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PHYLLIS SHIMABUKURO-GEISER
Chairperson, Board of Agriculture

State of Hawaii
DEPARTMENT OF AGRICULTURE
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**TESTIMONY OF PHYLLIS SHIMABUKURO-GEISER
CHAIRPERSON, BOARD OF AGRICULTURE**

**BEFORE THE HOUSE COMMITTEES ON AGRICULTURE AND ECONOMIC
DEVELOPMENT & BUSINESS**

**MARCH 13, 2019
9:35 A.M.
CONFERENCE ROOM 309**

**SENATE BILL NO. 1436 SD2
RELATING TO AGRICULTURE**

Chairpersons Creagan and McKelvey and Members of the Committees:

Thank you for the opportunity to present testimony on Senate Bill 1436 SD2 that requires the Department of Agriculture to conduct a study on the feasibility of authorizing the Department to establish and designate “ag-tech” zones in the Kalihi-Palama, Kakaako, Moanalua, and the Waianae coast areas. The Department is to request the assistance and resources of the departments of Land and Natural Resources, and Business, Economic Development, and Tourism; the University of Hawaii; the Hawaii Community Development Authority; and the City and County of Honolulu. There is a two-year appropriation and the feasibility study is to be submitted to the 2020 Legislature. The purpose of an “ag-tech” zone is to promote technological innovation in agriculture to increase food production in a more effective and environmentally responsible way that also contributes to State revenues. The Department of Agriculture offers comments.

The Department is concerned about redirecting our very limited departmental resources away from current duties and responsibilities to undertake the many tasks specified in this measure in a comprehensive and realistic manner. The Department supports all forms of agricultural production including small-scale niche operations. The Department supports the development and integration of technology to all agricultural



practices to help reduce irrigation needs, increase yields and quality, and to reduce the need to apply soil supplements and pesticides. While some crop and animal production and businesses prosper in their unique situations in urban Honolulu, the resources that are to be allocated to the endeavor expressed in this bill should reflect its likely contribution to Hawaii's overall food self-sufficiency.

A quick online search on urban farming and agriculture technology in Honolulu shows that MetroGrow in Kakaako grows lettuce and micro greens for restaurants and organic food retailers. The Institute for Human Services in Iwilei has a rooftop aquaponics and hydroponics operation that produces 100 pounds of leafy vegetables per month and about 50 pounds of tilapia every two months. Most of their product is made into meals for their clients. Smart Yields is a technology startup that seeks to improve small to medium sized indoor farms increase productivity by combining field environmental sensors with real-time data monitoring, and digital record-keeping to correlate crop performance with environmental conditions.

Relevant to the purpose of this bill and its application in the targeted areas on Oahu is a 2016 report from the Center for a Livable Future at Johns Hopkins University. The report concluded that growing food in cities has benefits, and urban farming plays a role in community health and development, but it is insufficient as a unique tool to address food insecurity and dietary quality.

Thank you for the opportunity to testify on this measure.



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Testimony Presented Before the
House Committee on Agriculture

And

House Committee on Economic Development and Business

Wednesday, March 13, 2019 at 9:35 a.m.

By

Nicholas Comerford

Dean, College of Tropical Agriculture and Human Resources

And

Michael Bruno

Interim Vice Chancellor for Academic Affairs

Vice Chancellor for Research

University of Hawai'i at Mānoa

SB 1436 SD2 – RELATING TO AGRICULTURE

Chairs Creagan and McKelvey, Vice Chairs DeCoite and Kitagawa and members of the House Committee on Agriculture and the House Committee on Economic Development and Business:

Thank you for the opportunity to testify on SB 1436 SD2 relating to agriculture that requires the Department of Agriculture (DOA) to conduct a feasibility study on the establishment of agricultural technology zones, or ag-tech zones, within the City and County of Honolulu and appropriates funds to conduct the feasibility study. The University of Hawai'i at Mānoa, College of Tropical Agriculture and Human Resources (CTAHR) supports the intent of this bill and we respectfully provide the following information to substantiate our position.

