AGRICULTURE & NATURAL RESOURCES PROGRAM

MAUI COMMUNITY COLLEGE

INTRODUCTION: MISSION & VISION STATEMENTS

Maui Community College is a learning-centered institution that provides affordable, high quality credit and non-credit educational opportunities to a diverse community of lifelong learners.
We envision a world-class college that meets current and emerging Maui County education and training needs through innovative, high quality programs offered in stimulating learning environments.
The College mission, goals, and actions will be guided by the Native Hawaiian reverence for the ahupua`a, a practice of sustaining and sharing diverse but finite resources for the benefit of all.

In keeping with the mission of MCC, the Agricultural & Natural Resources program provides instruction for those wishing training, retraining, or skills upgrading in the fields of agriculture, horticulture and natural resource management and for those wishing to transfer to a four year college or university. Therefore the vision statement for the Agriculture and Natural Resource Program mirrors that of the college:

We envision a program that will provide high quality instruction in agriculture, horticulture and natural resource management with an emphasis on sustainability.

Our Program SLO's are based on Ruth Stiehl's model or having three to five overarching SLO's. We also wanted to have some consistency with the agriculture program at Hawaii Community College. Of course we also meet the General Education SLO's for the campus (formerly COWIQ's). We have developed the following SLO's for a graduate with an AAS in the Agriculture and Natural Resources program:

Use basic business principles to manage projects or design a horticultural business enterprise.

Recommend cultural practices, solve problems, plan projects, and cultivate horticultural crops in a sustainable manner based on sound biological and technological principles.

Explain the relationships between agro-ecosystems, economics, human culture, and natural environments.

Design gardens that demonstrate aesthetic principles. (Landscape & Horticulture only)

These SLO's will need to be industry validated in 2008-2009. (Our course SLO's were examined in 2006-2007 by our Advisory committee and no changes were suggested at that time.) There was some discussion between MCC and HCC about having a uniform validation by Farm Bureau or other outside industry group but this may not be practical. Advisory committees can be used as a validation body if this proves to be the best method.

PART I QUANTITATIVE INDICATORS

DEMAND

1 & 2. New and Replacement Positions

Program	Annual New and Replacement Positions STATE	Annual New and Replacement Positions COUNTY
AGRICULTURE	1	0

These data are definitely not just suspect but obviously wrong! Thousands of folks are employed in farming in the state of Hawaii. Not even taking into account landscape maintenance and golf courses; HC&S, the seed corn companies and independent farmers in Maui County alone clearly replace more than 1-0 people per year. It may be best to look at the data supplied for last year's program review as shown below:

Despite recent layoffs by Maui Land and Pine, there are definitely many folks still working in the Agriculture sector. Note that the positions listed above also may only reflect many of the traditional jobs in farming, farm supply government "agriculture" jobs, and multinational companies such as Monsanto, and not even record employment in landscaping and many of the jobs in Natural Resources related careers. Therefore it is a safe bet that there are many, many more jobs available than there are Agriculture and Natural Resource program majors.

3. Number of majors

Agriculture & Natural Resources	Fall 2005	Fall 2006	Fall 2007
Number of Majors	34	31	37

Obviously we would like to have more majors but the number has remained stable over three years from a low of 18 in 2004 and increased slightly this past year.

4. Student Semester Hours for program majors in all program classes

Agriculture & Natural Resources	Fall 2005	Fall 2006	Fall 2007
SSH Program Majors in Program Classes	134	113	80

Program	Current Positions State	Current Positions Maui	2005-11 Add'l State Jobs	2005-11 Add'l Maui Jobs
Agriculture & Natl Resources	10,896	2,208	2,459	438

This number

has gone down over this past year but I believe it reflects a number of majors nearing completion of degrees in 2006 & 2007 so these students were taking less Ag courses and more core courses.

5. Student Semester Hours for non-program majors in all program classes

Agriculture & Natural Resources	Fall 2005	Fall 2006	Fall 2007
SSH Non-majors In Program Classes	93	98	113

The number of non-majors taking agriculture classes has steadily increased. This is in part probably due to having AG 200 both count as a Natural Science lab course (Environmental Awareness) for liberal arts majors and a writing intensive class.

6. Student Semester Hours for all program classes

Agriculture & Natural Resources	Fall 2005	Fall 2006	Fall 2007
SSH In all Program Classes	227	221	193

This decrease in SSH in all program classes reflects the lower number of SSH by major and I believe also reflects the low unemployment rate in our field in those years. Fewer folks in our industry were coming to school because

of the high demand for labor. Since this industry needs labor to survive, employers were willing to take people with less training thus lowering the demand for education in agriculture and horticulture.

