

## Carbon Farming Task Force

### MINUTES

Friday, September 15, 2017: 9:00 am to 11:45 am  
Office of Planning, 6th Floor Conference Room  
235 S. Beretania Street, Honolulu, Hawaii 96813

### ATTENDANCE

- Members Present: Mayor Alan Arakawa, Leo Asuncion, Susan Crow, Jonathan Deenik, Scott Glenn, Philipp LaHaela Walter, Diane Ley, Michael Madsen, Kahi Pacarro, Josh Stanbro, Ben Sullivan, Stephanie Whalen, and Earl Yamamoto
- Members Excused: Mike Gabbard
- Office of Planning Staff: Danielle Bass, Melanie Lander, Sandy Ma, Justine Nihipali, and Steve Richards
- Other Present: Rep. Chris Lee (Hawaii State Legislature), Kathleen Lee (Hawaii Public Policy Association), Keith McFall (Department of Health), Malia Nanbara (DLNR Division of Forestry & Wildlife), Ann Ogata-Deal, Dave Simpson (Hawaii Green Grown), Melanie Willich (UH Hilo CAFNRM and The Kohala Center), and Kenneth Yamamura (County of Maui)

### DISTRIBUTED MATERIAL

- Carbon Farming Task Force Meeting Agenda for September 15, 2017
- Act 33, Sessions Laws of Hawaii (SLH) 2017
- Power Point Presentation by Chair Asuncion on Act 33, SLH 2017
- Power Point Presentation by Susan Crow on the current science of carbon sequestration
- Public Comment by Joan Obra, partner Rusty's Hawaiian

#### **I. Call to Order**

Chair Leo Asuncion called the meeting to order at 9:05 am and welcomed everyone. Chair Asuncion announced there was quorum to start the meeting.

#### **II. Welcoming Remarks**

Chair Asuncion announced that the Task Force was established by Act 33, SLH, and was subject to HRS Chapter 92, Sunshine Law. The Task Force's September 15, 2017 meeting notice was published according to public meeting notice requirements.

#### **III. Remarks by Rep. Chris Lee, Chair of House Committee on Energy & Environmental Protection**

Chair Asuncion introduced Rep. Lee as the original author of Act 33 and the person who guided it through the Legislature. Chair Asuncion stated that Rep. Lee would give some thoughts as to where he would like to see the Task Force proceed.

Remarks by Rep. Lee:

Act 33 is part of the puzzle to deal with our State's climate future. The State is currently tackling our renewable energy future. We can, through the Task Force, implement best practices to minimize and sequester carbon emissions from other sources. Other states and nations are doing this already. We can learn and figure out how to leverage that into not only environmental benefits for Hawaii but also economic benefits. This could potentially be new revenue and capital that would be a huge opportunity for everyone in this State. Private sector wants to invest in the infrastructure side (for maybe programs) and carbon credits and the capital that is moving in those markets. There is opportunity that far exceeds anything we have yet imagined in Hawaii. Credit needs to be given to people who moved the bill along -- the Center for Food Safety and dozens of ranchers and other agricultural industry stakeholders on neighbor islands who gauged interest for this Act. If we can come up with a set of best practices and a certification process or some other mechanism to enable capital to go to the right organization / companies to leverage financial capital out there, this should be a driving goal of the Task Force.

Chair Asuncion recognized Mayor Arakawa and asked the Mayor to make a few remarks.

Remarks by Mayor Arakawa:

Carbon footprint is one of the largest discussions worldwide. There is a necessity to reduce our carbon footprint. Policy related to carbon is changing. All of our laws and even our way of life are in a state of flux. Looking at this will give us a good start. We will not be coming to any final conclusions. We will not know what the world will be like in 5 years.

#### **IV. Round Robin Introduction of Task Force Members and OP Staff for the Task Force**

Task Force members introduced themselves and attendees introduced themselves.

#### **V. Overview of Act 033, SLH 2017 (HB 1578, CD 1), which gave rise to the Carbon Farming Task Force**

Chair Asuncion's Power Point Presentation of Act 33 may be found on the Task Force [website](#).

Chair Asuncion stated that Hawaii Department of Land and Natural Resources (DLNR) has several carbon projects underway and is supporting and/or funding several agroforestry projects run by private entities. The Task Force should not be reinventing the wheel and should probably concentrate on agriculture and aquaculture.

