



Kennebec Valley Community College


Growing Maine

Year 1 TAACCCT Grant Evaluation Report

Prepared For: Kennebec Valley Community College

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Executive Summary

Kennebec Valley Community College (KVCC) received a \$2.5 million grant from the United States Department of Labor to support its “Growing Maine” project to develop degree and certificate programs in Sustainable Agriculture and Culinary Arts. The Sustainable Agriculture program has completed its first year, while the Culinary Arts program was launched for the Fall 2014 semester. Data was collected through course evaluations, surveys of Sustainable Agriculture students and a comparison cohort of students enrolled in other programs at KVCC. Qualitative interviews and focus groups were conducted with key stakeholders including program staff, administrators, faculty, and advisory board members.

Analysis of the data yielded key findings in three main areas:

1. Motivations and Program Goals

- a. Sustainable Agriculture students have diverse motivations and backgrounds that are somewhat different from the comparison group. Sustainable Agriculture students may face additional personal challenges and barriers than the comparison students given key demographic differences. However, Sustainable Agriculture students are just as successful in their program as students in the comparison group.
- b. Sustainable Agriculture students are seeking alternatives to traditional employment and see the program as a way to make the transition.
- c. The Sustainable Agriculture program is well-matched to the needs and interests in the growing agricultural economy in the local area as well as the state of Maine.

2. Program Successes

- a. The Sustainable Agriculture program was launched and welcomed an enthusiastic first cohort.
- b. Several classes received “excellent” ratings and students spoke highly of courses and instructors.
- c. Infrastructure was established for both the farm operations and to integrate innovative technology into the learning experience.

3. Opportunities for Program Improvement

- a. Communication could be improved with all stakeholders and efforts are being made to address this through new personnel.
- b. The creation of opportunities where program faculty, students, and community stakeholders can share knowledge, grow networks, and celebrate success together.
- c. While some courses received “excellent” ratings, other courses were less consistent. Again, efforts have been made to address this through personnel changes.
- d. The launching of the Culinary Arts program in Fall 2014 will provide opportunities for synergy with the Sustainable Agriculture program.



Table of Contents

Introduction	1
Methods.....	2
Results.....	3
<i>Motivations and Program Goals</i>	3
<i>Program Successes</i>	12
<i>Opportunities for Improvement</i>	18
Recommendations.....	26



Introduction

“The Center for Farm-to-Table Innovation at KVCC educates students in sustainable food production, processing and preparation and serves as a resource to support local food systems.”

Mission Statement, 2014

Kennebec Valley Community College (KVCC) received a \$2.5 million grant from the United States Department of Labor to support its “Growing Maine” project to develop degree and certificate programs in the areas of Sustainable Agriculture and Culinary Arts. These two programs help address a critical gap in educational offerings for individuals interested in pursuing employment in the growing “farm to table” industry in Maine. As of June 2014, 12 students were enrolled in the Sustainable Agriculture degree program. The Culinary Arts program began enrolling students in Fall 2014.

In addition to developing these academic programs, KVCC acquired an ideal property to house both programs in close proximity to its main campus through a generous donation from the Harold Alfond Foundation. Construction of the KVCC Farm and state-of-the-art culinary teaching facilities has been underway during the 2013-2014 academic year. As KVCC’s experiences illustrate, growing new academic programs while simultaneously creating critical infrastructure for those programs is an ambitious venture. This report primarily focuses on the development and implementation of the Sustainable Agriculture program during its first year. KVCC identified four learning outcomes for its Sustainable Agriculture program graduates:

1. Possess the knowledge and skills necessary for a successful career in agriculture.
2. Identify, develop, and practice traditional and alternative agricultural methods.
3. Use technical and learned knowledge to collaborate and solve complex agricultural problems.
4. Demonstrate effective communication skills.

This report provides a summary of the first year results through the review of qualitative data from Sustainable Agriculture program students and stakeholders as well as an analysis of the institutional and survey data collected. Recommendations are presented for improving program experiences for all stakeholders into Year 2 and beyond.

Methods

In order to evaluate the KVCC implementation of the Department of Labor TAACCCT Round 2 grant, the Center for Rural Studies at the University of Vermont collected qualitative and quantitative data from students enrolled in the Sustainable Agriculture degree program, a comparison group of students, as well as stakeholders, including members of the advisory committee, faculty members, and program administrators (Table 1). The Institutional Review Board at the University of Vermont granted approval of research protocols prior to all data collection and analysis efforts.

Table 1. Summary of data collection methods and audiences

	Online & In-class Surveys	Institutional Data	Discussion Group/Key Informant Interview
Sustainable agriculture students	x	x	x
Comparison students	x	x	
KVCC faculty			x
KVCC administrators			x
Advisory committee members			x

Twenty-one students completed surveys either online or administered during a class in May and October 2014. Institutional data were provided at the completion of each semester (Fall and Spring). Given the small number of program participants, descriptive results are provided later in this report.

The discussion groups were facilitated by Erin Roche and notes were taken by Kelly Hamshaw in early June 2014. Four of the five sessions were audio-recorded for more detailed qualitative analysis. The program manager was interviewed again in October to discuss program changes made during Summer 2014. Each participant was provided a research information sheet that described the purpose of the session as well as details about confidentiality.

Section 1: Motivations and Program Goals

The Sustainable Agriculture program fills an important niche in agricultural education in Maine, being the only two-year Associates degree offered in a state that has a growing “farm to table” industry. Prior to this program, an on-farm apprenticeship or a four-year degree program were the only post-secondary options for developing new agricultural professionals. The discussion groups with students, faculty, advisory board members and administrators provided rich insights into student motivations for enrolling in this program as well as perspectives from program leadership and community stakeholders about the value of the program to regional food system. This section explores the stated program goals as they were originally designed relative to the implementation of the program in its first year.

1. Student needs, motivations and backgrounds

KVCC administration and faculty understand the needs and interests of the students currently enrolled in the Sustainable Agriculture program. They recognize that the students have some differences compared to students in more established programs at KVCC, including responsibilities or challenges beyond the classroom that impact their academic experiences. Three students from the first year were reported by program leadership as having difficulty balancing work-life-academic pressures and/or discovered the program was not what they were looking for and subsequently ended their program. The administration felt that the program leadership provides students with the necessary guidance and support to be successful in the program.

As shown in Table 2, Sustainable Agriculture students chose the program, because it is unique, they wanted to gain practical experience, to expand their careers and because KVCC offered a convenient location. Most often, they asked themselves “will my skills get me a job?” and “can I afford this?” Other common concerns were “will I have enough time?” and “will I make a better wage?”

This program represents a long term investment and students’ questions can be categorized as doubts about themselves and doubts about the potential job market. Not all the students reported that their questions had been answered, in fact very few (8%) of the Sustainable Agriculture students surveyed reported that all their questions about the program itself had been answered.

Table 2. Student background.