7. FTE Program Enrollment

Agriculture & Natural Resources	Fall 2005	Fall 2006	Fall 2007
FTE Enrollment in Program Classes	15.13	14.07	12.87

This data is essentially the same as the previous table as it is the SSH in all program classes divided by 15. See discussion above.

8. Number of Classes Taught

Agriculture & Natural Resources	Fall 2005	Fall 2006	Fall 2007
Number of Sections Taught	6	8	8

In Fall semester 2007, four of these courses were taught at the main MCC campus, the remainder in Molokai.

9. Program Health

Healthy Cautionary Unhealthy

EFFICIENCY

10. Average Class Size

Agriculture & Natural Resources	Fall 2005	Fall 2006	Fall 2007
Average Class Size	13.33	9.63	10.88

Average class size, although not high, was slightly over 10 students.

11. Class Fill Rate

Agriculture & Natural Resources	Fall 2005	Fall 2006	Fall 2007
Fill Rate	81.63	56.62	54.04

Since our classroom in Ag 104 seats 24 we use this number as our class maximum even though 15-18 students for the kinds of lab work we do is actually the maximum that makes the most effective learning. If we lowered our maximum on Banner to 18 or less this would dramatically alter this number. We don't do this because occasionally we do get 20+ people wanting a class and I would not want to deter folks from registering. This number reflects room size more than true efficiency.

12. FTE of BOR appointed program faculty

Agriculture & Natural Resources	Fall 2005	Fall 2006	Fall 2007
FTE BOR appointed Faculty	0	0	2

One faculty is located at the Kahului campus, one is located on Molokai.

13. Student/Faculty Ratio

Agriculture & Natural Resources	Fall 2005	Fall 2006	Fall 2007
Majors/FTE BOR Appointed Faculty	0	0	18.50

14. Number of Majors per FTE faculty

Agriculture & Natural Resources	Fall 2005	Fall 2006	Fall 2007
Majors/ Analytic FTE Faculty	34.00	22.14	29.13

15. Program Budget Allocation (Personnel, supplies and services, equipment)

Agriculture & Natural Resources	Fall 2005	Fall 2006	Fall 2007
Program Budget Allocation	C/P	C/P	C/P

16. Cost per Student Semester Hour

Agriculture & Natural Resources	Fall 2005	Fall 2006	Fall 2007
Cost per SSH	C/P	C/P	C/P

17. Number of classes that enroll less than ten students

Agriculture & Natural Resources	Fall 2005	Fall 2006	Fall 2007
	2	3	6

Two of the low enrolled sections occurred in Fall 2007 at the Kahului campus. One class enrolled 9; the other low enrolled class was a one credit 92U course. The other four of the low enrolled courses were on Molokai. This high number may be due to the offering of many one credit "module" type courses.

18. Determination of program's health based on Efficiency (Healthy, Cautionary, or Unhealthy)

EFFECTIVENESS

19. Persistence of majors fall to spring

Agriculture & Natural Resources	2005	2006	2007
Persistence (Fall to Spring)	67.65	61.29	45.95

We had a clear drop in persistence this past year from Fall to Spring. I believe this was due in a large part to the high rate of employment by students. Labor was in high demand and students were being asked to work overtime by employers to make up for lack of labor. This put many demands on the students so many were unable to meet the obligations of both school and work. I had many students who expressed that they were just too busy to continue to take classes.

20. Number of degrees and certificates earned (annual)

Agriculture & Natural Resources	2005	2006	2007
Number of Degrees Earned	0	6	3
Number of Certificates	0	0	0

Earned			

Number of Degrees earned per major has always been low because many people who are agriculture majors are already working in the field not very interested in actually obtaining a degree. Rather they take only the courses that benefit can benefit them in their job or business. Also many actual degree seekers are part- time so they take many years to obtain a degree so numbers are low in any given year.

21. Number of students transferred (enrolled) to a four-year institution

Agriculture & Natural Resources		**2005**	**2006**	**2007**
Number Transferring (to UHM, UHH, UHWO)		**2**	**1**	**0**

Due a decrease in acceptance of AG 100-200 level courses to the equivalent course at UHM or UHH that is 300-400 level, transferring to a sister UH college to achieve a BS in agriculture is less attractive to students who are close to or have graduated. Traditionally the transfer rate has always been low since so many students in this major are non-traditional and tend to be “place-bound”.

