Sustainable Agriculture Skill Panel Forum
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Growing Diversified Agriculture

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Discussion Outline:

I. Introductions: Why are we here?
II. Setting the Context Discussion:
    a. What is the current state of communication between educational entities and the agricultural industry on growing diversified agriculture?
    b. What is the current state of labor and labor shortages as it affects growing diversified agriculture?
    c. What is needed for the growth of diversified agriculture?
III. Preferred Vision in 10-20 Years
IV. Develop Priorities
    a. What are the opportunities or supporting forces that will move us closer to our best case scenario/vision?
    b. What are the barriers or restraints that hold us back from moving closer to our best case scenario/vision?
V. Outline Actions for Priorities (time permitting)

I. Introductions & Expectations: *Why are we here?*

Lily asked the participants to introduce themselves and their expectations for today's session.

- Interested in workforce issues
- Part of Agriculture Task Force City & County – want to become a bit more familiar with this topic
- We believe we have a part to play in diversified agriculture – green waste to compost for food so we're interested
- Whole career focused on expanding/diversifying agriculture
- Aquaculture and biofuels – important role to play in conversation
- Interested in trying to promote and move diversified agriculture forward
- CBED & Enterprise program
- We provide technical assistance to private sector in aquaculture and aquaponics – our mission is sustainable agriculture.
- Need to get a sense of the larger picture of agriculture for our students and our programs
- Student and farm worker

- Interested in working with co- and by-products of aqua and agricultural industry – turning them back into feed. Of great interest to use – we can utilize these products
- Passion for entrepreneurship
- Nonprofit that works on agriculture, diversified farm in Hilo – off the grid – showcase for bio-diversity
- Very interested in diversified crops – expansion of sugar lands to other crops
- Representing DOE – natural resource pathway – want to get kids interested in agriculture
- Diversified agriculture is direction I want to head my program in
- 3rd generation sugar plantation worker descendent; help with teachers and students making transition form older perception of agriculture to current one
- Job placement – help students to find what fits them – here to learn
- Department of Labor Workforce Development – training; very interested in agriculture industry
- Noncredit programs – offer online aquaculture courses – looking at alternatives to can refer students to credit programs
- CTAHR program encompasses much of this
- Cacao work – extension worker – evaluating the industry here and working on strategic planning for the industry; in Philippines we have so much diversified agriculture – here to share thoughts
- Ulupono – has invested in Hawaii's agriculture
- Lost sugarcane and pineapple; we have to focus on intellectual property export
- Produce farmers and landscapers – wear many hats; working on issues I think we'll address here – hopefully this will help us move forward
- Agricultural entrepreneur – floriculture to food production – convert greenhouses to food production; put face on next generation of agriculture – can have small farm be profitable and productive
- Participation will help us sensitize to the needs of workforce development and better sense of skills needed
- Wanted to be your family – own land and am interested in community purpose; partnering with 20 other organizations on community-based programs to raise native plants and restore maile; working on food production for sustainability
- Food scientist and student – expertise with food security solutions; starting a consulting business with a focus on profitable, diversified opportunities in agriculture and to bring people together (especially tea industry)
- Research on conservation – networking
- Coordinating these meetings (DLIR) – manage federal grant with sustainable agriculture focus
- I'm from Senator Inouye's office – new to diversified agriculture – seems like a burgeoning area – want to become better educated about this to assist Senator in making good decisions in this arena

II. Setting the Context Discussion

What is the current state of communication between educational entities and the agricultural industry on growing diversified agriculture?

Handout Q & A

A handout was provided to participants with data related to the topic being discussed. The participants were invited to ask questions or provide feedback on the information. (C=Comment; Q=Question; A=Answer)

Q: Have these values been adjusted for inflation?
A: They're farm values – not sure how to answer. Maybe look at more as trends?

