

HB 2180

LATE

Testimony

Measure Title:	RELATING TO AGRICULTURE.
Report Title:	New Technologies for Sustainable Agriculture Pilot Project; Appropriation (\$)
Description:	Appropriates funds for a pilot project at the College of Tropical Agriculture and Human Resources at the University of Hawaii at Manoa to create new technologies for sustainable agriculture in the State through scientific research and support services. Effective July 1, 2014. (HB2180 HD1)
Companion:	
Package:	None
Current Referral:	HRE/AGL, WAM
Introducer(s):	ONISHI, AWANA, BROWER, CACHOLA, MATSUMOTO, NAKASHIMA, TAKAYAMA, TOKIOKA, TSUJI, WOOLEY, Choy



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Written Testimony Presented Before the
Senate Committee on Higher Education
and

Senate Committee on Agriculture
Thursday, March 13, 2014; 2:35 pm

by

Maria Gallo, Dean

and

J. Kenneth Grace, Interim Associate Dean
College of Tropical Agriculture and Human Resources
University of Hawai'i at Mānoa

HB 2180 HD1 – RELATING TO AGRICULTURE

Chairs Taniguchi and Nishihara, Vice Chairs Kahele and Kouchi, and members of the Senate Committee on Higher Education and Senate Committee on Agriculture, thank you for this opportunity to testify in support of HB 2180 HD1, which would fund a pilot project in the College of Tropical Agriculture and Human Resources, University of Hawai'i at Mānoa, to create new technologies for sustainable agriculture in the State through scientific research and support services.

We strongly support this bill provided that its passage does not replace or adversely impact priorities as indicated in the University's Board of Regents Approved Executive Biennium Budget.

Limiting factors in agriculture in Hawai'i are increasingly high energy costs, waste management needs, water availability and the costs of imported soil amendments. These steadily rising costs are serious threats to the practicality and profitability of farming and ranching in the state, and severe impediments to the goals of food security and sustainability.

HB 2180 HD1 supports research and development of integrated approaches to low-input, sustainable agriculture on a model farm scale in order to extend the results to Hawai'i's farmers and ranchers. A \$1,000,000 appropriation has been suggested as follows. Pilot projects under the umbrella of an integrated agricultural system will include:

(1) Development of a multi-soil-layer water remediation system for R-3 to R-1 water (\$121,000);

(2) Solar and biological waste water detoxification, to degrade and detoxify water contaminants such as endocrine disruptors and pharmaceutical wastes that are polluting land and the coastline (\$417,000); and

(3) Sustainable conversion of agricultural wastes to energy and value added projects. Specifically, construction of a pilot-scale anaerobic biorefinery system to convert organic waste to biogas, and further to refined fuel and co-products such as soil amendments (\$462,000).

The College of Tropical Agriculture and Human Resources experiment station intended as the site for this pilot research and demonstration project, the Waiale'e Experiment Station on the north shore of Oahu, provides an excellent example of mixed animal/crop, small farm/ranch operations in Hawai'i, and the challenges of input costs, effective waste management and protection of natural resources. Training in the skills needed to address these challenges is an integral part of the pilot project.

This pilot project is intended to provide and extend model technologies for sustainable food and energy production, combined with effective waste remediation and environmental protection in Hawai'i. Thank you for the opportunity to express our support for this effort towards a sustainable Hawai'i represented by HB 2180 HD1.

My name is Dr. Samir K Khanal. I am an Associate Professor of Biological Engineering in CTAHR at UH Mānoa. However, today, I am providing personal testimony in support of HB 2180 HDI, Relating to *New Technologies for Sustainable Agriculture Pilot Project*.

I strongly support this bill on higher education and agriculture provided that its passage does not replace or adversely impact priorities as indicated in the University's Board of Regents Approved Executive Biennium Budget.