CTAHR is in agreement with the legislature that protected agriculture should be a strong future vision for Hawai'i. Some of the benefits of growing food under controlled conditions include the following:

- increased biosecurity and reduced danger from diseases and insects result in a reduced need for pesticides, but understand that it does not remove the need for pesticides;
- reduced use of water;
- increased production per square foot of land as there are examples of vertical farming that produce as much as 400 times more than a square foot of farm land;
- the ability to control the entire agroecosystem;
- the ability to reduce labor, yet increase the skill of those working in these operations with the need for degree programs that plan for this eventuality; and,

- increased ease of meeting both Good Agricultural Practices certification and the U.S. Department of Agriculture Food Safety Modernization Act laws.

However, there are difficulties that will have to be overcome:

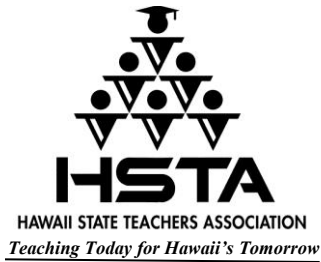
- the high cost of land/rent in Hawai'i;
- the high cost of energy;
- the necessary capital investment; and,
- knowing the appropriate scale and break-even point to generate a profit.

A feasibility study is the most appropriate approach at this time, particularly due to the challenges mentioned above. CTAHR would be one of those University of Hawai'i units that could possibly be involved by providing input to DOA on pest management and horticultural inputs.

Such a study is needed to better understand the current status of individual food imports, which at this time is only an estimate. This will be necessary since a feasibility study would want to understand what crops are to be grown; as this affects the cost of inputs.

It also needs to be recognized that such a study, when done right, can be expensive as it requires significant labor and expertise.

Thank you for the opportunity to submit testimony.



Corey Rosenlee
President
Osa Tui, Jr.
Vice President
Logan Okita
Secretary-Treasurer
Wilbert Holck
Executive Director

TESTIMONY BEFORE THE HOUSE COMMITTEES ON AGRICULTURE AND
ON ECONOMIC DEVELOPMENT & BUSINESS

RE: SB 1436, SD2 - RELATING TO AGRICULTURE.

WEDNESDAY, MARCH 13, 2019

COREY ROSENLEE, PRESIDENT
HAWAII STATE TEACHERS ASSOCIATION

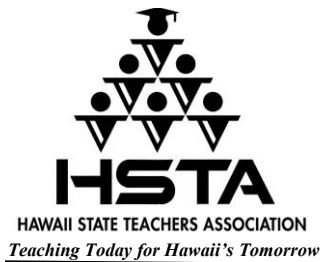
Chair Creagan, Chair McKelvey, and Members of the Committees:

The Hawaii State Teachers Association **supports SB 1436, SD2**, relating to agriculture.

This purpose of this Act would be to require the Department of Agriculture to conduct a feasibility study on the establishment of ag-tech zones within the City and County of Honolulu and appropriates funds for conducting the feasibility study. It also would also protect and expand Hawaii's agricultural production for in-state consumption and export; create a new industry that recognizes and responds to the challenges of the future of food production in context of population growth, recruit and train Hawaii's youth for the new agricultural economy, and promote vertical farming techniques that reduce the use of water and pesticides. These goals are for our future. **Our students are our future and exploring the feasibility of ag-tech in Hawaii will help us expand the agricultural careers in our state that will be available for our students when they become adults.**

With limited land in our state, we need to study the feasibility of vertical farming, such as AeroFarms in New Jersey, with its sixty-nine thousand square foot facility, has demonstrated the potential of vertical farming to grow healthy fruits and vegetables and to spur economic activity at the same time. According to Cornell University and the University of California, "Every year, AeroFarms has the potential to produce up to thirty harvests and yield two million pounds of greens. In comparison, a traditional outdoor farm in New York state produces about three lettuce harvests in a good year."

We need to restore the balance in our public educational system in Hawaii. **Hawaii's Career and Technical Education programs need to be expanded to provide greater opportunity to prepare young people to design their**



Corey Rosenlee
President

Osa Tui, Jr.
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Logan Okita
Secretary-Treasurer

Wilbert Holck
Executive Director

own futures. The agriculture workforce needs have changed over time, and expanding our ag-tech industry, and exploring the feasibility of vertical farming is ideal for our islands as it incorporates sustainability in agriculture that will help Hawaii. According to the Hawaii Agriculture Skill Panel Report from the Workforce Development Council, the average age of Hawaii's commercial farmers is over 60 years old. Interest in agriculture is waning in our youth and this is worrisome to the industry and to the economy and self-sustainability of our state.