Q: Has there been an actual increase in production of in dollar/values of farm products?
A: Both
A: However we get to the value – different factors. Workforce is a part of this; market forces impact/affect each area differently – show the complexity of this set of issues

Q: Can we get statistics on production costs?
A: We don't go into that. Most industries indicate growth but we need these statistics – some margins are shrinking (ex. cattle and commodities) – look at how do we move certain areas through workforce

C: There are resources for further research – published by the Department of Agriculture

C: Food production down and commodities production up so costs are also rising

Discussion

- Department of Education – CTE Perkins – pathway advisory councils – help us get a handle on skills needed to get into these fields; different from academic areas – users in industry speaking directly to us – we are laying the groundwork

  Q: How are the pathways being identified?
  A: Called natural resources because encouraging agricultural production, resource management, fisheries – our path includes people from those perspectives (conservation - Kupu, Shin Ho, Hau`oli Mau Loa, Nalo Farms, etc.) – we write education standards and performance-based assessments

  Q: Do you see linkage up to college levels?

A: Original authority of Perkins Law was 5 year plan – systems approach: we're looking at work entry – all students; not like an academic core – we take all students – CTE represents options

C: I'm a beneficiary of CTE – WCC – structure is based on career pathways – Leeward has started plant bio program – still small program; working closely with feeder programs – would help if there were more opportunities for students to experience working farms – on college level – they want to do Liberal Arts – would like to hear about opportunities for students while they're trying to make their career decisions

- Advocacy groups make sure there are secondary education folks on panels because we need to make this link – what are students learning outcomes? Want to align curriculum with industry needs. Dual enrollment - as young as 16 – also credits for college courses (A+, CISCO, retailing) – sequence of courses at high school level
- A bit fragmented – UH noncredit program in aquaculture – I didn't know that; I don't see coordination – map communication between organizations to reach out to primary and secondary and connection to industry
- We talk to local high schools (Kauai) – have had better interaction with Community Colleges – but minimalist in terms of skills useful to us – CTAHR/UH – communication has been difficult
- Curriculum in elementary years – in Philippines in young years our minds were already geared for agricultural work; I don't see cacao as one of the major interests – I think there are plantations with 15-20 year old cacao crops; I want to include this in the industry and include in the school curriculum
- Budget cuts to higher education system resources affected communication between industry , extension, research; hurting intellectual capacity and expansion of agriculture
- We've had excellent experience working with UH – started at Schiedler College of Business – no one has said no – must be a real collaboration and two-way street; we're geographically removed from college and high school
- Serious challenges – extension specialists try best but stretched thin – people find us; they will overwhelm our ability to respond. I sent in legislation to increase funding for extension
- Class at LCC certificate programs begin by special industries approaching and sharing needs and lists of jobs. Challenge is different sectors within agriculture industry to identify what needs are
- Some fragmentation between education and implementation – good education but lacking in ability to implement; farming population is aging – my goal to education next generation

What is the current state of labor and labor shortages as it affects growing diversified agriculture?

- Challenge is different sectors within agriculture industry to identify what needs are
- Some fragmentation between education and implementation – good education but lacking in ability to implement; farming population is aging – my goal to education next generation
- From industry standpoint – agriculture has been viewed as the lower end of the totem pole; difficult to get labor because people join in agriculture industry as laborer as last resort
- I am a laborer but was motivated to be part of creating a green economy – but many people question the safety issues and it needs to be made "sexy" – sustainability
- Needed basic labor skills: come on time, enthusiasm, some knowledge of biology and chemistry and mechanical skills critical (carpentry, engines, etc.)
- Technicians, scientists, managers, engineers – want enthusiasm as base, then some business skills and scientific level (we've had to look at mainland for this) – lack in higher education in Hawaii – if we had better workforce locally that would help. Need to develop people in algae culture and with analytical capabilities – biofuels
- Two levels for labor side and scientist side
- At community college level, outcomes talk about preparation to take science and math courses (STEM) – need to raise standards and incorporate earlier so foundation is established and students are prepared at the college level
- Working to get standards in place; experiential knowledge important – we ask industry to share problems in industry and we build it in to curriculum (ex. food security) – the kids investigated and proposed alternatives; we try to give kids hands-on experience. CTE only gores from 9-12th grade unfortunately
- Small window to get them excited. If industry folks could share experiences that would get students interested – there's not encouragement at school level for students to get involved in agriculture. We need to get the numbers up and do better marketing of agriculture as a career pathway – currently there is a low number of students who want to participate in the pathway
- Agree that there is a shortage and that current employees don't have all the skills needed and the careers are not attractive to younger generation. The key to attracting them is that employers need to provide desirable work conditions – spend time training and provide benefits
- Labor numbers as a general trend are very low – biggest challenge is wages are not on par; over 30% of harvest laborers are Ilocano workers. To attract the younger generation, we need to demonstrate that a transition is occurring and the career is different in many ways now. Sensitizing is needed