Top 2 Reasons for choosing program	Comparison n=9	Sustainable Agriculture n=12
Convenient location	42%	42%
Gain practical experience	17%	50%
KVCC Faculty	17%	0%
Student recommendation	0%	8%
Employer recommendation	17%	20%
Starting business	0%	33%
Expand career	58%	33%
Unique program	8%	25%
Other	8%	0%
Questions before starting program of study	Comparison n=9	Sustainable Agriculture n=12
Have I been out of school too long?	29%	56%
Will I have enough time?	63%	58%
Are my high school skills strong enough?	63%	30%
Will my skills get me a job?	89%	83%
Will I make a better wage?	89%	67%
Will classes prepare me for a 4-year program?	56%	36%
Can I afford this?	75%	73%
Will I have time to meet people?	25%	18%
Were all your questions answered?	63%	8%

a. Seeking alternatives to “traditional” employment

Entrepreneurship and self-sufficiency emerged as key themes from the students when discussing what motivated them to enroll in the Sustainable Agriculture program. Multiple students reported during the discussion groups a desire for learning skills and knowledge that would lead to successful homesteading experiences or operating their own farms, greenhouses or farm stands. One student described his personal motivation for homesteading to be *“as a kid growing up we used to have goats, chickens, rabbits, my mom used to can just about everything out of our very large pantry, she used to can a lot. I just kind of want to get back into that.”* Several students are exploring the potential to grow their homesteading experiences into small businesses. One student explained, *“I originally came in just wanting a homestead but now I’m looking at more of the business aspect of it. After I get the infrastructure set up and I start taking these small steps to see where it is that you end up hitting that*

tipping point where it's too much, you know what I mean, so you've kind of got to push it a piece at a time. Before you just jump."

Administration and faculty at KVCC recognize that their students are attracted to the Sustainable Agriculture program for a variety of reasons, including pursuing homesteading and entrepreneurship opportunities. One faculty member reported that the goals of her students are so varied that, *"I've tried to be clear...that I want to expose everyone to everything and they can choose when they're out on their own and they've got their own agricultural operation, they can pick and choose what's best for the market that they are looking to service and what's best for their management style and their land resources."*

KVCC administrators believe that the Department of Labor definitions of employment are not fully aligned with their goals of creating employers or satisfied self-employed individuals and that the current definition is too limited to assess the successes of this program based on wage data.

b. Diverse student demographics and life experiences

The Sustainable Agriculture program has attracted students with varied demographics and life experiences. The increased interest in local foods in Maine has driven interest in this particular area from different demographics than have typically been drawn to KVCC programs. The administration described the current cohort as being men in their 20s and women in their 50s interested in self-employment and strategies for making their land more productive.

Students in the Sustainable Agriculture program and the comparison group had comparable Fall GPAs, with 2.68 on average for Sustainable Agriculture and 2.47 for the comparison group. However, students in the Sustainable Agriculture program are statistically older than those in the comparison group, as shown in Table 3. Very few students in either program have a disability, though 9% of the Sustainable Agriculture students have a disability. The comparison group is 72% female, while the Sustainable Agriculture program is 41% female.

Table 3. Demographics from Institutional (*) and survey data

	Comparison	Sustainable Agriculture
Institutional data	n=100	n=22
1st generation college*	77%	59%
Age, in years*	23	33***
Disability*	1%	9%
Gender (% female)*	72%	41%
Race (% white)*	95%	100%
Survey data	n=9	n=12
Veteran	0%	17%
TAA eligible	0%	8%
Farmers in family	22%	42%
Dependent in household	67%	75%
Eligible for Pell grant	89%	75%
Adults in household	1.57	1.27
Children in household	1.00	1.73
Distance to campus, in miles	30.56	21.83
Distance to campus, in minutes	39.11	24.17

Student discussion group participants had a variety of life experiences that triggered their decisions to enroll at KVCC. Some described a forced change of careers due to workplace accidents or lay-offs, while others were driven by their interests in becoming more self-sufficient as homesteaders. One individual described both motivations as his reasoning for enrolling, *“I was looking to get back into the homesteading situation because I had had a concussion two years ago and cannot drive truck commercially anymore, so for me it’s a way of trying to provide for my family and myself in a way of reducing the amount of cash needed by producing more of my own food.”* Some students learned of the program through their current employers such as Johnny’s Seed Company, a major agricultural business in the region.

Faculty recognized the differences in the life experiences brought to their classrooms, especially relative to another four-year program in the region. One member elaborated, *“I was surprised when I started here at KVCC that the demographics of the student population is what it is, because you know I was used to Unity College where we were getting the straight out of high school kids in the four year program. This is a different animal. This is people who are wanting to be producing their own food or are changing their careers and their average age is thirty-something, so a totally different kind of student.”* The diverse life experiences and demographics of the students can be viewed as both a strength and a challenge for the program. For example, it can be difficult for an instructor to keep all students actively engaged in the material when some bring a lifetime’s worth of experience on dairy farm while others never handled livestock before enrolling in the program. One particular faculty member encouraged her students to partner with another student who had different experiences so that they could learn from each other. To further emphasize the variety of students served by the program, an administrator

shared during one of the discussion group sessions that, *“One of the students was just articulating that he appreciated how well the program served students with such a wide range of experience and skills for backgrounds. He put himself in the middle, with some peers having a lot of experience/knowledge, and some having never known gardening.”*

Another student discussion group participant with some prior agriculture experience described his intention for enrolling in the program as, *“I can learn why some of the things I’ve done in the past worked and learn a few new tricks or different techniques that have come along the way, technologies, and also learn from the mistakes that other people have made.”*

With their diverse life experiences, some students are also entering the program with some academic challenges. One administrator provided an example, *“They’re not testing well in math, particularly when they come from the technical center. Often times, they self-select, that they’re struggling with college tracks, so they go to the tech center...I think the students need emotional support more than anything.”* A few students in the discussion group expressed some anxiety over returning to a classroom with formal tests, yet found the teaching styles of the instructors in the Sustainable Agriculture program to be supportive of their learning. For example, one student described how he was initially worried about how he would perform on tests in a specific class where the bulk of the course was discussion-based but discovered that he performed better than he anticipated because he was actively engaged in the course through those discussions with the faculty member and peers. Several members of the program leadership emphasized that while students may have a lack of confidence regarding their academic skills they are actually performing quite well on their tests—despite their initial anxiety or fears.

Business planning and marketing are two areas of expertise where the KVCC administration believes most of their students have a gap in their previous experiences—regardless of age or demographics. An administrator shared, *“this generation [of farmers], regardless of the age of the participants, the people coming into agriculture now are coming into it with a totally different perspective. That’s why we’ve decided such a core part of our program is having that business/marketing savvy so that you not only know how to grow the carrot, but you can actually sell it and keep yourself employed”.* To further highlight this important theme, an advisory board member drew from her professional experience to emphasize that business planning for aspiring farmers is especially critical for their success in business. *“What I know is that in my work with beginning women farmers, they are energetic, they are committed, they are smart, they are often from away, they can afford land here but not in their home state. And I fear for them because they’re not looking at the business of agriculture and they’re not looking at profit. When I teach financial planning I teach profit first, income minus profit equals expenses, not income minus expenses equals profit.”*

Table 4 shows that about half of the Sustainable Agriculture students (42%) and half (50%) of the comparison group is working part-time. Sixty-nine percent of the Sustainable Agriculture students are full-time students. One-quarter (25%) of the Sustainable Agriculture students are working full-time, compared to none of the comparison group. Table 3 shows that students travel between 20-30 miles to campus, or about 25-40 minutes. Most of the Sustainable Agriculture and comparison group have dependents living in their household and most are eligible for a federal Pell grant.

