

JOSH GREEN, M.D.
Governor

SYLVIA LUKE
Lt. Governor



SHARON HURD
Chairperson, Board of Agriculture

DEAN M. MATSUKAWA
Deputy to the Chairperson

State of Hawai'i
DEPARTMENT OF AGRICULTURE
KA 'OIHANA MAHI'AI
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TESTIMONY OF SHARON HURD
CHAIRPERSON, BOARD OF AGRICULTURE

BEFORE THE SENATE COMMITTEE ON HIGHER EDUCATION

TUESDAY, MARCH 11, 2025
3:00 PM
CONFERENCE ROOM 229

HOUSE BILL NO. 1185, H.D. 2
RELATING TO AGRICULTURE

Chair Kim, Vice Chair Kidani and Members of the Committee:

Thank you for the opportunity to testify on House Bill 1185, H.D. 2. This bill aims to establish a plant-based building materials working group to study and report on how best to grow plants and develop plant-based building materials in Hawai'i. The Department of Agriculture (Department) appreciates this initiative, led by UH-CTAHR, and offers its support.

The Department recognizes that certain local plant-based materials have the potential to be processed into structural building materials for use in Hawai'i. Some of these building materials offer advantageous properties, such as increased strength, flexibility, and reduced weight compared to conventional steel or wood. We further acknowledge the potential to grow green jobs in Hawai'i.

Thank you for the opportunity to testify on this measure.





UNIVERSITY OF HAWAII SYSTEM

‘ŌNAEHANA KULANUI O HAWAII

Legislative Testimony

Hō'ike Mana'o I Mua O Ka 'Aha'ōlelo

Testimony Presented Before the
Senate Committee on Higher Education
Tuesday, March 11, 2025 at 3:00 p.m.

By

Parwinder Grewal, Dean
College of Tropical Agriculture and Human Resilience
And

Michael Bruno, Provost
University of Hawai'i at Mānoa

HB 1185 HD2 – RELATING TO AGRICULTURE

Chair Kim, Vice Chair Kidani, and Members of the Committee:

The University of Hawai'i (UH) supports the intent of this community initiative and offers comments on HB 1185 HD2 which establishes a Plant-based Building Materials Working Group to study and report on how best to grow plants and develop plant-based building materials in Hawai'i with appropriation of funds.

UH College of Tropical Agriculture and Human Resilience comments there is a need first for targeted research to establish baseline data (e.g., yield potentials, cost structures, market opportunities, competition with food production, etc.). In an emerging field like plant-based building materials, particularly in Hawai'i with its competing demands for sustainable land use, we recognize the desire between wanting to coordinate stakeholders early so that policy can be informed by a broad range of expertise, and ensuring that there is solid research to guide those policies. We suggest that once resources and preliminary research results are available, a broader working group could then be convened with a mandate to integrate those findings into a comprehensive strategy that includes economic development, job creation, and environmental benefits.

Thank you for the opportunity to offer comments 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 11, 2025

HEARING BEFORE THE
SENATE COMMITTEE ON HIGHER EDUCATION

TESTIMONY ON HB 1185, HD2
RELATING TO AGRICULTURE

Conference Room 229 & Videoconference
3:00 PM

Aloha Chair Kim, Vice-Chair Kidani, and Members of the Committee:

I am Brian Miyamoto, Executive Director of the Hawai'i Farm Bureau (HFB). Organized since 1948, the HFB is comprised of 1,800 farm family members statewide and serves as Hawai'i's voice of agriculture to protect, advocate, and advance the social, economic, and educational interests of our diverse agricultural community.

The Hawai'i Farm Bureau supports HB 1185, HD2, which establishes a Plant-Based Building Materials Working Group to study and report on how best to grow plants and develop plant-based building materials in Hawai'i. This bill also appropriates funds to support the working group's efforts.