- We need to create a cultural shift to what would attract people to "sustainable green" and show that this is different from what originally attracted Ilocano farm workers

What is needed for the growth of diversified agriculture?

Q: What kind of labor is needed?
A: It is both labor and science

C: Have to look at all of Hawaii – not be Oahu-centric. We have 11 of 13 climate zones – we forget the other islands – industry needs to come to other islands – kids are interested; we have skills – come and we'll give you people who will work hard – huge Micronesian populations – they're great farmers but we need to be able to communicate

Q: What has Ulupono's experience been?
A: We're working with several different industries – 1,200 – 2,000 jobs in next 2 years – jobs that descriptions don't exist for yet (ex. algae, ethanol) and skills sets don't exist yet in Hawaii though can find on mainland (exist in Oregon, California) – less interested in the technical experts, rather want well-rounded graduates (can read, talk, add, etc.); going to grow in bio crops, mass production, food products – not typical range of jobs – combination of food and energy that creates new mix of jobs (blends); ethanol plants, etc. – we have to move forward rather than look at current agricultural models

- Without knowing where industry going completely, how do we get kids excited about this when it's not crystallized yet
- When we talk agriculture, what comes to mind is "working in the field" – we need to expand this picture to include processing, value of agriculture (milk industry example) – there's more to agriculture than just pulling weeds, etc.
- Story from Peace Corps – working with Ministry of Education – within 4 months changed school curriculum to incorporate packaging and marketing solar dryers – we saw amazing results; empowered the students – they related agriculture with food and making it a business. The other obstacles are food safety issues – not able to market products that are processed outdoors; we need to collaborate with different groups, including DOH – come to the table and work together to resolve these barriers
- We lack funding – more than enough people for job but we can't pay them all – problem of affordable housing – maybe consider holistic needs – work in agriculture – get low interest loan to get into housing and other benefits – student loan payments, etc.
- We do this – it is a big way to attract people to plots

- Sustainability is not just about producing food – its about quality of life and your business' impact on the environment – it may mean less profit but more stable in terms of impact; also technology can up production from 100 – 1,000% - should employ more educated people interested in industry; we can reduce negative impact on environment and employ technology
- On Kauai, we have a lot of people asking to lease land for agriculture – ask for basic business plan – 98-99% of folks don't come back. Approach from business perspective – we should collaborate with Economic Development Board and other partners in agricultural business plan competition – include aquaculture. Lifestyle farmers always, but need business perspective as well
- I learned from Small Business Association – assistance to help write business plans – economic side – maybe refer people to these resources more
- Part of agricultural education should be agricultural economics – should be an integral part of the education system
- At high school and community college level – we need to education people on economics side to enable ability to acquire financing
- Sophistication of importation system – more products than we produce ourselves. The statistics reported show that half of the items on are import fees from outside. Feed prices – ask for increase in freight rate. You never win. How do we get to self-sufficiency? Broader spectrum. Consider climate change – price of land; zoning
- Business Plans – holding workshops on building a business plan – don't get many attendees – we need a sexier name – "Become a millionaire" – we need a way to better draw people in

III. Preferred Vision in 10-20 Years

What is the best-case scenario for assuring a workforce to grow diversified agriculture 10-20 years from now?