Table 4. Employment and student status (* denotes data derived from institutional data).

Employment Status	Comparison n=9	Sustainable Agriculture n=12
Full time, related field	0%	17%
Full time, unrelated field	0%	8%
Part time, related field	17%	25%
Part time, unrelated field	33%	17%
Unpaid, related field	0%	0%
Unpaid, unrelated field	0%	0%
Self employed	8%	8%
Not working	17%	25%
Other	15%	0%
Student Status*	Comparison n=100	Sustainable Agriculture n=16
Full time	99%	69%
Part time	1%	31%
Candidacy type*		
Continuing student	3%	0%
New student to KVCC	45%	19%
Prior student	24%	6%
Re-admit	11%	56%
Transfer	17%	19%

The Sustainable Agriculture students have fewer total earned credits compared to the students in the comparison group, with 50% of the Sustainable Agriculture students having completed 15 or less credits as of Spring 2014 (Table 5). The Sustainable Agriculture students earned higher grade point averages compared to their peers in the comparison group both semesters.

Table 5. Number of credit hours earned, enrolled, GPA earned.

	Comparison n=100	Sustainable Agriculture n=16
Up to 15 credits	99%	50%
16-30 credits	1%	19%
31-45	0%	12%
46+	0%	19%
Fall term GPA	2.47	2.68
Spring term GPA	2.60	3.18
Fall hours enrolled	13.51	12.56
Spring hours enrolled	9.99	10.00

c. Interest in program

As shown in Table 6, Sustainable Agriculture students primarily learned about the program and were influenced by a variety of sources including current students, counselors and employers, as well as brochures and the KVCC website. Students in the comparison group also commonly gained information from current students, as well as the website. Of note is the limited role as an information source of traditional and non-traditional types of outreach such as brochures, info sessions, social media, and open house.

Table 6. Information source(s)

Information Source	Comparison n=9	Sustainable Agriculture n=12
Current KVCC student	33%*	17%
Former KVCC student	8%*	0%
High school guidance counselor	17%*	8%
Program Coordinator	8%*	17%*
KVCC Open house	8%	0%
Website	4%*	8%
Brochures	0%	25%*
Information session	0%	0%
Social media	0%	0%
Professional organization	0%	8%
Employer	0%	8%
Other	17%	25%*

*Noted as “most influential source” by 1 or more students

KVCC program staff shared that marketing efforts to increase outreach to potential students will include new posters and one-page program snapshots that will be used at regional career centers and local high schools. KVCC is also inviting area high schools on field trips to visit the KVCC farm.

2. Addressing community needs

Agriculture in Maine has made a resurgence due to the growing farm-to-table movement. As this movement continues to grow, opportunities for skilled and savvy farmers and entrepreneurs abound in the region surrounding Fairfield and beyond. One program staff member characterized the opportunity for the Sustainable Agriculture program as, *“We have a lot of small farms, farming is growing in Maine. People are more homesteading as well as local farms. There’s a great interest in our students to carry on the family farm, our adult students to start farms, we’re seeing people very interested in seed production—so it’s a big industry for Maine. It always has been...we got away from it for a little while and now we’re coming back and building on what’s been Maine’s history.”*

The administration described the vision of the program as being closely tied to labor market trends and the surrounding community needs. KVCC leadership engaged the regional agricultural community in the planning of the Sustainable Agriculture program by inviting leaders and professionals to join the Advisory Board. This venue has identified important skills that agriculture and food industry employers are looking for in the workplace, ranging from the latest food safety and integrated pest management

protocols to marketing and critical thinking skills. The main occupations that the Sustainable Agriculture program seeks to prepare students for are forecasted to grow between 5-12% by 2018.

With the acquisition of the new farm campus (the former Good Will-Hinckley School), the KVCC administration believes that it will be able to more actively engage and meet the needs of the community through the Sustainable Agriculture program and its farm, noting that summer enrollees are significantly lower than during the academic year. Significant progress has been made with the new state-of-the-art kitchen facilities that will be home to KVCC's Culinary Arts Associate's degree and Certificate programs. An administration official acknowledged that there was some anxiety voiced by the local community about the new programs, specifically related to potential competition from the college farm in local markets and the balance of organic and conventional farming methods in the curriculum.

KVCC program staff have been regularly participating in the Maine Agricultural Council to provide monthly updates about the program to regional and statewide agricultural stakeholders from industry, state agencies, and non-profit organizations. The program manager remarked that participating in this group has been especially helpful in generating interest, enthusiasm, and support from the agricultural community. *"I've been attending their meetings, putting out our needs and re-engaging people. And I can say at our last meeting, I felt like people were more responsive, asking great questions, approaching me with ideas, and I've been getting great feedback in terms of feeling this [program] is, 'yeah, this program is what we're looking for. We want to help, we want to give you our thoughts...because we want the people who come out of your program.'"*

3. Stated program goals

The KVCC Sustainable Agriculture program was designed to include three main programmatic goals:

- alternative delivery method
- innovative use of technology
- problem-based learning

As the farm infrastructure is further developed, progress will be made towards integrating and strengthening each of the three program goals. Program leadership discussed the challenges of enrolling TAA students given the relatively small number of TAA-certified industries in the region surrounding Fairfield, which makes recruitment efforts difficult. *"Location is everything. There's not much industry- we do have a company north of us that has 320+ employees that are going to be TAA-identified, and we are already seeing some of those students and are having one coming into culinary. So I think we'll do better, but we didn't have any industry that was TAA-certified, makes it hard to recruit unless you have a big mill going out."*

a. Innovative use of "smart classroom" technology

KVCC identified three tools central to their goal of using innovative technology within the Sustainable Agriculture program, including Blackboard Collaborate web conferencing software, Vernier software and probes, and ArcGIS mapping technology. Discussion group participants described varying levels of success with integrating this technology into the curriculum within the first year while students have at least had some limited exposure to each of these tools within their first year. A faculty member described how they were not able to fully utilize the Blackboard classroom management software due to technical issues related to the required bandwidth for the web conferencing feature that would connect experts in the field to students in the classroom for enriched learning opportunities. It is anticipated that the bandwidth issue will be addressed to enable full use of the Blackboard technology for the next academic year.

