

EXTERNAL REVIEW  
COLLEGE OF AGRICULTURE, FORESTRY & NATURAL  
RESOURCE MANAGEMENT  
UNIVERSITY OF HAWAII HILO CAMPUS

John W. Jensen

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**Summary and Key Recommendations**

This is a report following an external review of the programs of the College of Agriculture, Forestry & Natural Resource Management (CAFNRM) of the University of Hawaii at Hilo campus. I have personally been involved in Land Grant University Administration for about 20 years and have worked with agriculturally related topics for 45 years. The “big picture” I saw during my review was an island with tremendous potential but lacking planning, adequate funding base, coordination, infrastructure and cooperation that, if and when improved, would lead to opportunities that would be exciting, futuristic, and profitable models for the state of Hawaii and many parts of the world. However, neglecting to change and improve the current situation and structure may eventually lead to a partial or total dismantling of CAFNRM by the current or a future administration that may need to “prioritize”.

The University of Hawaii at Hilo must be complemented for the hard work and commitment of faculty, staff and students that has resulted in an organization that provides a good education with very limited resources. Some resources are currently in place to make the changes necessary that would “fix” the things that will eventually provide the University with a College of Agriculture ready to serve the needs of students, agribusiness and the world’s growing population. On the other hand, many more changes must occur, mostly through increased resources if CAFNRM is to become a competitive factor on campus or with other similar units on the mainland.

To produce necessary change that would bring about agricultural development, related groups should be brought together to brainstorm what the island CAN be and lay out a plan with goals,

objectives and actions that will lead to positive change. Some of the groups that need to meet together to develop a structured plan are CAFNRM faculty and administration, University of Hawaii at Manoa Agricultural Research and Extension, agricultural commodity representatives, state and federal government representatives from the Hawaii Department of Agriculture, USDA—ARS Daniel K. Inouye U.S. Pacific Basin Agricultural Research Center, and others to brainstorm and produce a strategic plan for the sensible and sustainable development and support of Hawaii County agriculture that would most likely provide support and direction to CAFNRM.

The following are priority recommendations to support change in the University of Hawaii at Hilo, College of Agriculture, Forestry and Natural Resource Management that would lead to positive change across the island. The recommendations were derived from the SWOT analysis that follows the recommendations.

### **High Priority Recommendations**

- Collaborations with the U.S.D.A—ARS Daniel K. Inouye U.S Pacific Basin Agricultural Research Center (PBARC) should be strengthened through enhanced communications and the development of an affiliates program in CAFNRM to bring research and extension scientists from PBARC and other agencies most closely aligned with the goals of CAFNRM. The Director of the USDA-ARS laboratory and the Dean of CAFNRM should jointly seek to develop more communication and collaborations by first bringing the two groups of scientists together for a day-long “summit” to discuss areas of concentration, overlap and potential collaborations among the scientists. Aquaculture was identified by USDA-ARS PBARC Director Wall as a potentially strong area of collaboration and therefore should be further investigated.
- All future faculty employment should continue to be 9-month appointments to increase research and outreach activities within CAFNRM. Serious discussions should take place as to a possibility of “buying out” faculty teaching time to make the 9-month appointments with more time assigned to research and extension responsibilities.
- Begin more annual or bi-annual events at the Hilo farm that would be open to the public to publicize the college’s teaching, research and extension activities in an effort to garner public support and recruit students. Dr Tsutsumi’s “Adopt a Beehive Field Day” and the AgClub/Alumni Banquet events each Fall and Spring are good examples of what should be expanded upon. Also, evaluate crops production and sales, training opportunities, etc., in an effort to develop potential revenue streams to support the Hilo farm and CAFNRM.
- There is an immediate major need for more funding support for each teaching FTE.

- Form an advisory board that meets several times per year to learn about CAFNRM activities and plans and provides advice and support through its members who include alumni, producers, consumers, legislators, related agencies and other value stream representatives.
- Development is an important part of a college's funding. Hawaii is rich with potential donors, many of whom should be on University of Hawaii at Hilo's development cultivation radar. Giving can only happen with dedicated, trained individuals who are assigned to raise money through donations that support scholarships, professorships, building programs, endowments, etc.
- Form committees that will develop university farm management and use policies and help the farm adopt and use up-to-date technologies.
- To solve a variety of problems created by many tracks of specialization and a lack of an agricultural core curriculum, the college has moved to one B.S. degree in agriculture with specializations in tropical plant science, horticulture, aquaculture and animal science. However, aquaculture does not fit very well into an agricultural core so it should be split out to offer its own B.S. degree with its own core curriculum. The B.S. in agriculture should be limited to two tracks, "Plant Sciences" and "Animal Sciences". In the future, if a subject matter does not fit into the core then it should be spun off as its own degree program.
- A subject that did not come up in interviews and discussions was the opportunities for faculty and the university to benefit from intellectual property discovery and development. Patents and copyrights should become a priority area of work in the college as intellectual property development may result in economic benefits as well as revenue streams for the college and faculty inventor(s).
- CAFNRM is a comparatively high-cost college. A short term, big, audacious goal for CAFNRM should be to spend more effort to recruit more students and have more enrolled students to complete their degree programs. This can be partially accomplished by employing a student recruiter and/or assigning student recruiting to faculty and staff.