Maintaining a sustainable Hawaii that provides a safe, secure, healthy life for all people in our fragile island represents an unprecedented challenge of our time. We live on a planet that has a finite supply of resources and carrying capacity, and in less than a century, we have nearly exhausted millions of years of preserved energy resources. We are equally facing mounting challenges such as food security, energy security, climate change, environmental pollution, water quality and quantity, among many others that are endangering the very survival of mankind. This is critically important for geographically isolated islands like Hawaii. Thus, of HB 2180 HDI, relating to *New Technologies for Sustainable Agriculture Pilot Project* will play critical role to help us address many of the aforementioned challenges.

The term “**sustainability**” or “**sustainable development**”, which was coined by World Commission on Environment and Development in 1987 and is defined as “*A process of change in which the exploitation of resources, the direction of investments, the orientation of technical development, and institutional change are all in harmony and enhance both current and future potential to meet needs and aspirations.*” In other words, sustainability essentially refers to meeting the needs of the present without compromising the ability of future generations to meet their own needs. The grand challenges that we are facing today cannot be solved by political or social reforms alone, but rather, it requires the implementation of science and technology. I believe we also need to educate our students and general public about the basic principles of sustainability through “***Involvement, Engagement and Exploration, and through system approaches.***” Thus, the *New Technologies for Sustainable Agriculture Pilot Project* will essentially serve as a ***Learning and Discovery Center*** for our middle/high school students as well as our undergraduate and graduate student who would be able to learn sustainability, bioenergy, value-added products, and waste remediation thereby enhancing their ***Science, Technology, Engineering and Mathematics (STEM) skills***. The center will also be a training platform for our undergraduate and graduate students who would join the workforce in agricultural sectors in the state.

This testimony does not represent the position of the University of Hawaii.

Written Personal Testimony Presented
Before the House Committees on Agriculture & Higher Education
Thursday, March 13, 2014
by
Eunsung Kan
Assistant Professor
College of Tropical Agriculture and Human Resources
University of Hawai'i at Mānoa

HB 2180 RELATING TO AGRICULTURE

I am so pleased to testify **in support of HB 2180 HD1**, which would fund a pilot project at the College of Tropical Agriculture and Human Resources, University of Hawai'i at Mānoa.

My name is Eunsung Kan. I am an assistant professor at College of Tropical Agriculture and Human Resources, UH Mānoa. I have been teaching and researching wastewater/water treatment, reuse of wastewater and environmental health at UH Manoa.

However, today, I am providing personal testimony regarding HB 2180. I strongly support this bill because it will definitely fund several pilot projects to clean up the contaminated water resources used for agricultural irrigation and generate biofuels from organic wastes in Hawaii.

Agriculture in Hawaii has faced critical challenges such as contaminated water resources, water scarcity, toxic waste in surface/ground waters and high energy costs. These limitations have resulted in serious problems in agricultural productivity, food safety, environmental sustainability, and ultimately economical profitability of farming and ranching in Hawaii.

HB 2180 supports several projects including my research project which will clean up the land, sea water, sediments and groundwater contaminated by toxic contaminants while providing clean and safe water to local farms, ranches and residents.

As seen in other states, the land, ground water and coastal areas in Hawaii are fully contaminated with endocrine disruptors and pharmaceutical wastes which cause disruption of human hormone systems and various cancers at very low concentration. The current reports showed many municipal wastewater treatment plants hardly removed these pollutants which contaminated our water resources. As an effort to solve this problem, my pilot project (the solar light and biological systems to treat the toxic contaminants in coastal area, sediments and groundwater) is

proposed as one of the projects in HB 2180. This project will remove the endocrine disrupting compounds and pharmaceutical wastes completely to protect water sources for local agriculture and drinking water. Thus, it will help to provide clean and safe water to local agricultural industries and residents. It will be an outstanding model to demonstrate clean and environmentally sustainable water management for agricultural industry in Hawaii.

In overall, I would like to support HB 2180 which will benefit the local farms, local community and the State of Hawaii.

Thank you so much.

Written Testimony Presented Before the
Senate Committee on Higher Education and Senate Committee on Agriculture
Thursday, March 13, 2014; 2:35 pm

By

Wei Wen Su

HB 2180 HD1 RELATING TO AGRICULTURE

Chairs Taniguchi and Nishihara, Vice Chairs Kahele and Kouchi, and members of the Senate Committees on Higher Education and Agriculture, I thank you for this opportunity to provide my personal testimony in support of HB 2180 HD1, which would fund a pilot project at the College of Tropical Agriculture and Human Resources, University of Hawai'i at Mānoa, to create new technologies for sustainable agriculture in the State through scientific research and support services.

My name is Wei Wen Su, and I am a faculty member in the College of Tropical Agriculture and Human Resources, the University of Hawaii at Mānoa. I am pleased to provide personal testimony today on HB 2180 HD1, and this testimony does not represent the position of the University of Hawaii.

As a researcher in agricultural technology, and as a long-time resident of the State of Hawaii, I strongly support this bill provided that its passage does not replace or adversely impact priorities as indicated in the University's Board of Regents Approved Executive Biennium Budget.

It is important for the State of Hawaii to invest in development of state-of-the-art technologies that advance both environmental sustainability and the economic vitality of Hawaii's agriculture community. Converting agricultural wastes and byproducts into value-added products, energy, and alternative fuels using environmentally sustainable and cost effective technologies has the clear potential to not only solve possible environmental pollution problems posed by agricultural wastes, but also generates additional revenue streams for local agriculture.

The research and development activities proposed in bill HB 2180 HD1 will help achieve this noble goal, to create a cleaner and healthier Hawaii.

Written Testimony Presented Before the
Senate of Higher Education and
Senate of Agriculture
Thursday, March 13, 2014; 2:35 pm
by
Devin Takara, Ph.D.
Jr. Researcher
College of Tropical Agriculture and Human Resources
University of Hawai'i at Mānoa

Members of the Senate of Higher Education and Senate of Agriculture, I humbly thank you for granting me this rare opportunity to express my utmost, strongest support of HB 2180, which would grant funding for the pilot-scale project aimed at demonstrating and facilitating new technologies for sustainable agriculture in Hawaii through scholarly research and support services. I would like to state here that my written testimony below represents my personal opinion and does not reflect the priorities or official interests of the University of Hawai'i at Mānoa or its constituents.

In the last five years, my academic training has rigorously focused on the technical aspects pertaining to the project described in this bill (HB 2180), however, it is my intention, through this testimony, to offer a slightly different opinion from the perspective of an individual born, raised, and educated (from elementary to post-graduate level) in the state of Hawaii. As I am sure that my colleagues, mentors, and superiors will attest to, the research implications of the proposed pilot project will undoubtedly facilitate procurement of future funding from federal and non-governmental entities, however, there also exists a unique opportunity to utilize the facility as an educational component to advocate for interest in science, technology, engineering, and mathematics (STEM) for kindergarten to twelfth graders. It has been my personal experience that early exposure and excitement in science leads to post-graduate education and an insatiable desire to push the boundaries of cutting edge technology. By establishing a functioning, pilot-scale remediation and energy production facility, it is possible to demonstrate state-of-the-art technology to the local children and communities to win public support and showcase what the future of Hawaii may look like. In addition, the implications of remediating waste in the nearby area will be evident through the displacement of organic material that would otherwise be discarded to Hawaii landfills.

Thus, in addition to the inherent and innumerable ecological benefits that the proposed project can deliver (namely bioremediation of organic waste with the simultaneous co-generation of clean, bioenergy to promote Hawaii's sustainable independence), I am in strong support of developing interest and excitement in Hawaii's youth and public to further advance the technologies that we have available today. Many thanks and much mahalo for your time and in allowing me to voice my support for HB 2180.