Student discussion group participants also commented that it was important to be exposed to technology that they could realistically expect to use on “*real world farms*”. This was mentioned specifically in regards to the Vernier soil probes. *“It wasn’t applicable, you couldn’t use it on a farm, so to me that session was completely useless, as far as I was concerned. Because I could never purchase that equipment to do my testing. Show me something that I can purchase that I can use to test my own soil.”* A program staff member emphasized that more work is needed to build upon the introduction to ArcGIS that students received during the Fall 2013 semester.

b. Problem-based learning

The development of a problem-based learning process is underway and discussions with a variety of stakeholders related to the program revealed numerous opportunities for engaging students in this active learning pedagogy—especially in the early stages of starting the farm. Program staff remarked that KVCC is hiring consultants from the New England Board of Higher Education to facilitate the integration of problem-based learning within the program. Student discussion group participants described a few instances where they were asked to participate in problem-based learning activities for improvements at the farm. One example was the design of a walking trail from the main farm buildings to a nearby field. Students were asked to lay out the trail and select plants for landscaping as a class activity. However, the students were disappointed when they learned that another design was selected for installation without any feedback.

c. Alternative delivery methods

The development of the Sustainable Agriculture program offers new opportunities for aspiring agricultural professionals, entrepreneurs, and homesteaders in the region. KVCC administrators commented that it was clear from early discussions with stakeholders that there was a need for a unique curriculum in agribusiness and agricultural marketing for their students. They also recognized that there is an audience for non-credit modules in these topics that will be offered in the future. Internships were highlighted as a dynamic learning experience for students that addresses the desire of local employers for employees with practical experiences in addition to the technical knowledge gained in the classroom.

Section 2: Program Successes

Launching any new academic program is an ambitious undertaking—particularly when physical infrastructure central to the program is simultaneously under construction. KVCC has experienced many successes during the first year of its grant that should be recognized. These successes offer indications of the potential for these programs to continue to grow and have positive impacts for students, area employers, and the community at large.

1. Infrastructure for program

The first necessary step to providing a successful Sustainable Agriculture program that would meet the three goals was to put the infrastructure in place, including the farm facility. KVCC considered its *“First year [as] start-up [and we] only have so many weeks to get things rolling.”* As one of the KVCC staff reported *“This whole year has been making do; soon we are going to have a farm...soon we will have a classroom proximate to the farm and can be doing all this stuff. This has been very difficult starting with zero infrastructures. It’s not only building programs, we’re also having to build the buildings as we go.”* Even though KVCC acquired land that had been used for farming previously, there was still much that needed to be accomplished in the first year: *“livestock, barn renovation, sustainable agriculture building.”*

Now that the physical infrastructure is more in place, KVCC can shift greater focus towards the curricular program goals. Program leadership has already identified areas for improvement and the actions necessary for making progress. First of all, *“For problem-based learning, the New England Board of Higher Education (NEBHE) will bring some individuals to facilitate that over the next year.”* Second, *“We’ve spent so much time and energy on infrastructure and basic stuff that we haven’t had the chance to do those other things. I think next year will look very different. We have done the technology; we have used Blackboard...really, we have to expand on it.”* And third, in the words of one of the program’s advisory board members, *“[it’s] not just about making or helping producers be successful but people who are going to work in our economy with an ag background, or ag related.... There are people who cannot afford to go to college for two years. They want to get in, learn the skills, and start work. And that is, that’s fabulous, so...four year colleges or masters programs in soil sciences are wonderful, absolutely wonderful for academic kids, but to have an opportunity for number 1, not just for kids, for people of all ages, non-traditional students as well as traditional students, finding a way into the economy through school I think is just brilliant.”*

2. Integration of innovative technology

While technology has not been integrated to the extent that KVCC plans, they have had some initial success and put building blocks in place for the coming year. *“High school students will be taking a course in the fall, part video conferencing (want to find out more about this program). A UMaine faculty member will be teaching alternate delivery to high schools. Technology wise, students are beginning to use Vernier software and an intro to GIS. Feels like they have used the technology that was in there, and that things will get better once...the farm [is] up and running.”*

They have created an environment that enables students to use technology to improve their experience. For example, *“one student had employment conflicts/obligations and numerous times had an iPad on the table for a live classroom session. Students find a way to participate in the classroom using their own way/attitudes, even if it is not something we are providing to them.”*

Students described the value of being exposed to a variety of technologies that can increase productivity and efficiency of farming, such as solar fence chargers. *“For me being able to work with those technologies and kind of learn more about them so I can do my own farm- oh yeah, absolutely we’re gonna have some of those.”* Students also commented that it was important to be exposed to technology that they could use on *“real world farms”*. This was mentioned specifically in regards to the Vernier soil probes.

3. Program launched

Stakeholders agree that this program is important to the community so getting the program launched this year has been a big success. As one of the advisors related *“there’s not really much in Maine for these kids to do without it... That doesn’t mean they’re all going to go into it as a career but there’s a certain faction hopefully that will be interested in that, so that was my motivation, was to try to have a two-year program.”*

One faculty member communicated the importance of the program by describing how needed connections were made. *“The whole goal of the program is to get them **work-ready**, so what better way to match up potential employers to potential employees? And I always at the end, after we left, would thank the farmers and ask them if any of the students had questions, could they contact them directly. Every farmer to a person said, yeah sure. And so you know, because we only had x amount of time so if there was something a student wanted to pursue in their own time on their own.”* Even basic things like establishing a common language are valuable, and this program makes a unique contribution *“what I am trying to do is get everybody a base vocabulary so like for instance, what you say what is the difference between sustainable agriculture versus what somebody’s talking about is organic agriculture. What do we mean by that, is there a difference? And just some kind of basic common understanding of animal agriculture systems... So I try to give them just a basic vocabulary, if you will, agricultural literacy almost that they can at least go out an approach a potential employer and that’s where they’re going to hone their specific skills, you know what’s the best way to do integrated pest management in a greenhouse, because we are probably not going to be able to accomplish that in a two-year program.”*

Two courses (out of six offered) were particularly well received during the first year. As shown in Table 7, more than half of the students in these classes rated these two classes as “Excellent.”

Table 7. Overall course rating of excellent courses

Excellent Rating	
Agr101 (n=9)	67%
Bio107 (n=8)	63%

As described in Table 8, students in these courses overwhelmingly agreed that these two courses succeeded in the aspects evaluated.