Hemp, bamboo, and other plant-based building materials are fast-growing, renewable resources with a lower environmental footprint compared to traditional construction materials like concrete and steel. These materials have the potential to reduce greenhouse gas emissions and waste while supporting Hawai'i's sustainability and climate resiliency goals.

Plant-based construction materials such as hempcrete, bamboo panels, and fiber-reinforced composites are lightweight, durable, and energy-efficient. Encouraging the development of these materials in Hawai'i would help reduce reliance on imported building supplies, lower shipping costs, and provide opportunities for local farmers to cultivate high-value crops that support both agriculture and the construction industry.

Establishing a working group to assess how best to grow and develop plant-based building materials is a critical step toward diversifying Hawai'i's agricultural sector, promoting innovation, and supporting the state's housing and sustainability goals.

We encourage the working group to:

- Ensure that farmers and agricultural stakeholders are included in discussions on crop selection, processing infrastructure, and economic viability.
- Evaluate potential barriers to commercial-scale production, including regulatory, processing, and market challenges.
- Coordinate with existing research institutions and industry experts to develop best practices for growing and processing plant-based building materials in Hawai'i's unique climate.

Thank you for the opportunity to testify on this important matter.



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Natalie Urminska
Kaua'i

Aloha Chair Kim, Vice Chair Kidani, and Members of the Senate Higher Education Committee,

The Hawai'i Farmers Union is a 501(c)(5) agricultural advocacy nonprofit representing a network of over 2,500 family farmers and their supporters across the Hawaiian Islands. **HFU supports HB1185.**

HB1185 presents an innovative and sustainable approach towards enhancing Hawaii's agricultural and construction sectors by establishing a Plant-based Building Materials Working Group. This initiative promises to explore the untapped potential of growing plants specifically for developing environmentally-friendly building materials. Such a would advance agricultural diversification and reduce our reliance on imported, non-renewable construction resources. By focusing on plant-based materials, Hawaii can bolster its agricultural industry, stimulate local economies, and promote sustainable practices that align with the state's commitment to environmental stewardship.

Mahalo for the opportunity to testify.

Hunter Heavilin
Advocacy Director
Hawai'i Farmers Union



To: The Honorable Chair Donna Mercado Kim, the Honorable Vice Chair Michelle Kidani, and Members of the Committees on Higher Education and Agriculture and Environmental Protection.

From: Hawai'i Reef and Ocean Coalition and Climate Protectors Hawai'i (by Ted Bohlen)

Re: Hearing **HB1185 HD2 RELATING TO AGRICULTURE**

Hearing: Tuesday March 11, 2025, 3:00 p.m. Rm. 229

Aloha Chair Kim, Vice Chair Kidani, and Members of the Committee on Higher Education:

The Hawai'i Reef and Ocean Coalition (HIROC) is a group of scientists, educators, filmmakers and environmental advocates who have been working since 2017 to protect Hawai'i's coral reefs and

ocean. The mission of the Climate Protectors Hawai'i is to educate and engage the local community in climate change action, to help Hawai'i back toward a safe and stable climate.

The Hawai'i Reef and Ocean Coalition and Climate Protectors Hawai'i STRONGLY SUPPORT HB1185 HD2!

Hawai'i can use **plants** to develop a **home-grown building materials industry**, with **green jobs in both agriculture and production**, while sequestering carbon to **mitigate climate warming!**

Most of Hawai'i's building materials are shipped to Hawai'i from the continents at great expense. Much of the money that is leaving Hawai'i would stay if we could **produce building materials here instead of importing lumber, steel, cement and other building materials.**

Hawai'i's climate, with a year-round growing season and ample rain in many areas, has advantages for growing various crops that can be processed into structural plant-based building materials. For example,

- There are types of **clumping bamboo** that can grow very rapidly with sufficient water. Bamboo is a grass that regrows after being cut, unlike timber trees which die and need replanting. Clumping bamboo can be processed into building materials that are more flexible and lighter than timber or steel and be made more fire- and termite-resistant than wood. Bamboo has a tensile strength by weight that exceeds steel. In addition, bamboo can be used to produce a wide range of construction material, from flooring and paneling to structural support and roofing.
- "**Hempcrete**", developed from industrial hemp, can substitute for concrete building blocks, with weather-resistant durable materials.
- "**Biocement**" is a calcium carbonate material produced by microbes that can substitute for Portland cement. It can be produced from cyanobacteria (blue-green algae or "pond scum").

