



**GOV. MSG. NO. 1064**

EXECUTIVE CHAMBERS

HONOLULU

LINDA LINGLE  
GOVERNOR

July 11, 2007

The Honorable Colleen Hanabusa, President  
and Members of the Senate  
Twenty-Fourth State Legislature  
State Capitol, Room 409  
Honolulu, Hawaii 96813

Dear Madam President and Members of the Senate:

Re: House Bill No. 899 HD1 SD1 CD1

On July 10, 2007, House Bill No. 899, entitled "A Bill for an Act Relating to Integrated Strategies for Statewide Food and Energy Crop Production" became law without my signature, pursuant to Section 16 of Article III of the Constitution of the State of Hawaii.

House Bill 899 appropriates out of the general revenues of the State of Hawaii the sum of \$450,000 or so much thereof as may be necessary for fiscal year 2007-2008 to the University of Hawaii Center for Conservation Research and Training ("CCRT") for Phase 1 of a project to develop "best strategies consistent with comprehensive agricultural management practices to facilitate sustainable production of crops through long-term enhancement of soil quality using ecologically responsible means." I am told Phase 1 of the project would identify and test charcoal additive strategies to improve the nutrient levels in soils.

There are several concerns with this measure. This bill identifies Phase 1 of a research and development project without providing any insight into what subsequent phases may entail, or whether or not there will be subsequent phases. This raises both fiscal and programmatic concerns. The bill contains neither a plan of action nor recognizable outcomes for the funds invested. Further, it is unclear how the expenditure of moneys in fiscal year 2007-2008 would impact funding levels in subsequent fiscal years.

There appears to be doubt within the scientific community, as expressed in a number of journals and formal publications, as to whether using charcoal as a geologic carbon sequestration technique should be researched and developed at the expense of other environmentally sound, technologically feasible, and economically affordable solutions to climate change, such as improving energy efficient power generation, developing renewable energy, and protecting threatened forests.

Similarly, extensive research into using charcoal as a long-term enhancement of soil quality has been conducted by the U. S. Department of Agriculture and various agricultural

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research entities. It is unclear how the research proposed in this measure would not duplicate or overlap existing analyses. As the bill recognizes, the use of high carbon anthropogenic soil for agricultural purposes has been applied "since ancient times by indigenous communities in other tropical regions around the world." Thus, it is questionable whether the research contemplated in this measure would significantly help advance human understanding of this technology.

For the foregoing reasons, I allowed House Bill No. 899 to become law as Act 266 effective July 10, 2007 without my signature.

Sincerely,



LINDA LINGLE

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## A BILL FOR AN ACT

RELATING TO INTEGRATED STRATEGIES FOR STATEWIDE FOOD AND ENERGY  
CROP PRODUCTION.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:**

1           SECTION 1. The legislature finds that with growing  
2 concerns over Hawaii's dependence on fossil fuels to satisfy its  
3 agriculture and energy needs, it is increasingly in the State's  
4 best interest to address these problems through integrated  
5 strategies that are cost competitive. One solution to Hawaii's  
6 dependence on fossil fuels for fertilizer and energy is the  
7 utilization of charcoal produced locally from biomass as a  
8 permanent soil additive.

9           The Hawaiian Islands, particularly the older islands such  
10 as Kauai, have heavily-leached soils with very low nutrient  
11 content and almost no potassium or phosphorus available for  
12 potential uptake by vegetation or agricultural crops.  
13 Agricultural crop yields for use as food and clean energy  
14 feedstocks are strongly dependent on sufficient levels of  
15 available nutrients for plant uptake. Thus, a major determinant  
16 of a successful and sustainable agricultural venture in Hawaii  
17 will be achieving an adequate, sustainable fertilizer regime.



1           The use of biomass-derived charcoal as a tropical soil  
2 additive has been verified by modern science as a carbon  
3 negative process and used for agricultural purposes since  
4 ancient times by indigenous communities in other tropical  
5 regions around the world. Activities like charcoal formation  
6 are carbon negative in that carbon in the form of carbon dioxide  
7 or methane gas (greenhouse gases) can be permanently sequestered  
8 in the manufactured charcoal. This is significant because the  
9 combustion of fossil fuels for activities like transportation  
10 and electricity generation has led to unnaturally elevated  
11 concentrations of carbon dioxide and other greenhouse gases  
12 being released into the atmosphere. These gases persist in the  
13 atmosphere, trapping warm air that would otherwise have  
14 dispersed beyond the earth's atmosphere into space,  
15 unfortunately causing human-induced global warming. Formal  
16 economic models estimate that if we do not act now to counter  
17 human-accelerated global warming, the negative cost to global  
18 ecosystems, society, and our economy will likely be substantial.

