AGRICULTURE & NATURAL RESOURCES PROGRAM

MAUI COMMUNITY COLLEGE

I. 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.

Over this past year we have re-evaluated our program SLO's. Based on Ruth Stiehl's model as well as the SLO's developed by Hawaii Community College Agriculture, our current SLO's for a graduate with an AAS in the Agriculture and Natural Resources program are as follows:

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*)*

II. Quantitative Indicators

Demand

1& 2. Career Demand in county and State

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

3. Number of majors

Program	F01	F02	F03	F04	F05	F06
Agriculture & Natl Resources	**35**	**31**	**26**	**18**	**34**	**31**

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

Data unavailable at this time.

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

Data unavailable at this time.

6. Student Semester Hours for all program classes

Course Alpha	F01	F02	F03	F04	F05	F06

AG	**184**	**235**	**202**	**152**	**254**	**228**

7. FTE Program Enrollment

Course Alpha	F01	F02	F03	F04	F05	F06
AG	**12**	**16**	**13**	**10**	**17**	**15**

8. Number of Classes Taught

Course Alpha	F01	F02	F03	F04	F05	F06
AG	**6**	**12**	**8**	**4**	**6**	**8**

9. Program Health

Healthy Cautionary Unhealthy

Program	Enr	Seats	Fill Rate
Agriculture & Natl Resources	77	170	45.3%

Efficiency

10. Average Class Size

Course Alpha	F01	F02	F03	F04	F05	F06
AG	**16**	**12**	**12**	**21**	**13**	**10**

11. Class Fill Rate

12. FTE of BOR appointed program faculty

Data not available.

13. Student/Faculty Ratio

Data not available

14. Number of Majors per FTE faculty

15. Program Budget Allocation

Data not available. Educational supplies and equipment are self-financed by the program via plant sales and foundation funds.

16. Cost per Student Semester hour

Data not available.

17. Number of classes that enroll less than ten students

No. Classes under 10 Enr.	Pgm	F04	F05	F06
Agriculture	**AG**	**1**	**4**	**5**

18. Determination of Program Health

Healthy Cautionary Unhealthy

<u>Effectiveness</u>

19. Persistence of majors fall to spring

Persistence of Majors (F to Sp)	**Major**	**F04**	**F05**	**F06**
Agriculture	**AG**	**90.48**	**67.65**	**61.29**

Majors per FTE Faculty *(Cr. Offered/15)*	**Pgm**	**F04**	**F05**	**F06**
Agriculture	AG	0.53	1.20	1.47

20. Number of degrees and certificates earned

Certificates and Degrees Earned

Program	**2000-01**	**2001-02**	**2002-03**	**2003-04**	**2004-05**	**2005-06**	**CA 05-06**	**Deg 05-06**
Agriculture & Natl Resources	**1**	**5**	**4**	**5**	**0**	**6**	**2**	**4**

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

Data not available.

22-28. Perkins data

Perkins Standards

Program	**1P1 Acad Achieve**	**1P2 Voc Achieve**	**2P1 Comple-tion**	**3P1 Place Emp/Ed**	**3P2 Retn Employ**	**4P1 Non-Tradl Parti**	**4P2 Non-Tradl Cmpltn**
Agriculture & Natl Resources	**100.0%**	**100.0%**	**50.0%**	**n/a**	**n/a**	**45.7%**	**80.0%**

29. Determination of program's health based on effectiveness

Healthy Cautionary Unhealthy

III. Analysis of Program

Demand

Employment demand for agriculture and horticulture remain very high across the State and County of Maui. Some of this demand is for unskilled labor but the demand for people with training is also very high. Ironically, this high demand for workers in this sector coupled with low unemployment, I believe has the effect of fewer students in the Agriculture program. Employers will "settle" for less educated employees providing less incentive for potential students to attend college. In addition, since many of our students are non-traditional and work full or part time, they are being asked to work long hours for their employers making it difficult for them to attend class, study or successfully complete class or degree programs. Since a strong work ethic and loyalty to an employer are important life values – it can be difficult as a teacher to ask students to focus on school at the expense of the paying work. Nevertheless because job demand is high in Maui County (458 additional jobs in the next 5 years), it is important to provide affordable and accessible training in agriculture and horticulture. In addition, the listed jobs in this data do not account for the jobs in the Natural Resources sector that our students also find employment or are already employed by.