Green jobs would be created for growing plants and producing building materials here in Hawai'i.

Bamboo and other plant-based building materials would **help Hawai'i meet its net negative greenhouse gas emissions goal** because they sequester carbon, whereas production of traditional building materials such as timber, steel, and cement emit very large amounts of greenhouse gases.

The purpose of this bill is to establish at the University of Hawai'i at Manoa College of Tropical Agriculture and Human Resilience a working group to study and report on how best to grow plants and develop a plant-based building materials industry here in Hawai'i. Funds would be appropriated to administer the working group.

Please pass this bill!

Mahalo!

Hawai'i Reef and Ocean Coalition and Climate Protectors Hawai'i (by Ted Bohlen)



SENATE COMMITTEE ON HIGHER EDUCATION
Hearing on March 11, 2025, 3:00 pm

SUPPORTING HB1185 HD2

Carbon Cashback Hawai‘i supports HB1185 HD2 because it has the potential to reduce net greenhouse gas emissions, lessen our dependence on imported building materials, and create green jobs.

Establishing and funding the working group could lead to the development of a plant-based building materials industry in Hawai‘i. Our year-round growing season, with ample rain in many areas, offers advantages for growing a number of crops that could be processed into structural materials, such as bamboo, hemp, and algae.

Exploring and then encouraging the development of these materials could help reduce our reliance on imported building supplies, lower shipping costs, and provide opportunities for local farmers to cultivate high-value crops that support both agriculture and the construction industry.

For the foregoing reasons, Carbon Cashback Hawai‘i urges the committee to pass HB1185 HD2.

“Reducing emissions while helping Hawaii’s families.”

CarbonCashbackHawaii.org
CarbonCashbackHawaii@gmail.com



To: Senate Committee on Higher Education (HRE)
From: Sherry Pollack, Co-Founder, 350Hawaii.org
Date: Tuesday, March 11, 2025, 3pm

In support of HB1185 HD2

Aloha Chair Kim, Vice Chair Kidani, and HRE Committee members;

I am Co-Founder of the Hawaii chapter of 350.org, the largest international organization dedicated to fighting climate change. 350Hawaii.org **supports HB1185 HD2** that establishes a Plant-based Building Materials Working Group to study and report on how best to grow plants and develop plant-based building materials in Hawaii.

HB1185 HD2 is an innovative and sustainable approach towards enhancing both Hawaii's agricultural and construction sectors. Hemp and bamboo are ideal for eco-friendly construction because they are sustainable, cost-effective, and have low environmental impact. This measure will help reduce greenhouse gases, which is critically needed in our fight against the climate crisis. Plant-based products such as industrial hempcrete and structural bamboo are excellent alternatives to replace carbon-intensive materials used today such as concrete and steel.

We need to target all emission sources, especially cost-effective low hanging fruit like this. Please pass HB1185 HD2.

Mahalo for the opportunity to testify.

Sherry Pollack
Co-Founder, 350Hawaii.org

HB-1185-HD-2

Submitted on: 3/10/2025 1:17:22 PM

Testimony for HRE on 3/11/2025 3:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Zachary Mermel	Testifying for American Bamboo Society (Hawai'i Chapter)	Support	Written Testimony Only

Comments:

To whom it may concern,

On behalf of the Hawaii Chapter of the American Bamboo Society, I enthusiastically support the passage of HB1185 HD2.