There is a common misconception that farming is a low-paying, low-skilled trade. Our youth need to understand that there are a variety of careers within the agricultural industry that need to be filled. They need more workers that are not only technical in nature, but also those who will help to solve the problems listed in the report such as developing new technology and developing ideas for innovation that are critical components to the growth and expansion of the agricultural industry in Hawaii, especially in the areas of sustainability.

Passage of this bill would help provide our youth with opportunities to gain the knowledge they need to promote ag-tech career paths as a possible career choice.

Hawaii, like most states, is working toward the goal of getting their students 'college-and career-ready,' but CTE experts are concerned that what we mean by 'career-ready' is not always clear, and the supply of quality career-technical education programs has not kept pace with demand. Students must have several options available to them in order to explore a variety of career options, one of them being in innovation in agriculture. This bill supports these efforts.

According to a national study, *The Shocking Truth About The Skills Gap* (2015), only 25 percent of polled job seekers reported receiving career path in high school, and 41 percent said they wished they had received more guidance.

Because a robust education involves developing all aspects of learning for our ever-changing world including the changes in agriculture, the Hawaii State Teachers Association asks your committee to **support** this bill.



Testimony of
MetroGrow Hawaii
Kerry Kakazu, Ph.D., President

To the
House Committee on Agriculture
Rep. Richard P. Creagan, Chair
Rep. Lynn DeCoite, Vice Chair

House Committee on Economic Development & Business
Rep. Angus L.K. McKelvey, Chair
Rep. Lisa Kitagawa, Vice Chair

DATE: Wednesday, March 13, 2019
TIME: 9:35 a.m.
PLACE: Conference Room 309
State Capitol
415 South Beretania Street

Chairs Creagan and McKelvey and Members of the Committees:

Measure: S.B. No. 1436

Title: RELATING TO AGRICULTURE

Description: Requires the department of agriculture to conduct a feasibility study on the establishment of ag-tech zones within the city and county of Honolulu. Appropriates funds to conduct the feasibility study.

Position: MetroGrow Hawaii is in support of this measure.

Testimony: Thank you for the introduction of S.B. 1436 to authorize and fund a feasibility study for ag-tech zone development in Honolulu. I am the owner and president of MetroGrow Hawaii, the first indoor hydroponic vegetable farm in Hawaii and am in full support of this measure. As the measure recognizes, vertical farms are able to produce vegetables in a fraction of the space and with approximately 5 - 10% of the water required for traditional agriculture. The enclosed environment of vertical farms allows them to control light, temperature, humidity and other variables to optimize the growing conditions for crops and thereby maximize productivity and quality. The controlled environment also negates unpredictable weather conditions, minimizes pest and disease problems and the need to use pesticides, and prevents contamination from chemical or biological agents.

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<http://metrogrowthawaii.com>

Decreases in arable land, changing climate, reduction of fresh water availability and the tremendous pest pressures in Hawai'i necessitate research and development of alternative forms of agriculture. Vertical farming and other forms of protected agriculture that incorporate technological innovation can supplement traditional growing systems to increase local food production and move the state toward food self-sufficiency. Technology driven growing operations are capital and energy intensive so government support to encourage and incentivize these businesses are essential to their success. The establishment of ag-tech zones is an important step to provide that support.