22. Perkins core indicators

1. Academic Attainment (1P1)

2. Technical Skill Attainment (1P2) *
3. Completion Rate (2P1)
4. Placement in Employment, Education, and Military (3P1)
5. Retention in Employment (3P2)
6. Non Traditional Participation (4P1) *
7. Non Traditional Completion (4P2) *

Performance Summary 2006-2007 Actual Performance Levels (Shaded cells indicate program met and/or exceeded State Adjusted standards)							
Programs	1P1(81.87)	1P2 (90.42)	2P1(38.17)	3P1(71.07)	3P2(92.00)	4P1(14.60)	4P2 (12.19)
AG	88.89%	90.00%	20.00%	100.00%	100.00%	39.39%	50.00%

The program meets 5 of the seven Perkins benchmarks. The 1P2 benchmark was only missed by %0.42.

23. Determination of program's health based on effectiveness (Healthy, Cautionary, Unhealthy)

PART II. ANALYSIS OF THE PROGRAM

I feel that the strength of our program is reflected in its effectiveness. Some of this is reflected in Perkins data – we have many non-traditional students, students – both graduates and folks who take courses attain the skills they need to be effective on the job. The vast majority of our graduates in my 20 years here are out working in this field – and are quite successful.

Much of our strengths are not able to be reflected in this data. Time and again I run into former students who express to me how much they learned and how much it has helped them be better employees or expand their business. We are also able to supply another aspect of "community" to this college because our program brings folks onto this campus who would not otherwise be here. Outreach with our pumpkin patch to K-3, AG awareness day, as well our public pumpkin patch, plant sale and "farmers market" at Pa'ina, services the community and gives a positive face to MCC.

We have a wide array of class offerings that try to service our particularly diverse and un-centralized industry. By taking a look at the exhibitors and activities at our bi-annual Agriculture awareness day, it is obvious that our program is blessed with many willing

industry, government and agencies that can provide expertise, educational opportunities well as employment for students. We are able to partner with CTAHR, HDOA, USDA with various activities and grants as well as our own Hawaiian studies and Administration of Justice programs.

We also have a dedicated staff which not only make the classes meaningful, but make these additional activities possible and who also participate in other industry/community related service.

Over the years there has always been a constant demand for trained people in the horticultural field. In the past two years there has been a shift in interest toward sustainable food production. This is expressed as an increase in awareness and demand for locally grown produce by the public and a dramatic increase in this election year of political interest in this issue. Arising from this has been more students interested in the sustainable crop production courses and degree.

Landscape horticulture has somewhat faded from common conversation; however the boom in construction produced a huge boom in the landscaping industry. Unlike construction however, once a landscape is installed it still needs constant maintenance, so many jobs in this industry will remain during a slump. Because of the many benefits including energy conservation and other “green” aspects of landscaping, I expect this industry to keep growing in Hawaii. Natural resource management will also keep expanding.

Our weakness is in public awareness of the opportunities in agriculture/horticulture/natural resources. Agriculture/ Natural Resources has not been a glamour field nor one which pays a lot of money per the amount of work required. People only come to this area if they really love plants, the environment, working outdoors and are academically inclined toward science. Recruitment has always been a challenge and this is shown in the demand indicators and therefore reflected in efficiency indicators. When examining retention numbers it must be remembered that these reflect high numbers of working adults that have limited time resources for school and an academically challenging program. Another point in these indicators is that while Molokai branch improves the overall number of majors, it also can reduce the efficiency numbers. Since the island has a small population the numbers taking classes in Ag are often low (as they can be on Maui too).

Overall I believe that academically we have a strong program that provides valuable training. The downward shift in the overall economy will have perhaps an initial negative impact on our industry. The flip side is in economic downturns, we have seen people coming back to school to increase their employability. With the political and public support for conservation, sustainable ag production, locally grown food, eco-sensible landscapes and STEM based careers, I believe the Agriculture and Natural Resources program is an important niche in the overall educational mission of MCC. We may never be a large, “powerhouse” program but I feel we serve an integral portion of our Maui and State of Hawaii community.

Significant Program Actions

-In this past year the ATP for the "Malama Ahupua'a" or Natural Resources pathway was approved. As part of this process new curriculum was also approved, AG 265 *Horticulture of Hawaiian Plants.* This course will be taught in Fall 2009.

-We held our bi-annual Agriculture and Natural Resources day on February 21. It was a great success with over 200 high school students attending and many, many vendors and activities. This time we had Seabury Hall and Kamehameha science students attending as well as the Ag & Natural Resource pathway students from Lahainaluna, Maui High, Hana High and King Kekaulike.