19           It is possible that through the production process of  
20 biomass-derived charcoal for soil nutrient enhancement purposes,  
21 positive net energy may be produced to satisfy community  
22 electrical needs while at the same time reducing carbon dioxide



1 levels in the atmosphere. This process has the potential to not  
2 only assist in reducing Hawaii's dependence on petroleum-based  
3 products, but also decrease the absolute quantities of  
4 fertilizer that need to be applied to agricultural lands for  
5 crop production. This suggests that runoff from agricultural  
6 lands may in turn contain lower levels of nutrients that in high  
7 concentrations are known to have significant negative impacts on  
8 freshwater and marine ecosystems. Additionally, large  
9 quantities of carbon can potentially be sequestered through the  
10 production of charcoal soil enhancements, thereby permanently  
11 sequestering carbon-based greenhouse gases being emitted into  
12 the atmosphere and contributing to human-induced global warming.

13 Therefore, comprehensive agricultural management strategies  
14 would not only lead to long-term economic stability of Hawaii's  
15 agrarian-based industries, but also facilitate positive  
16 stewardship of state lands by reducing levels of contaminated  
17 sediments in statewide waterways and surrounding ocean waters,  
18 as well as greenhouse gases building up in the atmosphere  
19 causing accelerated global warming.

20 Further, integrated agricultural management strategies  
21 build partnerships between local communities and state and  
22 federal agencies and strengthen the overall economy as well as



1 statewide environmental protection efforts. State funds  
2 appropriated for the research and development of a pilot project  
3 and associated community outreach technologies have the  
4 potential to obtain matching federal funds from existing  
5 programs such as the Environmental Protection Agency, United  
6 States Department of Agriculture, United States Department of  
7 Energy, Farm Service Agency, and National Science Foundation.  
8 Investments from private industry may also be available due to  
9 the economic viability of taking these newly-emerging  
10 technologies quickly to market.

11 The purpose of this Act is to appropriate funds during  
12 phase 1 to develop and demonstrate ecologically-sustainable  
13 strategies to amend soil fertility for the production of clean  
14 energy feedstocks and food crops and to create public engagement  
15 mechanisms and tools to educate the public about sustainable  
16 agriculture issues faced by the state and move towards  
17 stakeholder consensus.

18 SECTION 2. During phase 1, scientists with the University  
19 of Hawaii center for conservation research and training shall  
20 conduct research and development, as well as monitor the  
21 ecological impact of strategies being researched and tested.  
22 This work shall identify and test charcoal additive strategies



1 consistent with integrated watershed management practices to  
2 establish the best means to improve the nutrient levels in  
3 soils, lessen the State's dependence on imported fossil fuels,  
4 sequester carbon in the atmosphere, and mitigate existing  
5 problems, such as nutrient flows into waterways.

6 The phase 1 integrated research of potential soil nutrients  
7 enhancement strategies and mechanisms conducted by stakeholders  
8 shall include but not be limited to:

- 9 (1) Physical, chemical, and biological soil  
10 characteristics;
- 11 (2) Carbon sequestration in relation to global warming;
- 12 (3) Software and web-based stakeholder engagement tools;
- 13 (4) Existing and future agricultural land uses;
- 14 (5) Relevant community organizations and functions; and
- 15 (6) Relevant state and federal institutional functions.

16 SECTION 3. There is appropriated out of the general  
17 revenues of the State of Hawaii the sum of \$450,000 or so much  
18 thereof as may be necessary for fiscal year 2007-2008 for the  
19 University of Hawaii center for conservation research and  
20 training during phase 1 to develop the best strategies  
21 consistent with comprehensive agricultural management practices  
22 to facilitate sustainable production of crops through long-term



1 enhancement of soil quality using ecologically-responsible  
2 means.

3 The sum appropriated shall be expended by the University of  
4 Hawaii center for conservation research and training for the  
5 purposes of this Act.

6 SECTION 4. This Act shall take effect on July 1, 2007.