Based on my challenges as a start-up company in Kakaako since 2013 and the research I have done on other urban and vertical farm operations I can envision a number of incentives that can promote future ag-tech development in Honolulu. They include:

- Allow industrial or other commercial zoned properties to be utilized for agricultural production
- Provide low cost leases for underutilized state properties for indoor agriculture
- Provide tax or other financial incentives to private property owners that develop urban farming operations on their properties
- Aggregate agricultural business support services in ag-tech zones
- Provide low cost financing specifically for agricultural technology businesses
- Develop grants-in-aid programs for innovative agricultural companies
- Provide preferred electricity rates for commercial farming operations
- Provide additional tax credits for renewable energy systems on farms
- Extend agricultural water rates to vertical farmers
- Provide tax credits or other financial rewards for use of energy and water conservation technology on farms
- Provide funds or incentives for educational and job-training programs on vertical farms

I believe that all these incentives would assist agricultural technology development with minimal impact on state resources. The investment in this area would allow vertical farms and other agricultural businesses to increase high quality, fresh and nutritious local food supply at reasonable prices. Increased local vegetable supply will promote better eating habits that can translate into a healthier community. Locally produced food outside of our typical agricultural land areas would help reduce the environmental impact of intensive agriculture on the land and reduce food transportation costs. A shift to more protected, urban, technology-driven agriculture can also encourage more young people to consider farming as a potential career.

I applaud the legislature for their recognition of the benefit that new agricultural paradigms can provide to our state and strongly encourage that this development continues with the passage of S.B. 1436. MetroGrow Hawaii will be happy to provide any assistance to these efforts. Thank you very much.

SB-1436-SD-2

Submitted on: 3/12/2019 9:15:24 AM

Testimony for AGR on 3/13/2019 9:35:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Melodie Aduja	O`ahu County Committee on Legislative Priorities of the Democratic Party of Hawai`i	Support	No

Comments:

HOUSE OF REPRESENTATIVES
THE THIRTIETH LEGISLATURE
REGULAR SESSION OF 201
COMMITTEE ON AGRICULTURE

Rep. Richard P. Creagan, Chair

Rep. Lynn DeCoite, Vice Chair

COMMITTEE ON ECONOMIC DEVELOPMENT & BUSINESS

Rep. Angus L.K. McKelvey, Chair

Rep. Lisa Kitagawa, Vice Chair

DATE: Wednesday, March 13, 2019

TIME: 9:35am

PLACE: Conference Room 309

Hearing **SB1436 SD2**

POSITION: STRONG SUPPORT SB1436 SD2, with proposed amendments

Thank you for the opportunity to provide written testimony on House SB1436 SD2. I am strongly in favor of SB1436 SD2. Hawaii needs to look for more innovative ways toward food production without forgetting about our long history of protecting agricultural workers from decisions that provide benefits in the short term only to heap cost on the future. I feel this bill moves in the right direction striking a balance between integrating technology while supporting current and future agricultural workers.

This bill also addresses the need for Hawai'i to protect its food production since the onset of Rat Lung Worm Disease and other outside influences which has the potential to damage the reputation of Hawaii produced goods as well as diminish our domestic food supply.

Furthermore, this bill will seek to bring in the youth to see working in agriculture as a viable career pathway for youth that would like to pursue careers that are CTE through the innovative ways of using technology toward agricultural development.

In closing one of the most powerful reason to support this bill is it's potential to massively increase food production in urban Honolulu. This is right step toward building up our states food reliance and, possibly grow an export market which highlight made in Hawaii goods in which a new industry can be created, this bill is vital to our food security here in Hawai'i.

Suggested Amendments:

Paragraph 2 of Section 1 to be amend as read:

The legislature further finds that ~~large conventional farming operations use pesticides that damage the State's fragile ecosystem. The pesticides enter the water and land resources of the State and find their way into the ocean.~~ the State's food security is also compromised by ~~other~~ factors, such as the rat lungworm, which is a disease-causing nematode that may result in long-term disability and consequently diminish an affected person's ability to earn a living.

Insert new paragraph under current Section 1 paragraph 3 to be amend as read:

The legislature additionally finds that the State must explore more effective and environmentally responsible ways to increase food production to feed its residents. Agricultural technology, or ag-tech, should be at the forefront of the effort to revitalize the agricultural sector of the State and develop that industry's potential to be a major contributor to state revenue.

The legislature finds that Hawai'i in the past, has had a vibrant agricultural past which in concert with labor movements has expanded the Hawai'i middle-class exporting fruits and other food items throughout the world and will not play a vital role in our contemporary food security needs.

Thank you for reading this testimony and please consider these amendments to strengthen this bills intent.

Mahalo,

Ken Farm