In response to question from Mayor Arakawa regarding agricultural carbon sinks and whether agriculture is a carbon sink or whether Agriculture, Forestry and Other Land Use (AFOLU) activities combined are carbon sinks, Member Madsen responded that based on the preliminary 2015 emissions inventory, agricultural activities are greenhouse gas (GHG) sources and land use change and forestry are both sources and sinks. Largest sinks are forest carbon, urban trees, land fill yard trimmings and food scraps. Largest sources are agricultural soil carbon and forest fires. Large GHG sources for agricultural activities are emissions from livestock and fertilizers.

Member Whalen added that agriculture and forestry are all in one sector, according to the IPCC Fifth Assessment Report (2014) and Hawaii Greenhouse Gas Inventory: 1990 and 2007 prepared by IC International for DBEDT dated December 31, 2008, and it would be helpful to have the data separated. Member Ley also added that it would be helpful to know what is the difference between natural forestry and agroforestry. Member Madsen stated that the new 2015 GHG inventory should be available first quarter 2018.

Chair Asuncion stated that despite not having annual reporting requirements, the Task Force still will report back from time to time to the Legislature.

Chair Asuncion stated that the Task Force should develop a plan to fulfill the mandates of Act 33 potentially through:

- A pilot project by looking at different crops;
- An on-site demonstration project by acquisition of lands; and
- Looking at creating a State funding source to acquire properties. Mayor Arakawa asked Rep. Lee what was the possibility of the State setting aside funds to acquire more green space. Rep. Lee stated that he personally would like to see this happen. Rep. Lee stated that he knew that Sen. Dela Cruz also would like this through the mechanism of land swaps. Rep. Lee stated that he would like to work with counties on this. Attendee Nanbara stated that there are federal / state / county funds – through the Legacy Land Conservation Program and a national competition (75% federal and 25% state match) – to purchase lands for forestry and Maui has funds to purchase lands. Member LaHaela Walter stated that DNLR is currently working on three land acquisitions and the Legacy Land purchases may also include agricultural lands but is a very complicated process. Member Glenn suggested that the Task Force should consider and develop a recommendation or policy through guidance / direction to the Legislature and counties for acquiring properties and identifying areas to be acquired so that the areas may not be re-zoned and developed. As for introducing legislation, Member Ley inquired if there were any specific timeline and Chair Asuncion responded that the Task Force does not need the Administration's approve and can get a legislator – Sen. Gabbard or Rep. Lee – to introduce the bill prior to introduction deadline. Member Whalen stated that Task Force needs inventory of how many funds there currently are to buy lands and for what purpose. Member LaHaela Walter advised that there is a DLNR 2007 report, which includes state,

private, and federal programs / funds. Attendee Nanbara also has a spreadsheet with funding sources to acquire lands. City and County has \$10 million through the Clean Water and Lands Commission to spend, which, however, is not favorable to agriculture.

**VI. Discussion of Current Status of Carbon Sequestration in Agriculture, Aquaculture and Agroforestry in Hawaii and Goals of Task Force**

- A. Briefing by CTAHR Researcher regarding current science of carbon sequestration in agriculture, aquaculture and agroforestry.**
- B. Report from the Task Force Members as to the status of carbon sequestration through agriculture, aquaculture and agroforestry in Hawaii.**

Member Susan Crow's Power Point Presentation, including her research into measuring the carbon sequestration position of Hawaii soils, may be found on the Task Force [website](#).

Attendee Willich inquired regarding abiotic carbon sequestration methods through agricultural practices, which Member Crow stated may be considered by the Task Force. Member Stanbro inquired as to the carbon sequestration potential of biochar, which is significant, according to Member Crow and is both abiotic and biotic.

Mayor Arakawa stated that invasive species is a problem that must be faced and addressed by the Task Force if carbon sequestration through agricultural practices is to work.

Mayor Arakawa added that almost every law in Hawaii that is to benefit the agricultural industry is actually harmful to agriculture. For example, properties are split up and there are no large tracts, there are no cooperative adventures, and for organic farmers, compost is not tested and cannot be put on the market.

Member Crow stressed the use of cooperative adventures, waste stream management and ability to rotate crops combined with chemical fertilizer.

Member Madsen reported that the IPCC does not consider aquaculture to be a carbon sink and nitrogen emissions from aquaculture in U.S. and Hawaii are very small. According to Member Ley, who spoke with Natural Energy Laboratory of Hawaii Authority (NELHA) and Cyanotech, Inc., and they agree. Member Crow agrees that aquaculture could be a closed system when tightly controlled but when not tightly controlled the nitrogen will be lost as N<sub>2</sub>O, which is a very powerful GHG.

In response to Member Whalen's inquiry about the number of predominate soil orders, Member Crow responded that there are five (5) predominate soil orders and some are more important than others for farming, e.g., histosols (but we do not farm in them), andisols (we do farm in them), oxisols, and mollisols (not very predominate but high fertility).