After a slight dip in majors and FTE students in '04 the number of majors has held fairly steady. The number of courses that are taught is also constrained by the low number of faculty (1 on Maui & 1 on Molokai) so this does limit the variety of classes offered in any one year and concurrently limits enrollments compared to when 2 faculty were housed on Maui. Currently most of the courses are offered on an every other year basis. Certainly our weakest link is attracting students into the program or to take our classes. It is hoped with a new marketing director for MCC, that one major focus can be to help the smaller programs market themselves. First we need more awareness by the public and employers that we exist, that the Agriculture and Natural Resources program is much broader than "row-crop farming", that it is a technical applied biological science based program, and that courses can be taken for training purposes without the need to have getting a degree as a goal. As the

majority of marketing has fallen upon the coordinators, which in small programs such as Ag may be the only faculty with many teaching and other responsibilities and probably no expertise in marketing, the need and value of having professional marketing is very high. Attracting students into this area is a challenge not just at Maui CC but also for our colleagues at the High Schools and other community colleges.

Efficiency

Clearly we had an increase in smaller classes in '06. I believe part of this was due to the surge in the economy and low unemployment. Since our room seats 24, that automatically means we had a low fill rate. However, since we have a semi-dedicated room for Agriculture, a smaller agriculture class does not affect other programs – i.e. we are not using a room that might otherwise be used by a larger class. At the same time our majors per FTE faculty increased.

One aspect of efficiency not part of this quantitative analysis is that our program is able to raise practically all our supply money through various plant or vegetable sales. Supply and equipment wise we are an expensive program, however we have not used G funds for supplies for many, many years. This allows the supply money G funds allocated to the STEM division to be used by others in the division.

We also have been part of two USDA grants that have allowed us to pay for student help. This is important since we have an extensive area to maintain and we need to raise crops for funds. We have also been able to use this grant money to support lecturers. So in this aspect I feel the Ag department has been able to demonstrate efficiency.

Effectiveness

Our persistence data is very similar to that of other programs at Maui Community College. The number of students that obtain degrees does fluctuate – even though we do not have an official "cohort", since we teach most of our classes on an every other year basis often we do have the effect of groups of students graduating together in cycles – for one or two years we have several graduates that started together graduate followed by a year with very few graduates. Our number of graduates is

on par with many of the smaller programs that also provide in-service training. Many of our students already work in the industry and do not graduate – they take only the courses they need. They do not show up in this effectiveness data. Much of our Perkins data meets targets.

We have also made AG 200 Introduction to Horticulture a Writing Intensive course. This aligns with UHM Hort 200. It makes the course more attractive for non-majors to take as their natural science credit. So we are providing both a WI and a Natural Science credit for non-ag majors. As a difficult course both academically and in writing (research papers – not informal writing) it is not the most popular of the elective courses but it does bring some students into our program that might not otherwise learn about agriculture.

Another area of effectiveness not reflected by numerical data is our outreach to the community. Our pumpkin patch sale, the Christmas plant sale, and our Agriculture Awareness days all bring in the community on to campus. We often receive publicity in the paper which helps promotes the college. Community people often come to us for advice. So we interact in our official capacity with more folks than those just formally enrolled as students.

Our week long pumpkin patch outreach program to preschoolers and grade school children has been very effective. It brings young children into the field and exposes them (and quite a few parents) to agriculture and natural resources in a fun interactive way. In Fall '06 we had about 200 children go through the program. It also builds a relationship with teachers and schools. Why bother with young children? They will be our students some day and we hope that a few of them will become interested in biological sciences in the future..

<u>Significant Program Actions – results of last action plan</u>

1. The high school agriculture teachers and MCC Ag have set the Agriculture and Natural Resource Awareness day for February 2008.

2. We were unable to develop a tissue culture lab in conjunction with Baldwin H.S.. Unfortunately this did not work out. After looking at the cost/benefit of doing our own stand-alone lab, we decided to use the money instead to replace our aging and decrepit benches in our

greenhouse. Since our entire greenhouse has been updated it seemed like the best use of funds. The new benches will allow students to carry out projects and our program to be able to produce more quality product so we can support ourselves and demonstrate entrepreneurship. It updates our greenhouse closer to industry standards. These will be installed in Spring 2008 after our December plant sale. When the new microbiology lab is up and running, we can use some of their equipment and purchase some small items and do some tissue culture propagation on a small scale for students. Our lecturer for Plant Propagation will probably be able to assist us in developing the lab curriculum for this.

3. The USDA CREES grant has allowed us to work at exploring offering a degree more focused on Natural Resources. We have put together an Authorization to Plan proposal for a very interdisciplinary degree. We have also developed a new agriculture course which is in curriculum committee this Fall '07.

4. We have continued to adhere to a 2-year rotation of classes. There is still some difficulty deciding which courses to offer that are on a 3-4 year cycle. For instance, since there seems to once again be more interest in production we have offered Sustainable Crop Production instead of Greenhouse and Nursery Production. We usually offer Plant Propagation on this longer cycle. We did offer this course Spring '07 – we had many, many requests for it, many inquiries – but unfortunately too few students enrolled and it was cancelled (taught by a lecturer). When we asked the potential students why they never actually enrolled, they all sited that they were just too busy at work and wanted to take it "next year when things slow down". So despite having more than enough students who expressed the desire to take a particular class, our predictions do not always pan out even when we have strong evidence that a class will fill. The particular instance above was evidence that the strong labor market affects our program. The 2-year rotation does make it easier to advise students. The disadvantage comes into play when a class that does come up does not fill or when a small group wants a class for some in-service training on an "off" year. However overall I think this schedule works to strengthen the program and get more students to complete a degree or certificate.

5 &6. We met with our counterpart at Hawaii Community College to look at their SLO's and assessment methods. We wanted to have at least some consistency with the other agriculture programs. We have been in close contact with our assessment coordinator and have updated our program SLO's based on ours and HCC original SLO's. These are a work in progress – and are open for change if necessary for better assessment or to reflect industry needs. Course SLO's may also need some fine-tuning. There are many comprehensive projects with which to assess students; just developing valid assessment tools is still something we need to work on. Due to conflicts with Saturday labs and assessment workshops, unfortunately I was unable to attend the spring assessment series.

III. Action Plan

1. Hold the Agriculture and Natural Resources Awareness day in February 2008. Provide each high school student with MCC Ag "packet" at the start of the day as a recruitment tool.

2. Purchase or obtain Turning Point system and begin using in Spring 2008. This system used with PowerPoint can not only increase student interaction but provide real-time assessment. I believe this could really assist us by giving us an assessment tool that happens right in the moment. Since we teach most classes only every other year – other kinds of assessment that would be based on final projects, although valuable to assess program SLO's, may not provide the instructor with the timely feedback that causes adjustments in the classroom.

3. Work with Hawaiian studies. Lau'ulu, Administration of Justice Program and science faculty on developing new curriculum and a Natural Resources (Malama Ahupua'a) degree. Explore the Mahi'ai programs at UHH and UH Manoa to see if there is an application to the Agriculture strand of this degree. Assist in data gathering.

4. Create another method of learning by useing the laptop cart provided by Ho'okahua to create a computer lab in Ag 104 when needed. Request and use a wireless connection in the Ag 104 classroom.

5. Work closely with University Center Director and Oregon State University e-campus to create an agreement for a pathway for students to get a General

6. Agriculture BS degree online here on Maui.

7. Use student/Para-professional help provided with USDA grant to maintain and improve native plant gardens on campus. This living lab is important for agriculture and ethno botanical classes.

8. Work closely with new SLIM director as appropriate for curriculum or campus sustainability programs.

IV. Resource Implications

Currently we have been able to utilize grant funds to support lecturers and student help. This has been very helpful for a small program when other campus pools of funds have difficulty justifying using funds for smaller groups of students than might be found in liberal arts or other more popular degree programs. These funds should at least continue through this academic year and possibly next.

We are currently upgrading some equipment and other infrastructure so supply costs are high. We do hope to be able to raise enough funds to cover these costs but may have to look for other funding for some larger items like mowers.

We do need to find funding for the Agriculture and Natural Resources Awareness day. In the past, this was funded by the Ulupalakua event but this no longer takes place. The Awareness day is quite an undertaking that consumes a considerable amount of time in planning and a moderate amount of money to provide tents, table and chairs and some food for participants. We hope that we will get some support from SLIM as well as other groups and our foundation funds.

We would request that our new marketing director is given as one mission to devote time to the programs that do tend to be under enrolled. We also hope that resources can be directed to marketing materials for these programs.

As an expensive program we are fortunate that we are also largely self supporting in terms of supplies and equipment. At the same time our fund raising provides us the opportunity to create goodwill in the community.

Overall in the near future, I do not see any major resource requests such as personnel for the MCC agriculture program.