Table 8. Agreement with program aspects for excellent courses

	Agr101 n=9	Bio107 n=8
Course improved my understanding of concepts in this field	100%	100%
I understand the methods of evaluation used to grade my work	89%	88%
The textbook contributed to my understanding of the course	100%	75%
Course activities and assignments helped me learn	100%	100%
The course was well organized	89%	88%
My instructor's in class explanations helped clarify course material	89%	100%
Concepts were presented in a manner that helped me learn	78%	100%
The content of this course was consistent with course objectives	100%	100%
Syllabus clearly stated the course objectives, etc.	89%	100%
I would recommend this course	89%	89%
Lab Experience		
Lab manual/ handouts were valuable resource	--	75%
Working in a lab group was a valuable learning experience	--	88%
Lab expectations were adequately explained for each lab	--	100%
Lab sessions are well organized	--	88%
Lab contributed to my learning	--	100%
Lab experience supported the lecture topic	--	100%

4. Addressing need in community through alternative delivery

Multiple discussion group participants described how KVCC's Sustainable Agriculture program fills an important gap in the agricultural industry by seeking to blend both practical and technical knowledge and skill areas. An administrator commented that, *"non-profit and other service organizations see us as an important piece of providing agricultural support and education for this part of the state. Has an important voice at the table, because everyone sees that we have these facilities and students and are really excited that this opportunity is there."* An advisory board member added that the program has broader impact on the agricultural community within Maine, *"I'd like to see kids stay in the state and have a place to learn and do here...then we can all be stronger so that business of helping... it's really to be a helpful partner in any way that that can happen because all of our agricultural efforts will be stronger."*

Understanding that a two-year Associate's degree is not everyone's goal, KVCC will develop alternative credentials in the form of certificate programs so individuals can get the professional or personal

development that they are most interested in obtaining. An administrator felt that, *“I think if you look at this population, some of them just want the agricultural classes. A lot of them will tell you they don’t care about the degree, which is not what we want to hear of course. A lot of these students are from other programs, because they don’t like them, or weren’t doing well. They come from other places and feel like they love to be outside.”*

More than half of the students in both programs have some previous college experience, either at KVCC or another institution. These students have tried, but not completed other programs (Table 9). On the other hand, for 25% of the Sustainable Agriculture students this is their first college experience.

Table 9. Prior college experience

	Comparison n=9	Sustainable Agriculture n=12
I have previously enrolled at KVCC	9%	17%
I have previously been enrolled at another 2 year college	36%	33%
I have previously been enrolled at another 4 year college	18%	17%
This is my first college experience	36%	25%

Students in the Sustainable Agriculture program appreciate the alternative delivery, from teaching styles to field trips. As one student related, *“[the instructor] taught class in a way that was super interactive... I learned more from our conversations after reading our material in class than I would ever learn from sitting there taking a test marking A,B,C...In the agricultural field there is so many different ways to do things, there is no right answer, you have to adapt. Everything we have out here, the soil is different everywhere we go so you have to do these things differently.”* Students made it clear that they have some experience with previous instructors and appreciated the differences, *“...he taught in a way that I’ve always wanted to be taught by someone... A lot more stuff open to discussion, a lot more- everything’s not black and white, there’s more than one way to do stuff, he made it interactive where I didn’t want to sleep through class.”*

Faculty felt that offering a hands-on type of experience even when all of the facilities were not ready was important. *“(We) wanted to give the students a little bit of a realistic picture, so I took them to some farms that were kind of in tough shape, operating on a shoe string and then others that were kind of gentlemen farms...the ag operators allowed us to take photos, so the very next class after the field trip then I kind of reviewed it.”* Students also appreciated the efforts made to include field trips in the curriculum. One student commented that *“the field trips...those were some of the most educational experiences that we could have had. I can’t imagine what it would have been like not hearing other farmers, like he said, they start up, they go through that learning curve, they’ve been doing it for a while so they can pass on their knowledge,”* while another student appreciated the interaction of the field trips *“the teachings that we got in talking to the farmers on the field trips, I was able to pull out what I need”* and how the program is *“structured ... based on what we needed and I really like that.”*

Faculty and administration pointed out that these successes are also leading to new opportunities in the community. First, *“it was kind of important to introduce ourselves and our program to the community. Because most of the local agriculture producers know about the program, they might have varying degrees of involvement.”* As a result of the programming, *“we are getting calls for other partnerships out there that need an educational arm...they need female farmers, education and animal husbandry...so we may just partner and deliver remotely.”*

As shown in Table 10, fewer Sustainable Agriculture students described program aspects as important than those in the comparison group. Despite fewer students describing aspects as important, even fewer students were satisfied with these program aspects. For example, 67% rated access to employment opportunity as important, but only 27% were satisfied with access to employment opportunities provided by the program. On the other hand, 89% of the comparison group described employment opportunities as important and 89% were satisfied with the opportunity offered by their program.

Also shown in Table 10, 25% of the Sustainable Agriculture students stated that they would recommend this program and 58% said they were “unsure.” This is surprising as Table 7 and Table 8 show that nearly all students would recommend the specific courses, even the ones that few rated as “excellent”.

Table 10. Importance of, and Satisfaction with, program aspects

	Important + Very important		Satisfied + Very satisfied	
	Comparison n=9	Sustainable Agriculture n=12	Comparison n=9	Sustainable Agriculture n=12
Access to employment opportunities	89%	67%	89%	27%
Appropriate tech available	100%	75%	78%	55%
Class sizes appropriate	100%	93%	89%	82%
Classes rigorous	100%	58%	78%	55%
Helpful financial counselors	100%	67%	100%	82%
Responsive to student needs	100%	67%	100%	27%
Faculty are knowledgeable	89%	83%	89%	64%
Staff helpful and approachable	78%	83%	100%	64%
Adequate lab facilities	33%	67%	43%	44%
Lab experiences clarify lecture	100%	83%	100%	46%
Peer support helpful	100%	67%	100%	70%
Opportunity to network with professionals	78%	75%	100%	46%
Opportunity to participate in student life	100%	17%	71%	40%
Internship	89%	67%	83%	36%
	Comparison		Sustainable Agriculture	
Would recommend this program	100%		25%	

Most Sustainable Agriculture students agreed that their instructors were prepared (83%), confident (75%) and competent (83%) (Table 11). However, notably fewer (58%) agreed that their instructors provided a hands-on experience.

Table 11. Instructor Characteristics, Strongly Agree + Agree

	Comparison n=9	Sustainable Agriculture n=12
Are prepared	100%	83%
Are confident	100%	75%
Are competent	100%	83%
Provide hands-on learning experience	100%	58%

Section 3: Opportunities for Improvement

As with any new initiative, discussion groups and survey responses reveal some key opportunities for improvement as KVCC moves forward with the Sustainable Agriculture program as well as the Culinary Arts program in addition to the other certificates planned for the future.