## **Second Priority Recommendations**

- Each faculty member should be allowed to keep salary savings to be able to pay themselves summer salary and to support other work and travel.
- Grants and Contracts Administration, Office of Sponsored Programs needs to lend more support to research faculty and establish clear policies on indirect cost distribution.

- Incubating new businesses is a potential extension activity that should be evaluated as a revenue stream. For example, during the review an individual was interviewed who wants CAFNRM to be involved with their aquaculture operations as permanent staff in the Hawaii Ocean Science and Technology Park (HOST Park). There are also opportunities at the CAFNRM and PACRC farms.
- Discuss with main campus a system of IACUC deliverables that are not charged to the University of Hawaii at Hilo campus.
- Active student clubs are important for student learning and faculty/student interactions. Faculty advisors should work hard to support variable levels of student leadership so that the clubs will play an integral part of the positive CAFNRM “experience”.
- Develop a recharge center for vehicles in order to better manage their costs, depreciation and replacement.
- There is a need for improved equipment at the farm and at PACRC. It is recommended that a person or persons be assigned to look for needed equipment through Federal Excess Property. A person in charge at Auburn University was consulted about this soon after the review and he found that there were some large pieces of potentially useful equipment available at the time in Hawaii.
- It is highly recommended that the leadership of CAFNRM approach the Director of the Komohana Research and Extension Center of College of Tropical Agriculture and Human Resources at University of Hawaii at Manoa, to meet for quarterly updates and brainstorming about how each of the organizations can work more collaboratively in an effort to include CAFNRM in University of Hawaii at Manoa’s Land-Grant mission as indicated by apparent legislative action in the past. It is hoped that in the future, collaborations are supported by joint Extension appointments.

## **SWOT ANALYSIS**

### **STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS**

#### **Strengths**

- CAFNRM is dedicated to hands-on teaching and applied research that seeks to make Hawaii agriculture more sustainable.
- New faculty hires are now 9-month appointments that allow faculty to pay summer salaries using their grants and contracts for research and outreach.

- There is a teaching/research farm just 6 miles from campus dedicated to CAFNRM that is a wonderful asset for teaching applied agricultural sciences. Major features include beef cattle, hogs, goats, sheep, bees, fish and aquaponics vegetables, crops, etc. See “threats” for more information. The farm should also be developed and managed for critically needed revenue streams and public educational programs.
- It was found through a visit and interviews with individuals inside and outside the aquaculture program that those involved in the Pacific Aquaculture and Coastal Resource Center (PACRC) have placed it in a leadership position. Considering that the state is surrounded by vast ocean resources and a spectacular climate, this program should continue to be strong and in a leadership position. However, it too suffers from budget problems. It is understood that operational funding from CAFNRM is approximately \$12,000 per year while expenses are about \$500,000 per year. Their solutions to the problems provide approaches and examples to other CAFNRM areas of study that include donors and revenue streams such as oyster spat sales. The group is developing an advisory board and provides student experiences through on-the-job training for 20 students at a time. The facility at PACRC is clean and kept and a fine example what hands-on training can be. The CAFNRM farm should emulate the PACRC facility organization and work. However, I understand that it will require greater engagement by the plant and animal faculty at the farm, above and beyond teaching their class laboratories on site.
- CAFNRM does good quality work with few resources.

### **Weaknesses**

- There is an established level of recruiting activities in the college. The effort, however, could reap great benefits (more quality students) if recruiting efforts were expended on local high schools and mainland community colleges, especially in the western states.
- Although teaching is a priority of the University of Hawaii Hilo campus, there is little funding available to support CAFNRM faculty—just \$900/FTE/year for six (6) classes.
- The Office of Grants and Contracts Administration does a poor job supporting faculty research. As an example, the policy for the distribution of indirect costs from grants and contracts is unclear.
- University of Hawaii at Hilo does not encourage research and outreach. It is unclear about its Land-Grant mission.
- Salary savings for individual faculty are not allowed to accumulate for later program use. They are “swept”.
- There is no reward system for faculty related to their research and outreach/extension responsibilities.

- Collaboration overall with USDA-ARS, U.S. Pacific Basin Agricultural Research Center (PBARC) is weak at best. Collaboration can only be strengthened after more personal are hired with shared interests by both institutions.
- CAFNRM, according to several administrators, is underperforming for grants and contracts partly due to 11-month appointments and the lack of incentives. There is no merit-based pay which often supports the non-performers.
- There is no formal advisory board for CAFNRM.
- A development officer assigned to CAFNRM is desperately needed.
- Although the only forestry faculty member is highly qualified to teach, conduct research and carry out extension educational programs the support first promised for a larger forestry program has not been realized due to a lack of interest by students and a lack of industry expansion. Therefore, additional forestry faculty are not a top priority.
- The reviewer met with a small number of students—fewer than 10 arranged by the student agriculture club. They mostly all agreed that although most faculty work hard and try to carry out their responsibilities, there are many problems that they would like to see resolved. Comments made were:
  - There is redundancy in the subject matter of different courses.
  - The animal nutrition class does not fulfill the needs of aquaculture.
  - Transfer credits of high school AP classes not very good.
  - Entomology class is about taxonomy only and not about insect control.
  - There is no agronomy class.
  - Classroom availability is a problem
  - There are few elective classes and then they don't meet minimum number of students and are cancelled.
  - If the College of Agriculture features hands-on learning then we should have the entire experience including "how to farm". (Note: a farm with enough soil is needed for teaching on something more than small garden plots)
  - Many of the classes need more vigor.
  - Student attendance is poor.
  - Need anonymous on-line evaluations of faculty teaching.
  - "Sometimes we do not trust a professor's knowledge of the subject matter".
  - Some of the students who stay too long to complete a degree are "playing financial aid games" because of a "Western undergrad exchange incentive of ½ of out-of-state tuition"
  - Central administration should provide funding to College of Agriculture to employ their own student advisor rather than use the current centralized system.

- There were several comments related to the academic programs and the number of specializations in such a small college. It is extremely difficult to offer so many specializations and courses with so few faculty teaching “only” 3 courses per semester. It is understood that today there is one degree in agriculture with specializations in tropical plant science, horticulture, aquaculture, animal sciences with a pre-vet option under animal sciences. Problems here include:
  - Low number of graduates in some specializations
  - Need to cancel too many classes that don’t meet minimum number of students
  - There is not an agricultural core
- There are problems maintaining vehicles and charging for their use.

### **Opportunities**

- Hawaii imports 85% of its food and 95% of its fuel needs which should translate into opportunities for agribusiness and energy.
- Although some of the 11-month faculty members are performing adequately in their teaching roles, a teaching buy-out and retirements from this faculty group will eventually strengthen the teaching/research/extension programs.
- The U.S.D.A—ARS U.S. Pacific Basin Agricultural Research Center (PBARC) is a large basic and applied USDA-ARS laboratory on the edge of the University of Hawaii at Hilo campus. In meeting with the lab’s director, Dr. Marissa Wall, it was learned that there are 14 hard-funded scientists, 5 post docs and 30-35 hard-funded technician positions at their Hilo facility. Five CAFNRM faculty receive only part of \$125,000 for collaborative work with the lab. It appears that a closer working relationship could turn into more funded collaborations. However, this may only occur when there is better synchrony of expertise and research interests of personnel.
- A formal expansion of the CAFNRM faculty role into extension education would indirectly enhance the opportunities for support of CAFNRM by the agricultural community for funding and student recruitment.
- The CAFNRM teaching and research farm is a large asset that can be used to not only train students and support research. It can be a wonderful demonstration facility because it is located so near Hilo and agricultural areas. It has a definite use to conduct field days and tours to involve the agricultural as well as the non-agricultural population. Activities open to new audiences would help garner support and would be an excellent student recruiting tool.
- The Komohana Research and Extension Center in Hilo and located near the campus was visited. Through a discussion with Director Russell Nagata it became apparent that this facility and its professionals should be collaborating more closely. Collaborations could

hopefully lead to a system that one can envision being one extension and research system in the near future.

## Threats

- Enrollment in CAFNRM is rapidly declining from a high of 209 students in 2013 to 150 students today.
- Although there is significant outreach being conducted by faculty, there are no formal assignments within Cooperative Extension. Stakeholders do not understand why the main campus must be contacted for solving problems and education.
- The CAFNRM farm is a wonderful asset to the teaching program as well as future research and extension education initiatives. The farm, however, is short of staff labor and a manager recently retired has not been replaced. In addition, faculty members are not credited for work they do at the farm so not all are motivated to work there. Although it is a short distance from campus, transportation is not always available as is also the case with PACRC.
- IACUC (Institutional Animal Care and Use Committee) comes from HI—Manoa campus and charges HI--Hilo campus for its frequent services rendered in Hilo in part because there is no faculty veterinarian on the UH--Hilo campus. Cost of their work at UH--Hilo is becoming another drain on a limited budget.