In an era of intensifying climate instability and economic uncertainty, the integration of plant based building materials into Hawaii's existing agriculture sector will help diversify the income streams of smallholder farmers in Hawai'i, while yielding increased ecological resilience to the spatial layouts of these diversified farms. In particular, non-invasive giant timber bamboo offers great potential for overlaying into existing and future farms as multipurpose windbreaks (with relatively small spatial footprints). These giant timber bamboo that can be harvested every 2-3 years for the better part of a century for bamboo timber poles for use in structural buildings, and also for processing into OSB (Oriented Strand Board), which is itself a structural building material. These harvested poles provide stellar carbon sequestration across many decades, offering an impressively regenerative agriculture opportunity for the farmers and residents of the State of Hawaii.

Respectfully submitted,

Zachary Mermel

President, Hawaii Chapter of ABS (American Bamboo Society)

HB-1185-HD-2

Submitted on: 3/9/2025 11:20:03 AM

Testimony for HRE on 3/11/2025 3:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Ronald "Ron" Reilly	Individual	Support	Written Testimony Only

Comments:

Strong support for HB1185

Dear Senator Glenn Wakai, Chair, Senator Stanley Chang, Vice Chair, and Members of the Committee On Energy And Intergovernmental Affairs,

It is my understanding that there is a chicken and egg dilemma that is stopping development of a bamboo industry on Hawaii Island.

Without a bamboo processing facility farmers have no incentive to plant or harvest bamboo. And without a steady supply of mature bamboo there is no incentive to invest in a bamboo processing facility.

HB1185 can provide necessary funding to break this “catch 22” situation and begin a virtuous cycle of planting, harvesting, processing and utilization of this environmentally beneficial, cash crop.

The environmental and economic benefits of bamboo to provide locally grown building materials, and to sequester atmospheric carbon dioxide, and provide a revenue stream to local farmers are well known.

I urge your support for HB1185.

Ron Reilly, Volcano, HI 96785

HB-1185-HD-2

Submitted on: 3/9/2025 3:03:28 PM

Testimony for HRE on 3/11/2025 3:00:00 PM

Submitted By	Organization	Testifier Position	Testify
David Murray	Individual	Support	Written Testimony Only

Comments:

Aloha Chair Kim, Vice Chair Kidani, and members of the HRE Committee:

I support HB1185 because of its potential to reduce greenhouse gas emissions, as well as bring green jobs to Hawaii.

This bill would establish and fund a working group at the University of Hawaii at Manoa to study how best to grow plants and develop plant-based building materials. Promising examples include bamboo-, hemp-, and algae-based building materials. Successful development of such materials could reduce net greenhouse gas emissions, attract green agricultural jobs to the state, reduce our dependence on imported goods, and lower the cost of construction materials.

I ask that you please pass HB1185 out of your committee.

Mahalo!

David Murray, Waimanalo

HB-1185-HD-2

Submitted on: 3/9/2025 5:03:50 PM

Testimony for HRE on 3/11/2025 3:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Virginia Tinch	Individual	Support	Written Testimony Only

Comments:

Aloha Chair Kim, Vice Chair Kidani, and members of the HRE Committee:

I support this bill because of its potential to reduce greenhouse gas emissions, as well as bring green jobs to Hawai'i.

HB1185 would establish and fund a working group at the University of Hawai'i at Manoa to study how best to grow plants and develop plant-based building materials. Promising examples include bamboo-, hemp-, and algae-based building materials. Successful development of such materials could reduce net greenhouse gas emissions, attract green agricultural jobs to the state, reduce our dependence on imported goods, and lower the cost of construction materials.

Mahalo!

Virginia Tinch

HB-1185-HD-2

Submitted on: 3/9/2025 6:11:06 PM

Testimony for HRE on 3/11/2025 3:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Nanea Lo	Individual	Support	Written Testimony Only

Comments:

Hello Chair Kim, Vice Chair Kidani, and Members of the HRE Committee,

My name is Nanea Lo, and **I am writing in strong support of HB1185**. This bill presents an important opportunity to reduce greenhouse gas emissions while promoting sustainable economic growth in Hawai‘i.