-We purchased a turning point system for our classroom. I did a bit of testing with it on two classes in Spring 2008. I am using it more comprehensively in AG 200 this fall. It provides engagement by the class and they seem to enjoy it. Most importantly it gives instant assessment of the material that is covered allowing the instructor to go over immediately those concepts that it is clear much of the class missed. More work needs to be done to place more questions within lectures and to create quizzes using this system. Developing turning point slides is initially a time consuming process but it will be worthwhile for several of our Agriculture classes

-A wireless connection has been installed in AG 104. Botany 105 uses it regularly and I will be using more toward the end of this semester in Insect class.

-We successfully used the laptop cart in two different courses in AG 104. This was a great way to use a general lab space and turn it into a computer lab. It came in very handy on those few occasions when I really need to get everyone on a computer. This cart provided a convenient, flexible learning tool for us. In the future this will be more powerful as we can use the wireless connection as well.

-Whenever our programs intersected, we assisted the SLIM director. We provided plants, tools and tours for various seminars and visiting groups. SLIM was able to coordinate a vermiculture exhibit at Agriculture and Natural Resources day.

-Working closely with our marketing director to promote our particular program was not possible this past spring as she was very busy updating the MCC web page. We did assist her on our portion and when she asked the campus for successful graduates I provided her names and locations right away. Hopefully there will be time and direction given to increase promotion for individual programs particularly the smaller programs at MCC.

Part III. Action plan

- The past data and experience shows that jobs in Agriculture and Natural Resources fields are available in Maui County and the State. Perkins data indicates that our program is diverse and meets the majority of success benchmarks. Our academic curriculum is strong and always seem to align with industry needs and other similar

programs. Our difficulty is and always has been in getting enough students into the program. So promotion and recruitment is important. As a single faculty program it is difficult to focus on everything – quality instruction, assessment, curriculum, student advising, creating income streams, AND recruitment into an academically challenging, moderate paying (although very rewarding) educational and career choice. So once again I would humbly ask that if there are college wide resources in marketing and promotion that these be directed more pointedly toward some of the smaller programs that seem to need this attention the most.

-With the shift in the economy and interest in locally produced food and the environment, this year attending more traditional college fairs and community activities will be more attractive and hopefully will give better recruitment results than the past few years. For example we plan to attend MCC unmasked, the Hawaii C&C Fair and attend high school recruitment days. We also plan to participate in career shadowing this coming year.

-We will work cooperatively with other Agriculture groups. We will be offering a course for USDA Farm Service Agency – they are providing funding for tuition and QuickBooks software. We plan to work with CTAHR to set up a display for Smithsonian Key Ingredients event on campus. We plan to work with Farm Bureau on their spring Farm Fair. We plan to attend Arbor Day and provide soil pH testing to the community. All of these events are ways of being visible to the community and provide recruitment opportunities.

-This Fall we will be working on curriculum adjustments. We will be changing our AG 290 entrepreneur course into an internship through the co-op program. Now that the new liberal arts requirements are in place, I want to work through the process and try and get more AG courses that are appropriate accepted as environmental awareness. I have found that bringing more non-majors into our classes, although doesn't necessarily create more agriculture majors, does often get students interested and these students take a few more agriculture courses as electives. We will also be working closely with Hawaiian Studies and Administration of Justice on the curriculum for Natural Resources ATP.

-We will continue to try and get an agreement between MCC and the OSU e-campus to bring an online B.S. degree in general Ag that will benefit our recent and past AAS graduates.

- We will industry validation of our SLO's.

- Work with the UH Foundation director to acquire funding for the Agriculture and Natural Resources Day to be held in Spring 2010.

Part IV. Resource Implications (physical, human, financial)

-Our Physical plant is in fairly good shape because of the investment by the college into our greenhouse with re-skinning and new bracing. We have used grant money to replace our old rotting wood benches as well. We have used plant sale and vegetable sale monies to purchase new computers and teaching technologies such as turning point as well as hand tools. And we also use this money to buy all of our various supplies – soil, pots, chemicals, fertilizer, irrigation parts, seed etc. as well as instructional supplies such as videos and books.

-Because the only G funds we receive from the STEM department is in office supplies, we need to continue to create revenue. In addition to our regular Christmas Plant Sale, we may be able to sell flowers in Spring 2009. Swap meet sales of potted plants may also be a possibility. Swap meet hinges on human resources available for selling.

-With tightening budgets, there is a concern that student help money may not be available. Since we have living materials, grounds and facilities we have to take care of, as well as growing labs, we do rely on having student help to get many things done.

-On an instructional level, our current faculty member and ATP, along with an occasional lecturer, is able to meet class demand.