

DAVID Y. IGE  
Governor

JOSH GREEN  
Lt. Governor



PHYLLIS SHIMABUKURO-GEISER  
Acting Chairperson  
Board of Agriculture

State of Hawaii  
**DEPARTMENT OF AGRICULTURE**  
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TESTIMONY OF THE DEPARTMENT OF AGRICULTURE  
BEFORE THE SENATE COMMITTEES ON AGRICULTURE & ENVIRONMENT AND  
TECHNOLOGY

FEBRUARY 8, 2019  
1:45 P.M.  
ROOM 224

SENATE BILL NO. 1436  
**PHYLLIS SHIMABUKURO-GEISER**

Chairpersons Gabbard and Keohokalole and Members of the Committees:

Thank you for the opportunity to testify on Senate Bill 1436 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 urban areas of Honolulu 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.

**THE SENATE**

THE THIRTIETH LEGISLATURE

COMMITTEE ON AGRICULTURE AND ENVIRONMENT

Senator Mike Gabbard, Chair

Senator Russell E. Ruderman, Vice Chair

COMMITTEE ON TECHNOLOGY

Senator Jarrett Keohokalole, Chair

Senator J. Kalani English, Vice Chair

REGULAR SESSION OF 2019

**POSITION: STRONG SUPPORT SB1436**

Thank you for the opportunity to provide written testimony on House SB 1436. I am strongly in favor of House SB 1436.

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.

Mahalo,

Ken Farm

**SB-1436**

Submitted on: 2/4/2019 11:45:46 AM

Testimony for AEN on 2/8/2019 1:45:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Autumn Ness	Testifying for Hawai'i Center for Food Safety	Support	No

Comments:



# UNIVERSITY OF HAWAII SYSTEM

## Legislative Testimony

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Testimony Presented Before the  
Senate Committee on Agriculture and Environment  
Senate Committee on Technology  
Friday, February 8, 2019 at 1:45 p.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 – RELATING TO AGRICULTURE

Chairs Gabbard and Keohokalole, Vice Chairs Ruderman and English and members of the Senate Committee on Agriculture and Environment and Committee on Technology.

Thank you for the opportunity to testify on SB 1436 relating to agriculture that requires the Hawai'i Department of Agriculture to conduct a feasibility study on the establishment of ag-tech zones in 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 would possibly be involved in the feasibility study given our expertise in horticulture, entomology and plant pathology; and our recent hires in agricultural economics. CTAHR stands ready to assist where needed.

Thank you for the opportunity to submit testimony.

**SB-1436**

Submitted on: 2/7/2019 1:42:41 PM

Testimony for AEN on 2/8/2019 1:45:00 PM

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

Comments:



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

To the  
**Senate Committee on Agriculture And Environment**  
Senator Mike Gabbard, Chair  
Senator Russell E. Ruderman, Vice Chair

**Senate Committee on Technology**  
Senator Jarrett Keohokalole, Chair  
Senator J. Kalani English, Vice Chair

DATE: Friday, February 8, 2019  
TIME: 1:45 p.m.  
PLACE: Conference Room 224  
State Capitol  
415 South Beretania Street

Chairs Gabbard and Keohokalole 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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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**

Submitted on: 2/3/2019 1:05:20 PM

Testimony for AEN on 2/8/2019 1:45:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Alan B Burdick	Individual	Support	No

## Comments:

I strongly support SB 1436, which would require the Department of Agriculture to study the feasibility of AgTech zones in the City and County of Honolulu. We need to "think outside the box" when it comes to promoting sustainable agriculture in Hawaii, a small, overpopulated and very isolated land mass in the middle of the Pacific. This bill would help promote such thinking in what appears to be a very promising direction.

Thank you for the opportunity to testify on this potentially important bill.

Alan B. Burdick

Burdick808@gmail.com

**SB-1436**

Submitted on: 2/1/2019 6:41:56 PM

Testimony for AEN on 2/8/2019 1:45:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Karen Winslow	Testifying for Hawaii Farmers Union	Support	No

Comments:

**SB-1436**

Submitted on: 2/6/2019 12:51:13 PM

Testimony for AEN on 2/8/2019 1:45:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Tyler Dos Santos-Tam	Individual	Support	No

Comments: