

NEIL ABERCROMBIE
Governor



SCOTT E. ENRIGHT
Chairperson, Board of Agriculture

KEN H. KAKESAKO
Deputy to the Chairperson

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 South King Street
Honolulu, Hawaii 96814-2512
Phone: (808) 973-9600 FAX: (808) 973-9613

**TESTIMONY OF SCOTT E. ENRIGHT
CHAIRPERSON, BOARD OF AGRICULTURE**

**BEFORE THE SENATE COMMITTEE ON WAYS AND MEANS
FRIDAY, MARCH 28, 2014
9:25 A.M.
Conference Room 211**

**HOUSE BILL NO. 2180 HD 1
RELATING TO AGRICULTURE**

Chairperson Ige and Members of the Committee,

Thank you for the opportunity to provide testimony on HB 2180 HD1 relating to agriculture. This bill appropriates funds to the University of Hawaii, College of Tropical Agriculture and Human Resources (CTAHR) for a pilot project to create new technologies for sustainable agriculture in the State through scientific research and support services. The Hawaii Department of Agriculture (HDOA) supports the intent of this bill, but defers to CTAHR as to the appropriate funding amount.

Sustainable agriculture practices are an essential component of food security in Hawaii, and the HDOA is pleased that this measure supports and promotes research on new technologies for sustainable agriculture practices.

Thank you, again, for the opportunity to testify on this measure.





P.O. Box 253, Kunia, Hawai'i 96759
Phone: (808) 848-2074; Fax: (808) 848-1921
e-mail info@hfbf.org; www.hfbf.org

March 28, 2014

HEARING BEFORE THE
SENATE COMMITTEE ON WAYS AND MEANS

TESTIMONY ON HB 2180, HD1
RELATING TO AGRICULTURE

Room 211
9:20 AM

Aloha Chair Ige, Vice Chair Kidani, and Members of the Committee:

I am Christopher Manfredi, President of the Hawaii Farm Bureau (HFB). Organized since 1948, the HFB is comprised of 1,832 farm family members statewide, and serves as Hawaii's voice of agriculture to protect, advocate and advance the social, economic and educational interests of our diverse agricultural community.

HFB supports the intent of HB 2180, HD1 which appropriates funds for the creation of a pilot project to create new technologies for sustainable agriculture at the University of Hawaii CTAHR through scientific research and support services. We agree that these technologies could benefit Hawaii's agricultural industry, especially as it evolves into the production of new food and energy crops.

Sustainable farming in Hawaii is certainly not a new idea. Most people don't realize that the Hawaii sugar industry was a world leader in sustainable agriculture from its inception well over a century ago. Nothing went to waste; flowing stream water from rainfall is still used today to produce clean renewable hydroelectricity, reducing the use of fossil fuels, before it's used to irrigate the crop. The innovation and use of drip irrigation greatly reduced waste of precious water supplies by allowing the delivery of a precise amount of water directly to the root of the sugarcane plants. Often, water used to wash the cane as it comes into the mill is recycled by sending it back out to the fields to irrigate the next crop. After extracting the sugar from the plant, the residual cane fiber, or bagasse, is burned in the mill to produce energy to run the factory and also supply energy to the community.

Development of new farming practices and technologies that improve farming viability, protect the land, and make wise use of the State's natural resources, while increasing our energy self-sufficiency is necessary as Hawaii moves to increase its food security. HFB supports the concept of this project and is interested to learn more about its details. Thank you for the opportunity to comment on this measure.

Written Personal Testimony Presented
Before the House Committees on Agriculture & Higher Education
Friday, March 28, 2014; 9:25 AM
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.



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Written Testimony Presented Before the
Senate Committee on Ways and Means
Friday, March 28, 2014 at 9:25 am

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

Chair Ige, Vice Chair Kidani, and members of the Senate Committee on Ways and Means, 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 O'ahu, 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.

HB 2180 HD1 RELATING TO AGRICULTURE

Dear Honorable members of the Senate Committees on Higher Education and Agriculture, thank you for allowing me to submit a brief testimony in support of HB 2180 HD1, which would fund a pilot project at the University of Hawaii's College of Tropical Agriculture and Human Resources (UH-CTAHR) to invent technologies for waste remediation and sustainable agriculture in Hawaii by harnessing faculty research expertise and cutting edge biological methods.

My name is David Christopher, Professor and Chair of the Department of Molecular Biosciences and Bioengineering at UH-CTAHR.

I strongly support this bill because it is critical in an Island environment that we are able to convert agricultural wastes for developing into useful and valuable products. Substantial financial inputs go into food and ornamental plant production, and the inherent wastes can be converted into bioenergy fuels, useful materials and prevent them from being disposed and or ending up in the environment. Essentially reducing their impacts, and providing for sustainable systems.

The research objectives will achieve a more sustainable agriculture and cleaner environment in a cost saving manner.

Thank you.

Written Testimony Presented before the
Senate Ways and Means Committee
Friday, March 28, 2014

by

Russell S. Yost, Ph.D.

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 thank you for the opportunity to express my 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. My written testimony represents my personal opinion and does not reflect the priorities or official interests of the University of Hawai'i at Mānoa or its constituents.

The goal and objective of the projects described in this bill are precisely the same as the research that I have been committed to during the last 10 years – that of finding and testing ways to control and benefit from the management of wastes generated in the course of agricultural production. Such options are critical to the food security, economic well-being, and the environmental health of the Islands. The establishment of pilot scale technologies as indicated in this bill permits the bringing of new technology to the islands both in support of current threats to sustainability and to provide tested options for threats to sustainability not yet encountered. These technologies also provide concrete illustration of the power of science to support, assist and improve island societies such as ours to deal with and anticipate solutions to threats to environmental health. The educational value of such illustrations of scientific technology in the support and improvement of society are a powerful example and challenge to our youth as they develop awareness of ways to improve their society.

I am in strong support of developing these advanced technologies in support of island society. Mahalo for your time and in allowing me to voice my support for HB 2180.

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 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 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 *New Technologies for Sustainable Agriculture Pilot Project* will also 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 Testimony Presented Before the
SENATE COMMITTEE ON WAYS AND MEANS
Friday, March 28, 2014; 9:25 am

By

Wei Wen Su

HB 2180 HD1 RELATING TO AGRICULTURE

Chair Ige, Vice Chair Kidani, and members of the Senate Committee on Ways and Means, 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.