trust the information on the site if feedback is incorporated through recipe ratings. Future LFS 450 students should be responsible for creating a recipe rating system on the site.

5. Blog

Users can share recipes and gardening tips and provide input on other applications that would make Cropedia more user-friendly and comprehensive. We feel this task would be accomplished by future LFS 450 students as they can create blog on the current Cropedia site.

6. Promotion of the Cropedia website

We feel the marketing of the Cropedia site is still undeveloped. We have created this wealth of information but have no way to introduce it to consumers. We feel that the Cropedia

URL can be included on compostable food containers, reusable bags, menus, food trays, and SUB bulletin boards. The Cropedia website should also be advertised through mass email via faculty listserv. This would be a great task for future LFS 450 students.

7. Creation of a survey to asses the website's success

In order to assess the success of the Cropedia site, we suggest the creation of a survey. The survey should ask users how useful they find the site and should also include space for suggestions. This task would be best for future LFS 450 students. Once they receive feedback, improvements can be made to the site to improve functionality.

Course-Specific Recommendations

One of the most crucial issues with this project was the lack of communication and cohesiveness between groups within the scenario. The following are recommendations to improve group work within the scenarios:

1. Have the groups come together and set specific deadlines to contact stakeholders. Groups should also attempt to contact stakeholders as soon as possible to avoid any delays in gathering information.

2. Assign group communicators and hold them accountable. Make sure the group communicator understands the value and importance of the job. If a communicator is unable to continue, ensure that another group member replaces the position. Since the communicator is an important and time-consuming job, we recommend some type of compensation or reward for the job such as less typing work for the paper, etc.

3. We recommend that the groups keep the Teaching Assistant informed with their progress. The Teaching Assistants are there to help and facilitate the project and should also be kept up to date with each group's progress as well as the progress with the scenario.

Conclusion

As students of the LFS 450 class, we have been challenged to work together in groups ranging from 5 to 20 to create a resource that, we hope in the future, will be a successful mediator between UBC food consumers and the land in which our food comes from. The problem of this lack of connectivity was posed and we feel that Cropedia is a solution to the problem. With our vision statement in mind, we collaborated among many students, to bring to life this idea which we hope will be further refined and pursued in the future years of LFS students. As stated in our recommendations, there are many new ideas that we feel will aid in the success of the launch and ongoing existence of the Cropedia through various marketing methods and becoming aware of what our users will benefit most from seeing on the Cropedia page. It is in our highest hopes that in the years to follow, we will see this resource integrated into various UBC facilities such as the UBC farm, LFSOG, UBC Food Services, Agora, and AgUS, to name a few, and to connect our campus and those who pass through it to the food that is grown and provided by the land that is so close, yet sometimes disregarded.

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