- We deal with human capital. Economics is a very different way of looking at things. If we can give kids general ideas on supply and demand, inputs and outputs, then I think we have the means of getting to innovations – this will lower the costs of diversified agriculture. We're the transition generation – we need to move our kids at our level
- Increase self-sufficiency – 13 of the 20 crops are export crops. Export industry drives – when we talk about self-sufficiency, we don't need a lot for local consumption, we need to think about export side in terms of creating jobs. We will never be self-sufficient in Hawaii (always 80% or more of our food brought in) but can grow more fruits and vegetables
- Need an entire generation of entrepreneurs – issues are that current competitive model is vicious – prohibits sharing. Tea industry example – a lot of mistrust – if could collaborate could do collaborative pricing. Focus on collaboration with children – not competition-focused

- If California falls off the face of the map, we aren't going to be able to survive. We need integrated food, fuel and feed system here – between various sectors – this will create diversified agriculture and education system can come in and teach this
- Cereal grains and canned foods – why are we eating these in Hawaii? Not healthy – we have abundant fish and taro here. Why don't we re-work our food culture? Choyote, breadfruit – many people don't like them but we should transition. Integrate fuel and feed – why are we throwing animals in feed lots instead of integrating into farm lots?
- Integrated farm and fish ponds, etc. in Philippines – we have poultry, fish, etc. all in one area. I want to see this in Hawaii – enough lands but not used for agricultural labor force – social security of farmers is a big problem – as farmers age, they don't have medical insurance, etc. We should provide this
- Ulupono study – local food demand – currently produce 8% so a lot of room for growth – my goal is to promote agriculture; create a prototype used to help future farmers to be profitable – in 20 years, numerous prototypes in aquaponics, aeroponics, etc.
- From the research perspective – progressive agriculture ranking – 2007 USDA data shows indications that:
    - Entrepreneurship is big in Hawaii
    - Social capital is increasing
    - Social equity is increasing
    - There is a commitment to organic and environmental stewardship
- Food production locally – to 20% by 2020 is the goal; includes tweaking of diet. Another perspective – for every $ brought in from tourism, we spend on food = net loss.
- We have $6-10K on EBT (welfare) – on the Big Island local residents can't afford local produce; we need to be able to reduce prices on nutrient rich food so they are more accessible. We spend 42 cents/kilowatt hour for electricity. Reduce price of electricity and fossil fuels; that will put more $ in our pockets
- Agriculture folks being paid a living wage – attract well-educated people; paying wages comparable to skill
- Land and water are economic factors that influence agriculture; integrated farms with animals and plants – ideas is not compatible with health certification rules – need more flexibility to accommodate
- Elementary school gardens – lots have, funded by grants. Elementary level curriculum in agriculture is teacher-generated currently; need scholarships, internships, and to encourage farmers and producers to talk directly to teachers
- Prioritizing what is important as a community may be more settled in 10 years. My kids will raise their kids differently. Kids will know where their food comes from and there are options. Smaller footprints; food accessibility; different ways of looking at farming
- Food production and sustainability is something we all know how to do

- We have to look at policies – not so restrictive that prevents us from doing common sense things
- Focus is agricultural labor system – it is currently broker – it's not profitable – rules and regulations are so prohibitive. We need to look at whole system – business part is SO important. We pay so much for land; farmers are on the bottom – willing to back down on pricing
- Integrating fuel, food, feed – correlation between feed and fertilizer – go hand in hand. If we go to 20% we would have 1.5 weeks of food supplies (currently just a few days); we need at least a few weeks of feed before our animals would perish

IV. Developing Priorities

*What are the **opportunities or supporting forces** that will move us closer to our best case scenario/vision?*	*What are the **barriers or restraints** that hold us back from moving closer to our best case scenario/vision?*

Entrepreneurial Leadership/Thinking/Education/Youth (24 votes)

• Entrepreneurial leadership/thinking • Young people breaking the barriers and being involved in farmers market – actually selling products grown (Malama Learning Center) • Make use of aging workforce – helping to navigate/skills & expertise/mentoring • Sustained relationships between industry and education – create alignment • Engaging youth in the workforce • Supporting associations in secondary and post-secondary – "Future Farmers of Hawaii"; pathways for students into agriculture careers (like HRSA) • Future Farmers of America • Internships – bringing in interns from CTAHR	• Not enough workforce • Farm labor • Lack of funding for student help • Average farmer is 64 years old • New farmers/immigrant farmers lack of education and use of technology

