

**SCR 151**

**DAVID Y. IGE**  
Governor

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Lt. Governor



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Deputy to the Chairperson

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

**BEFORE THE SENATE COMMITTEE ON AGRICULTURE & ENVIRONMENT**

**MARCH 24, 2017  
1:20 P.M.  
CONFERENCE ROOM 224**

**SENATE CONCURRENT RESOLUTION NO. 151/ SENATE RESOLUTION NO. 72  
REQUESTING THE DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT,  
AND TOURISM, IN CONJUNCTION WITH THE DEPARTMENT OF AGRICULTURE,  
TO STUDY THE ECONOMIC IMPACTS OF VERTICAL FARMING OPERATIONS.**

Chairperson Gabbard and Members of the Committee:

Thank you for the opportunity to testify on S.C.R. No. 151/ S.R. No. 72. This resolution requests the Department of Business, Economic Development, and Tourism and the Department of Agriculture to study the economic impacts of vertical farming operations. Specifically, the study is to focus on food production, potential for job creation opportunities, and identifying areas in urban settings that can be used for vertical farming. The Department of Agriculture offers comments.

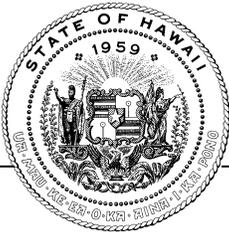
The resolution identifies other countries such as Singapore who have had success with vertical farming operations. A snapshot comparison with Hawaii may explain some of that success. The island of Singapore has a population of 5 million living within 274 square miles of land area of which 250 acres (4/10ths square mile) is farmland. Oahu has a population of about a million, an area of 597 square miles, has 40,000 acres of high-quality agricultural land (64.5 square miles).



To our knowledge, MetroGrow Hawaii's 800-square foot indoor "aeroponic" operation located in Kakaako is the only commercial vertical farming operation on Oahu. The company grows niche crops in an air-conditioned, LED lit environment that is free of diseases and pests. The vegetables grown are sold to high-end restaurants and herbology stores. MetroGrow Hawaii's owners stated that high rent and energy costs comprises the major production costs. Oahu has about 1,000, farms using approximately 384,000 acres, employing about 3,500 farm laborers, and earned about \$161 million from sales of their products (2012 Census of Agriculture – County Data – Tables 2, 6, 7, 8).

The Department agrees that new ideas for fresh food production should be welcomed, particularly in the context of improving our food self-sufficiency situation. At the same time, we need to recognize and celebrate Hawaii's conventional farmers who do their best to produce fresh food in soil while continually being challenged by land rent, labor, inputs, pest and disease control, and competition from sources overseas.

Thank you for the opportunity to present testimony.



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DAVID Y. IGE  
GOVERNOR

LEO R. ASUNCION  
DIRECTOR  
OFFICE OF PLANNING

Statement of  
**LEO R. ASUNCION**  
Director, Office of Planning  
before the  
**SENATE COMMITTEE ON AGRICULTURE AND ENVIRONMENT**  
Friday, March 24, 2017  
1:20 PM  
State Capitol, Conference Room 224

in consideration of  
**SCR 151/SR 72**  
**RELATING TO THE ECONOMIC IMPACTS OF  
VERTICAL FARMING OPERATIONS**

Chair Gabbard, Vice Chair Riviere, and Members of the Senate Committee on Agriculture and Environment.

The Office of Planning (OP) offers comments on Senate Concurrent Resolution 151 and Senate Resolution 72, which request the Department of Business, Economic Development, and Tourism (DBEDT), in conjunction with the Department of Agriculture (DOA), to study the economic impacts of vertical farming operations. The study will focus on food production, potential job creation opportunities, and identifying areas in urban settings that can be used for vertical farming.

OP concurs that vertical farming has some potential to increase specific crop yields in limited land space, and that Hawaii must entertain alternatives to its current agricultural operations by bringing in fresh ideas in connection with utilizing the aina and practicing responsible land stewardship. It is our understanding that crop production in vertical farming is limited in that it cannot produce slower-growing vegetables and grains, and thus it cannot supplant conventional agriculture.

OP does not necessarily agree that current agricultural practices in Hawaii that utilize traditional surface farming may be inefficient considering Hawaii's limited land space and high land costs. With the closure of sugar and pineapple plantations in Hawaii, there is an available supply of agricultural lands for pursuing diversified crops and other types of farming. Vertical farms may also have to compete with urban land uses close to urban points-of-distribution, which may also be expensive.

OP finds that vertical farming operations are still in their infancy in Hawaii, and a study on economic impacts may be premature due to their high production costs (lighting, heating and powering a vertical farming facility) which restrict the scaling up of production. As technology

progresses and operations becomes more energy-efficient locally, such a study may be warranted in the future.

We further note that OP and the DBEDT do not possess the necessary expertise to conduct studies in agricultural economics, agroecology or agribusiness.

Thank you for the opportunity to testify on this measure.

## Testimony

### In Strong Support SCR151

I write this testimony in support of SCR 151. Hawai'i is a state which has unique challenges that other states don't have to contend with. For example, since we are not a contiguous state, we are unable to use road transportation to deliver food or other goods from state to state. We rely on ocean shipping to maintain our food majority of food supplies.

There is an opportunity cost whenever land is developed for housing in lieu of farming or other type of agricultural pursuits. This has been a matter of contention and a delicate balancing act that state must do every time there is a permit for land development.

Vertical farming could be a possible solution to accommodate both housing development (which we are in desperate need for) and increasing our food safety concerns. Furthermore, Hawai'i needs to look at additional industries which have the ability to create jobs, possibly increase food exports and, food self-sufficiency.

According to the Association for Vertical Farming, one successful vertical farming operation in the United States produces 100 tons of leafy greens with an area of 15,000 square feet building which houses the farming operation. I feel that this warrants at the least a feasibility study to determine the efficacy of vertical farming in Hawai'i and what possible benefits it could have on Hawai'i.

Ken Farm

Member at Large

Kalihi-Palama Neighborhood Board

No. 15