Attendee Willich inquired of Member Crow as to whether for soil organic carbon measurements if studies were conducted for faster responding biologic indicators like biomass or enzymes. Member Crow responded that she did break down the carbon pools into multiple pools and some reacted faster than others.

Member Crow reported that there are federal models to measure agricultural carbon sequestration potential but they do not translate well to Hawaii because there are not enough data. This is why she and Member Deenik are creating at CTAHR a Hawaii-centric agricultural carbon sequestration model.

Mayor Arakawa suggested that the topographical rock formations act as good indicators for depth of soil for sampling for carbon sequestration.

Member Glenn inquired if Member Crow had looked at California's carbon market program and Member Crow confirmed that she had reached out to California.

Mayor Arakawa raised the issue that one of the biggest challenges with farmers is that every half mile there is variation with soils and weather. Member Crow responded that measurements for carbon sequestration research may need to rely on the citizen scientist approach.

Mayor Arakawa suggested that Office of Hawaiian Affairs (OHA) had commissioned a nitrogen fixing study and Member Crow may want to look at that study.

Member Whalen asked if Member Crow will be incorporating Natural Resources Conversation Service (NRCS) information in her model and Member Crow responded affirmatively.

Mayor Arakawa stated that every place in Hawaii may be farmed if you can get water to the area. The limitation on what and where you can grow is dependent on resources put into those areas. Member Crow responded that the prime agricultural lands are classified as flat and open so that heavy equipment may access them. Mayor Arakawa opined as to discarding the prime agricultural lands Agricultural Lands of Importance to the State of Hawaii (ALISH) system.

Member Crow echoed the sentiment that the attitude toward agriculture is negative and the need to change that as the period of large industrial agriculture, plantation era is over.

Member Sullivan inquired if there has been any research as to the annual market value of carbon sequestration and relative opportunity. Member LaHaela Walter responded that DNLNR estimated that to reforest all non-native grass and shrub lands under Division of Forestry and Wildlife jurisdiction it was estimated that 4 million tons of carbon additional to what is already stored. The international voluntary carbon market \$4.90 / carbon credit in 2016 and for the compliance market in 2016 it was \$9.70 (California)<sup>1</sup>. The carbon credits may be sold for a higher price depending on marketing additional cultural,

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<sup>1</sup> Additional information about forest carbon finance may be found on the Task Force [website](#).

ecological, economical benefits and with additional credits. Also, a forest carbon project on the Big Island sold carbon credits for \$45.00 / credit.

Member Sullivan stated that this would be really good information to have, even on a design level for agriculture, aquaculture, and agroforestry, then you need to subtract out the costs so we are just looking at the marginal gain of doing carbon sequestration. Member Crow responded that CTAHR had done this analysis with biochar in Waimanalo and with carbon credit calculated in it was profitable and, without carbon credit calculated in, it was not profitable. The flip from non-profitable to profitable came around the \$45.00 range per carbon credit.

Member Stanbro reiterated the need to monetize for farmers and suggested that businesses that are emitting will need to pay for their emissions and this will be the incentive for farmers.

Mayor Arakawa suggests manageable till and Member Crow agrees with this.

Mayor Arakawa suggests also measuring green spaces being kept in house lots versus how much is being paved over. Member Crow agreed that it would be great to incentive people to rip out their concrete. Mayor Arakawa stressed the importance of maximizing green space. Rep. Lee stated that two to three years ago the Legislature passed a bill allowing the counties storm water utilities, which permits more green space.

Rep. Lee inquired about using seaweed in land-based farming and is there a mechanism to support other new scientific developments. Attendee Nanbara stated that there are state and federal grants to new, interesting, and innovative projects. Member Glenn stated that Ocean Thermal Energy Conversation (OTEC) is combining OTEC with aquaculture.

Member Ley stated Hawaii's climate supports tropical and sub-tropical agriculture. USDA will not be supporting tropical and sub-tropical agriculture even though majority of the globe is both so Hawaii has a major global advantage.

Mayor Arakawa reiterated that Hawaii's laws are not friendly towards agriculture and agricultural research. Mayor Arakawa suggested revising laws to make them friendlier towards agriculture and less convoluted.

Member Stanbro suggested that there is a massive grassroots network that the Task Force may tap into and build off of.