Support for Research & Development (23 votes)

• A lot of innovations locally • Teach people how to use small by-products – innovation – to pilot scale up to yes/no answers • Greater support of research and development • Moving R&D out into community use (CTAHR) – restructuring system	• Lack of capacity to help farmers with problem solving on technical issues • Lots of slaughter house waste being buried • Scaling up from lab to large production (commercial scale) takes several steps • Lack of infrastructure

Collaboration with nonprofits and private sector (22 votes)

• Private industry working with education • Opportunity to collaborate with nonprofits focused on sustainability (ex. interest in energy and agriculture); vs. total dependence on government • Partnering with private sector (ex. Ulupono, Monsanto, Kuhio) – meeting landowner's needs • Sustained relationships between industry and education – create alignment	• CTAHR not able to pick certain partners only because of appearance of favoritism – this inhibits partnering with private sector (dictated by state procurement statutes) •

Policies/Regulatory Environment (17 votes)

	• Food safety regulations • Government contradictions (ex. We support renewable energy but remove all incentives for renewable energy businesses) • Some government departments have too much power • Government regulations and bureaucracy – need to be streamlined • Environmental due diligence requirements • Everything takes too long and businesses leave or don't come • Current government policies on procurement/rules and regulations

	hampers our small industry (need specifics on what needs to change) • Government red tape • Regulatory framework not designed for agriculture

Technology (12 votes)

• Accessibility to information systems and technology – innovation vs. tradition	• Barriers to access to resources for information

More/New Markets (11 votes)

• Slaughterhouse waste – creativity in how we deal with this (but must render the product) • Identifying more/new markets for agriculture products (buy local, grow local); move towards value-added; processing so that farmers see higher return • Ingredients for feeds or fertilizers • Ag co-ops (ex. Waipio Valley co-op) – working with hotels to buy local	

Tax and other incentives (9 votes)

• • Tax incentives • Creation of bond sale for agriculture • Carbon tax will support food security model and reduction of fossil fuels – alternative energies • Promoting diversified agriculture presents opportunity to change way Hawaii does business – change laws and how government works • Education arena asking for removal of barriers • Restore extension capacity at CTAHR	• Dependence on government

Profitability (6 votes)

• Economics (example, if offered more by one buyer, farmer may stop selling to a particular hotel – then we're perceived as less dependable) • Not enough capital • Not enough workforce • Lender regulations are barrier to loans • Costs to operate/farm management – day to day • Transportation (import and export and local cost of trucking) • Farm labor	• Hawaii is a "pocket market" – glut then pricing issues (easy to oversupply) • Small farmers are on a consignment basis (price-takers), esp. ornamentals • High cost of feeds putting local producers at risk • Continued competition with mainland price points • Profitability – if not, young people don't see a future in it (balance)

Access to Land (6 votes)

	• Land acquisition (no easy access to land and high costs) • Land and water availability

Agricultural Parks (6 votes)

• Creation of agricultural parks	•

Co-Existence (4 votes)

• Co-existence (more openness to share land use vs. one use for land)	

Food Security (3 votes)

	• Lack of food security preparedness (we need to be proactive)

Culture (2 votes)

• Agriculture is dear to Hawaii's culture – some connectivity to land and growing	• Natural tendency of farmers to be independent-minded • Frustration over efforts that have gone unheeded

Bio Security (1 vote)

	• Invasive species

Multiplier Effect (1 vote)

• Multiplier to overall economic welfare of state – optimizing that	

Green Movement (0 votes)

• Green movement leads to creation of more jobs	

Report Back on Vision and Priorities to Larger Group

Vision

Increased self-sufficiency; innovation and entrepreneurship; collaboration; integrated fuel, food and feed system; food culture; 20% by 2020; well educated, compensated workforce; incentives; policy reform; systemic view of agriculture

Priorities

1. Entrepreneurial Leadership/Thinking & Education of Youth
2. Support for Research & Development (including Cooperative Extension)
3. Collaboration – nonprofit, private sector, government, etc.

Underlying all – Policy and Regulatory environment