1. Communication— via innovative use of technology

The most frequently mentioned opportunity for improvement is the area of communication. Some are frustrated already by a lack of communication, while others feel it could improve their experience. One KVCC program staff member stated *“the vision hasn’t been clearly articulated. It’s hard as a college employee... where we’re supposed to be at a certain time. Things have changed...time lines within that infrastructure are constantly changing.”* Faculty members also have felt unsure of the plan: *“what is the plan? You know, and even if I had no control over it as just a part-time instructor I sort of feel like I should’ve been aware of that. Even if I had nothing to do with it and made no policy decisions, but to me as just a part-time instructor just so we can coordinate, I wasn’t made aware of that or really know what the plans for the animals is. I don’t know if they’re just going to try to raise meat for the college, or is it all going to the farm stand, is there going to be a farm stand?”*

Communication has been challenging both internally, as well as externally. One of the advisory board members recalled that, *“...what KVCC was doing. I think it’s a well-kept secret. Either that or I don’t read the paper.”* And the program staff believes that *“As an institution, we haven’t done a fabulous job of reaching at those (TAA sites or open houses).”*

To take advantage of this opportunity, KVCC may benefit from making innovative use of technology. Connecting and communicating with internal and external stakeholders can be challenging, but technology may provide a means to make information available. One of the advisors reflects that *“the advisory board has, they have something to report, something to pass or you know, run by a group of people from agriculture, so we kind of spend the afternoon on this one topic, you don’t really get the whole picture...each meeting there’s new people that come on but there’s no way to catch them up.”* And faculty also seek to make connections with their peers *“It seems like that maybe would be best served if we had separate staff meetings, which we have not- at least I haven’t been invited to separate staff meetings.”*

Advisory board members, not being employed or enrolled at the institution, have special needs for communication. One member described this succinctly *“I do think the folks that are invested in it, that have worked on the program, need to get a report or some updates on what’s going on.”* Another member was also blunt *“I haven’t gotten out of it is any response, any follow-up... We don’t know of any actions taken based on our decisions. It’s not a rubber stamp committee, we have I think fairly robust conversation and there’s a difference of opinion and we come to agreement. But then I don’t know what happens and that’s- were that to continue I would probably leave the committee because it’s not, it doesn’t sustain my intellect or my passion or my anything.”* Program staff reported that progress towards establishing more consistent communication and engagement with advisory board members has been made since the Spring 2014 semester.

Retention of staff and faculty is seen as a related challenge for the program. As one staff member reported, *“We think we’ve got things resolved, then we’re told it’s not that way. For personnel we’ve had huge turnover...every single person on the staff has changed.”* Others emphasized that it has been *“difficult to find the qualified faculty and staff [and] starting the farm has been a particular challenge.”* It should be noted that the program manager position was one that saw turnover during Year 1. Not until June 2014 did KVCC hire an individual who demonstrated a commitment to fostering communication and collaboration that will strengthen the program. The farm management structure also experienced change; the departure of the farm manager at the end of the Spring 2014 semester was an opportunity to divide farm duties between the two assistant farm managers while assigning oversight of the farm to the program manager.

Along with communication, several stakeholders expressed a desire for more focused leadership of the Sustainable Agriculture program and/or the grant-funded program generally. One advisory board member related that *“this program here would benefit greatly if the administrative powers would have their project leader have less responsibilities [in addition to the grant]... And that’s my biggest comment to improve this whole program here at the college.”* Another summarized the experience as, *“it’s a college that’s putting together a lot of new programs around ag and trying to make it all work, and to the math and science department and it has a connection to the culinary program and there’s a lot-it’s starting a farm, I think there’s a ton going on and the last thing is reporting back to the committee.”*

Students also have felt challenged by unclear communications and expectation setting. For example, one student recalled *“we were made to believe we would be a part of that and that was going to be our perk, that future classes weren’t gonna get. We would get the experience of upstart... We didn’t even know it but they hired a vegetable planner- a vegetable manager, and an animal manager and they just made all those decisions, we weren’t even included in the conversation.”*

Students also have unmet expectations about the use of technology in their classes *“there’s none of them are in our agricultural program, none of our ag programs are computer...”*, the only technology the students described was *“some fancy-schmancy probes for labs that...[weren’t] applicable, you couldn’t use it on a farm...because I could never purchase that equipment to do my testing.”*

2. Student engagement – via alternative delivery

One of the successes of the KVCC program is how the program meets the student where they are, to get them ready to do what’s next, even when it’s different for every student. While the program is an improvement over more traditional offerings, the first year of programming encountered some challenges.

The stakeholders have very high expectations for the program and expressed frustration regarding logistics interfering with program delivery. As one faculty noted: *“we really wanted it spelled out as to what exactly they were going to be doing during their internship. And we want it to kind of match what their career goals are.... So it’s been a little problematic in the fact that most of the students have another job, so I was supposed to be meeting with them an additional 15 hours outside their 120 hours on the farm and I’m finding that it’s extremely difficult to do, because they’re all there at once, so that’s*

really the best time to do them but then that's cutting into the work time in that week and that's not going to work. So that was hard..., but I'm really wanting students to learn best management practices. And it's hard to control that, especially with our own farm because I'm not in control. No, but I think what they are doing is valuable. There is definitely some major improvements we would need to make, they would need to make for next year so yeah, it's a work in progress." KVCC administrators also express frustration with logistical challenges and see that there is a, *"Disconnect between academic governance to get new courses on the books."* And *"Self-employment means nothing on this particular TAACCCT...there's much more we can see that we can be doing with this that will be so much more marketable...that we can do non-credit and not worry about what's happening with that. It's like our hands are tied sometimes, but the actual programs are exactly KVCC-type high skills."*

The advisors recommend a more active engagement of students with the community so that *"we in the community get to hear a presentation by seniors or juniors saying, 'this is my senior paper,' because they are learning things we do not know."*

During the discussion group students described their challenges, especially regarding their internship at the farm.

"Being a part of a start-up [at the farm], was kind of very important to me because that's kind of what I'm wanting to do, and being able to take the information of what your purchases are, how do you extrapolate that over, across all of your different vegetable crops to arrive at a particular price point- for bok choy, for spinach, for carrots, or for whatever different crop- how do you extrapolate out their percentages of the total cost, because a lot of the things that you purchase is farm wide or it only hits certain parts of the farm. It would've been nice to have been involved with that pricing of, okay, how did they arrive at \$4 or something for half a pound of bok choy...because that's why I chose to do the internship here on-farm, because it's a school farm, so I'm thinking, okay there's gonna be more training in hand with what we're doing as we're going along, as opposed to if you're doing your internship on another farm, okay you're a hired hand, I will kind of teach you along the way-that's why I chose to come to the colleges farm, I figured it's going to be more of an educational, back and forth conversations in the learning process."

The frustrations expressed by students completing their internships on the KVCC farm led to several changes over the summer. Following a program retreat with key program stakeholders, the most significant change was described by the program manager as a realignment of the goals for the KVCC farm with an emphasis on education rather than production. The farm managers have been encouraged to work with the students to tailor their internship experiences based upon their own learning objectives and interests—rather than completing more elementary farm chores on a daily basis.

As shown in Table 12, many students cited "personal" as a significant or very significant barrier to this program as well as access to reliable and affordable transportation.

Table 12. Barriers, Significant + Somewhat

	Comparison n=9	Sustainable Agriculture n=12
Child/dependent care	33%	17%
Disability	11%	17%
Health	67%	17%
Personal	22%	42%
Transportation costs	78%	58%
Transportation reliable	44%	42%

The challenge of balancing personal barriers with academic pursuits is recognized by program leadership. Adjustments were made to the student advising system at the end of the spring semester as staff changes provided an opportunity to reconfigure the program manager role. Earlier in the year, the program manager was also responsible for providing student advising in addition to grant management. Program faculty members now provide academic and professional advising for all students—providing support with studying skills or accessing tutoring services. The program manager becomes involved with students when issues, such as financial constraints or family matters, arise that impact their ability to remain in the program. This tiered approach enables the program manager to prioritize her efforts towards students at risk of leaving the program while managing her other responsibilities.