Member Whalen reported that for land designation in Hawaii there are two million acres for conservation and two million for agriculture. In the two million acres for agriculture, at its maximum, the sugar and pineapple industry was farming 350,000 acres and a lot was taken up for pasture. About five years ago a company from Europe heard that there were hundreds of thousands of acres for agriculture but they wanted 2% soil and no rocks. They could not even find twenty thousand acres. Mainland models do not work in Hawaii. We do not have money to create own models. Money does not come to

agriculture. There needs to be commitment by the Legislature and society to agriculture. 5 - 10 acre new farmers will not go to Member Crow's scientific model. This may be waste of time. There must be commitment.

Member Sullivan inquired about some sort of inventory specific to the purpose of the Task Force. Member Whalen stated there is an inventory for agricultural lands. Member Crow said there is a study from University of Hawaii Economic Research Organization (UHERO). Member Sullivan suggested putting together a new farming typology inventory, i.e., what does ranching look like, what are the different ways to ranch, etc. Chair Asuncion that this may be done with the limited initial Task Force budget.

## **VII. Public Comments on Agenda Items Discussed Above**

Attendee Willich suggested that the Task Force look at pasturelands and incentivizing ranchers to improve their practices. What power does the Task Force have about putting more priority on agriculture and mineralization of soil organic matter and reducing tillage? Does the Task Force have the authority look at beef sector and shipping off island for slaughter and looking at animal slaughter? What about the Task Force reviewing carbon offsets?

Chair Asuncion responded that we are trying to gather the information. We need to have focus for the Task Force to go forward. We need to identify the tasks set forth in the Act but there will be branches. Once a plan is adopted to address the mandates of the Act, the Task Force will certainly find offshoots, then the Task Force can go to the Legislature to request additional resources to address more topics.

Rep. Lee added that this Act is a starting point. This is a new area of discussion and the Legislature is not adverse to new areas. Ranchers – Parker Ranch and Molokai Ranch – started this discussion.

Chair Asuncion encouraged people to get new ideas to us and the Task Force will figure out a game plan that is valuable to farmers and economically viable.

Attendee Willich suggested that, through the Kohala Center which is working with a European university within the European Union there might be an undergrad student available to assist on the Task Force starting next year. Chair Asuncion said that the offer would be noted.

Mayor Arakawa suggested marketing, legalizing, and taxing the sale of venison, which can control invasive species, and benefit farmers. Member Yamamoto agreed.

Public emailed comments from Joan Obra were distributed and the Task Force will answer her questions.

## **VIII. Next Steps**

### **A. Memorialization of action items to be accomplished, arising from the Inaugural Task Force Meeting, and persons responsible for carrying out the action items prior to the next Task Force meeting.**

Chair Asuncion advised that draft minutes will be sent to Task Force members prior to the draft minutes being posted and action items will also be sent to Task Force members. Draft Task Force minutes must be posted within 30 days of the meeting per Sunshine Law and the draft Task Force minutes may be adopted at the next Task Force meeting.

### **B. Determination of Frequency of Meetings.**

#### **1. How often should the Task Force meet?**

Member Ley questioned if the Task Force has the ability to meet virtually. Chair Asuncion explained that Sunshine Law requires that the location of the virtual meeting location must also be made public and be noticed as such. Member LaHaela Walter stated that there is a Hilo DOFAW office available for public meetings and Member Glenn noted that if communication is interrupted then the meeting must stop.

Member Glenn suggested syncing Task Force meetings with Hawaii Climate Change Mitigation and Adaptation Commission (HCCMAC) meetings, which next meeting is scheduled for October 11, 2017. Chair Asuncion stated that the next Task Force meeting would be determined after the next HCCMAC meeting.

Member Ley asked if the members could communicate with each other. Chair Asuncion clarified that no more than two members may communicate with each other outside of officially noticed Task Force meetings. The Task Force can set up working groups.

#### **2. Should the Task Force consider meetings on Neighbor Islands?**

This will be determined at the next Task Force meeting.

### **C. Center for Island Climate Adaptation and Policy at the University of Hawaii Manoa (ICAP)**

#### **1. Seeking Task Force's action as to ICAP's membership status**

Task Force will not include ICAP as it exists in name only and it will not affect quorum.

**D. Determination as to whether Additional Task Force Members or Substitute / Alternate Task Force Members Should Be Permitted**

Rep. Lee and a representative of Center for Food Safety are made members for Task Force and each member will have an alternate.

Member Whalen stated that members and alternates should be invited to all meetings and if the members cannot attend then the alternates are permitted to vote.

**IX. Announcements**

**1. Task Force Website**

Information will be posted to the Task Force [website](#).

**2. Next Meeting Date and Time (Note: This May Be Determined Above by Section VIII. B.1.)**

This will be determined by the HCCMAC meeting schedule and further described by Section VIII.B.1.

**X. Adjournment**

Chair Asuncion adjourned the meeting at 11:45 a.m.