HB1185 would establish and fund a working group at the University of Hawai‘i at Mānoa to study the cultivation and development of plant-based building materials, such as those made from bamboo, hemp, and algae. Advancing these materials has the potential to significantly reduce net greenhouse gas emissions, attract green agricultural jobs, and decrease our reliance on imported goods.

Additionally, investing in locally sourced, plant-based materials could help lower construction costs — a much-needed solution as Hawai‘i continues to face housing and infrastructure challenges.

I respectfully urge the committee to pass HB1185 to support innovation, sustainability, and a more resilient future for our islands.

me ke aloha ‘āina,

Nanea Lo

Mō‘ili‘ili, HI 96826

Sierra Club of Hawai‘i Executive Committee Member

Board Member, Hawai‘i Workers Center

Kanaka Maoli/Lineal Descendant of the Hawaiian Kingdom

HB-1185-HD-2

Submitted on: 3/9/2025 7:14:08 PM

Testimony for HRE on 3/11/2025 3:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Noel Morin	Individual	Support	Written Testimony Only

Comments:

SUPPORT FOR HB1185 HD2 (RELATING TO AGRICULTURE)

Dear Chair Kim, Vice-Chair Kidani, and members of the Committee,

My name is Noel Morin. I support HB1185 HD2, which *Establishes a Plant-based Building Materials Working Group to study and report on how best to grow plants and develop plant-based building materials in Hawai‘i.*

This measure is designed to help Hawaii understand the potential of sustainable building materials to reduce the environmental and carbon footprint of the construction industry, establish new economic opportunities in the agriculture sector, and increase our resilience.

The working group must be represented by all relevant stakeholders and take a holistic, ecosystem-wide approach to understand what’s required to establish products that meet the building industry needs and, importantly, what systems will be necessary for complete product lifecycle coverage and the avoidance of unintended consequences.

Please pass HB1185 HD2.

Thank you for the opportunity to testify.

Sincerely,

Noel Morin

Climate, Sustainability, and Resilience Advocate

Hilo, Hawaii

HB-1185-HD-2

Submitted on: 3/9/2025 8:38:48 PM

Testimony for HRE on 3/11/2025 3:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Ben Narwold	Individual	Support	Written Testimony Only

Comments:

Aloha Chair Kim, Vice Chair Kidani, and members of the HRE Committee:

I support this bill because of its potential to reduce greenhouse gas emissions, as well as bring green jobs to Hawai‘i.

HB1185 would establish and fund a working group at the University of Hawai‘i at Manoa to study how best to grow plants and develop plant-based building materials. Promising examples include bamboo-, hemp-, and algae-based building materials. Successful development of such materials could reduce net greenhouse gas emissions, attract green agricultural jobs to the state, reduce our dependence on imported goods, and lower the cost of construction materials.

Mahalo!

Ben Narwold, Kapaa, HI

HB-1185-HD-2

Submitted on: 3/10/2025 9:05:24 AM

Testimony for HRE on 3/11/2025 3:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Caroline Azelski	Individual	Support	Written Testimony Only

Comments:

Support. Thank you.

HB-1185-HD-2

Submitted on: 3/10/2025 9:56:36 AM

Testimony for HRE on 3/11/2025 3:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Glen Kagamida	Individual	Support	Written Testimony Only

Comments:

Good idea. Support. Mahalo!

HB-1185-HD-2

Submitted on: 3/10/2025 12:48:29 PM

Testimony for HRE on 3/11/2025 3:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Barbara Best	Individual	Support	Written Testimony Only

Comments:

Bringing green jobs to Hawaii while reducing greenhouse gas emissions, this bill is a winner. This bill would pursue these worthwhile goals and lower the cost of construction materials as well.

Mahlo for your support.

Barbara Best