3. Administrative challenges

Grant funded programs can often be a challenge to fit into existing systems and processes for any institution or organization. In this case, challenges have been felt on several levels. First, the spending rules do not always fit with existing processes. As one program staff person put it *“we have the state purchasing and then on top of that, the federal guidelines...and they do not line up. [The] poor [farm manager], to just get a tractor has to stand on his head...or a bolt...I need to go buy one bolt, is that okay?”* This challenge has been especially burdensome as KVCC staff and students strive to make the farm operational; critical needs arose and the purchasing guidelines limited the ability of the college to make immediate purchases. For example, student discussion group participants reported that one sheet of plywood was needed to complete a shelter structure for the farm’s swine however an immediate purchase of plywood was not allowed given the current guidelines.

At the outcome level, the desired outcomes of the grantee may not be the same as those of the grantor. As one KVCC administrator put it *“the problem is the DOL grant really want these people that come through any kind of program, certificate, whatever to get employed for good wages. Our students are not here for the great wages, they’re here for a quality of life and a type of lifestyle, and quite a few of them want a homestead. That means nothing to the Dept. of Labor, that they want to be self-employed.”* Another staff member described this disconnect as *“we’re training people to be successful, but we’re not training people to be successful within the metric of this grant, you know? They don’t want those jobs...because they’ve had better jobs, and that’s the fact.”* Finally, the students themselves voiced their desired outcomes as becoming more self-sufficient homesteaders and entrepreneurs during the discussion group session.

These challenges can leave program staff frustrated and disempowered. *“I wish I had never heard of TAACCCT, honestly...the good thing is we’ll get these programs off the ground, but honestly, I think the federal government wastes so much of our time with silly things like, you put in a budget, but you can’t spend any of that budget until we approve it again...that kind of stuff.”* The budget process has been a challenge for KVCC as they construct facilities for the new programs. *“The delay in time when you’re spending more than \$5,000. When you’re dealing with infrastructure development, which most of these programs are doing a lot of big equipment purchases...It’s a real drain on the process. Right now I am waiting on approval for fencing that we need to get in before we get frost and water and electrical. Our hands are tied right now.”*

Students too have been demoralized by some of these challenges. *“We’re having a lot of anxiety about it being accredited so that if we need to ..., we’re getting no information on where we’re at for it being accredited. Another question raised is what will this program prepare us to do for a job? I never got an answer on it and so far from hands-on stuff, the only thing we’ve been prepared to do is be a farmhand.”* Lastly, students are concerned about the lack of infrastructure that was ready for their summer internships. *“It’s ...electricity, you can’t do anything without it. I mean, we don’t even have a refrigerator on site so we can store our eggs.”*

4. Opportunities to connect students to community

Several stakeholders described the opportunity that KVCC and this grant-funded program have to connect its students with the broader community. Some of this, as described by one faculty member, has already been tested in Year 1 as a way to compensate for not having the KVCC farm operational in the first semester, and perhaps should be built upon *“even though we couldn’t do a whole lot of hands-on at the farms that we did visit, I also thought it was kind of important to introduce ourselves and our program to the community. Because most of the local agriculture producers know about the program, they might have varying degrees of involvement, whether they’re on the advisory board or what have you. And I also wanted to give the students a little bit of a realistic picture, so I took them to some farms that were kind of in tough shape, operating on a shoe string and then others that were kind of gentlemen farms.”* Students reported that field trips were very positive learning experiences during the first semester. One student elaborated, *“Those were some of the most educational experiences that we could have had. I can’t imagine what it would have been like not hearing other farmers, like he said, they start up, they go through that learning curve, they’ve been doing it for a while so they can pass on their knowledge. I can’t understand why that was cut off.”* Continuing to embed field trips and opportunities for that type of knowledge exchange between practitioners and students would be a relatively easy opportunity for improvement.

Another way that the program might connect with the community in the future is by giving the community an opportunity to learn from student accomplishments. One advisory board member suggested that KVCC *“make the program have, make a requirement of the program that there be a community presentation without prescribing that. Some form of engagement that isn’t just the steering committee that hopefully results in sharing results and that would hopefully be through student presentations, but it doesn’t have to be, so that businesses in the area learn about the program.”* This

type of interaction could also enhance KVCC's relationship with area employers and provide students with networking opportunities for career development.

5. Build on infrastructure established in past year – problem based learning

Various discussion group participants voiced concern and frustration with the construction of the farm while the Sustainable Agriculture program was launched. A faculty member expressed concern about the safety of the existing buildings for both students and livestock as well as biosecurity and hygiene concerns. As one expressed *"It was supposed to be that the farm was up and running and the farm definitely was not up and running. There were buildings that were uninhabitable and unsafe... and so it was not a lot of hands-on kind of learning that first year. It had to be more like tours..."*

Building the infrastructure as the program was implemented caused concern for some. As one faculty member described *"we don't have the infrastructure set up where we're ready to take care of the animals. You know, we're doing it on a shoestring and it's definitely not done the right way and I mean we're lugging buckets to feed cows, to give water to cows that are out in the field, cows drink A LOT of water and we're lugging buckets by hand through the fields and that's a lot of trips for buckets."* But the concern wasn't just for the inconvenience or extra work, but for the safety of the students and animals *"There is no controlled access to the farm, it's kind of off the main highway so people could have access to the farm but there's no gates and you've got, you know, young animals there that somebody there could just go in and take, there's no security... the IACUC policy program that we talked about, you know what exactly are they going to be doing if an animal is injured or you know, needs to be euthanized, what's the protocol, and there is none..."* Since this interview, some progress has been made towards creating an Institutional Animal Care and Use Committee (IACUC) for the KVCC farm, but it remains a work in progress.

When problem-based learning was employed, students responded positively. One student described his experience as, *"I was worried, I was worried that I wasn't going to pass a test or anything because I was like, 'Man, we've been talking through the whole classes and, you know, it's awesome, you know I'm learning a lot' and when the test time came around I knew the answers because they were actually what we had been talking about. You know? Totally different way of learning. But it worked."*

While two of the classes received exceptional ratings by students, the other four classes were rated inconsistently (Tables 13 and 14). Overall "excellent" ratings for these four classes were much lower than the other two (described above), ranged from 33% excellent to just 14% excellent. These courses appeared to be inconsistent, getting moderate to high ratings for clarity of explanations and willingness to recommend the course, but generally poor ratings for class and lab organization. Despite these inconsistencies, most students in the course would recommend each of these courses.

Table 13. Percent of students in each inconsistent class who agree or strongly agree with each statement.

	Agr110 n=9	Agr112 n=7	Agr114 n=8	Bio108 n=16
Course improved my understanding of concepts in this field	78%	86%	75%	81%
I understand the methods of evaluation used to grade my work	89%	57%	63%	75%
The textbook contributed to my understanding of the course	67%	57%	43%	50%
Course activities and assignments helped me learn	78%	76%	88%	75%
The course was well organized	56%	29%	25%	50%
My instructor's in class explanations helped clarify course material	89%	86%	75%	75%
Concepts were presented in a manner that helped me learn	89%	74%	88%	75%
The content of this course was consistent with course objectives	67%	43%	50%	60%
Syllabus clearly stated the course objectives, etc.	67%	43%	63%	71%
I would recommend this course	100%	86%	88%	75%
Lab manual/ handouts were valuable resource	56%	--	50%	69%
Working in a lab group was a valuable learning experience	56%	--	67%	73%
Lab expectations were adequately explained for each lab	56%	--	50%	50%
Lab sessions are well organized	44%	--	33%	34%
Lab contributed to my learning	56%	--	50%	69%
Lab experience supported the lecture topic	67%	--	50%	75%

Table 14. Overall course rating of inconsistent courses

	Excellent Rating
Agr110 (n=9)	33%
Agr112 (n=7)	14%
Agr114 (n=8)	25%
Bio108 (n=16)	31%

A farm operation offers a plethora of problem-based learning opportunities for Sustainable Agriculture students, ranging from managing livestock and improving farm buildings to determining prices and identifying markets for farm products. Student discussion group participants identified potential “problems” that could be appropriate vehicles for problem-based learning, including setting a rationale for pricing farm products, developing relationships with potential accounts, and researching what breeds of livestock should be raised on the farm.

As these opportunities are recognized, students may see the opportunities rather than the frustrations, but after one year they recognized that *“there’s no funding around that they have at their fingertips to get the stuff that we need.”* They also were disappointed at what they see as missed opportunities in the first year, such as a class project *“where we were to design a walking trail that essentially went from this barn straight across that field that’s not going to be used because it’s too wet... We were presented that as if it were actually going to happen, one or a combination of some was going to be chosen to have that be completed. And we were like, ‘Well great, because that’s a long walk otherwise.’ That’s not happening.”* This was frustrating, but then the summer interns noticed that *“there was a guy here last week that came on one of the off days and he was here, up at the corner of this building, and he’s laying out a trail... problem-solving and stuff is I don’t feel like we’re being taught stuff here.”*

One administrator summed up the first year as *“there’s so much opportunity and the vision is so wonderful for this program, but this is an institution as a whole- outside of this one program it’s in so much transition... That I think it’s really difficult to navigate that (shifting vision) and actually really feel like you’re getting stuff accomplished and feeling the tension of... this grant says one very specific thing, and I buy into the larger vision beyond that...”* The Culinary Arts program (planned for Fall 2014) as *“anybody’s guess right now. Hoping for an entrepreneurial spirit to it by aligning to the farm. Farm to Table is something that we can walk the walk. Open door for where folks can go. Don’t fall into only what the labor market wants. We can’t predict what folks are going to do and that our grads could surprise us.”* But in more pragmatic terms for the future,

“I think the culinary will stay a 2-year program, I think the 1-year certificate might also expand and have a baking specialty certificate, so I think that will be a rather traditional program, but I think it’ll move to the business dept. where most culinary programs are housed... won’t be a math/science. I think agriculture is probably going to still have a 2-year degree, because it’s needed in the state... and I think the certificates like the vegetable production, the non-academic certificates of completion are going to take a much larger role with this whole agriculture... because we dreamed of being an agricultural hub where people come to learn and share, and I think much of that is going to have to be non-credit... come in for a Saturday, these people don’t want to come in for 15 weeks.”

Another possibility for the future might be *“Our infrastructure really would speak to and support an incubation project...”* As the physical farm infrastructure continues to be developed, KVCC can focus more on the unique opportunities for the farm itself and the programs to meet community needs while providing valuable practical and technical learning experiences for its students.



Recommendations

Kennebec Valley Community College's experiences in developing and delivering the new Sustainable Agriculture program over the past year have highlighted areas of strengths that should be continued as well as areas for improvement that should be considered in the future. These recommendations fit into three main categories: 1) Community Engagement, 2) Communication and Expectation Management, and 3) Curricula and Programming.

1. Community Engagement

All stakeholders connected to the Sustainable Agriculture program, whether internal or external to KVCC, who participated in the evaluation shared their enthusiasm for the program. KVCC has taken positive steps towards engaging the local and regional agricultural community in the development of the program and should continue to do so. It also can intentionally engage members of the internal KVCC community to cultivate stronger connections between students, faculty, and administration.

- Continue engaging local and regional agricultural community stakeholders through the Advisory Board
- Present students and community stakeholders with examples of successful role models and eventually program graduates
- Continue to promote opportunities for women farm operators as they are currently underrepresented in the program's current student cohort
- Provide students with concrete examples of potential jobs and salary ranges while also highlighting the potential benefits of homesteading
- Address staff turnover issues to provide stability for the program
- Create opportunities where program faculty, students, and community stakeholders can share knowledge, grow networks, and celebrate success together

2. Communication and Expectation Management

Improving communication and managing reasonable expectations between all parties will help KVCC more fully realize the potential of this new program. The majority of frustrations voiced during the interviews and focus groups can be effectively addressed through implementing more intentional and consistent communication strategies. Improvements in this area will increase student satisfaction as well as broaden the awareness of the program in the community.

- Create communication channels between all stakeholders (newsletters, regular meetings, community presentations)
- Increase communication and outreach efforts through regional career centers to promote KVCC programming
- Understand and address student questions, doubts, and concerns early on to improve program retention
- More intentional communication with students will strengthen the program's ability to more fully integrate problem-based learning into the curriculum
- Provide students with an understanding how their problem-based learning efforts contribute to farm decision-making and operations

3. Curricula and Programming

It is clear that the Sustainable Agriculture program fills an important niche in the local and regional agricultural education arena. Progress towards the three goals of alternative program delivery, innovative use of technology, and problem-based learning was made during the first year. As the program continues to mature, strengthening these elements will make this program distinctive in its blend of applied learning and appropriate technology.

- Continue professional development for faculty in problem-based learning and further integrate problem-based learning into the course offerings
- Recognizing the varied backgrounds of the student cohort, faculty may consider applying Universal Design for Learning (UDL) principles in course design and assessment
- Maintain a balance of exposing students to “high-tech” and “low-tech” agricultural technology that can be applied in a variety of farm settings—from homesteads to large commercial operations
- Ensure quality and consistency of the Sustainable Agriculture lab courses. Continue to assess courses and instructors, with special attention given to lab courses which have more opportunity to address students' interest in hands-on learning and will be invaluable as the focus shifts to problem-based learning in the future.
- Address any remaining safety and hygiene concerns about the farm facility in the short term by improving basic farm infrastructure and adopting policies that enhance safety and biosecurity for humans and livestock
- Enhance the problem-based learning opportunities for students in courses and on-farm internships through more intentional learning experiences that relate directly to decision-making, improvements, or planning efforts.

