



HISB Newsletter

A NEW HOME FOR HISB

The Hawai'i Island Seed Bank now has a lab again! HISB has been in transition for a few years as I was trying to find a property to buy. I finally got settled in Kona. I also joined a new company, Terraformation, as head of forestry. I have a great team of people who are doing forest restoration in Hawai'i, and with partners world-wide.

One of the things I have realized that is a bottleneck to scaling up projects is seed availability. I believe we need to collect and store seed if we are to address climate change and increase capacity. So I thought of the idea of creating a seed lab out of a 40' shipping container. I have bought several shipping containers to move my belongings, and to create a cabin to live in while I am building my house, which is a multi-year project. The cabin came out very well and I moved into it on April 11, 2020, just as Covid was hitting Hawaii. I almost had a hard time getting people to help me move. Fortunately it happened and I settled into my new property, and in the container cabin. What a relief.

A few months later I got the idea to build a seed lab from one of the containers I had my furniture in. So we moved everything out and I spoke to Marian about it. I brought Marian on to my forestry team at Terraformation and she designed the seed lab in collaboration with our team, and Johannes and Thomas built the prototype mobile seed lab at the end of 2020. Our solar expert Aleks designed the solar system so the lab can be totally off-grid. It is wonderful!



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A NEW HOME FOR HISB (CONTINUED)



Thomas during earlier stages of building the new lab



The seed lab is a 100% renewable, clean energy lab. It is solar powered and totally climate controlled, including dehumidification, fridges, drying boxes and all the equipment that are needed to run a small seed bank. We are fully operational again! We are grateful to Terraformation, especially to our founder and CEO, Yishan Wong, for building this first seed bank for HISB to use.

Terraformation has quickly built the second seed bank, Version 1, for our partner in Uganda, Environmental Defenders (See page 4). We are getting ready to ship it to Uganda, and build the next one. We intend to build thousands of seed banks that will be shipped all over the world so people can collect and store the seed from their region to help them save a resource for the future, and to scale up their restoration projects.

Thank you Marian, Johannes, Thomas, and Aleks for creating and building a beautiful piece of technology for all of the future seed bankers of the world. Marian is also creating a set of training videos for seed banking so people will have the step by step protocols that will allow the seed to be properly banked so it will retain its viability in storage. These training videos will be offered on the Terraformation website, and be included in the shipment of the seed labs.

We, at Terraformation, are excited about the future and the ways in which we can serve the Earth. Please join us.

By Jill Wagner, HISB Founder, Terraformation Head of Forestry



New seed lab is complete!



Janali Torres, Huliouapa `a intern at Ka `ūpūlehu holding bags of recently collected `Ūlei (*Osteomeles anthyllidifolia*). Photo by WB.

SEED COLLECTIONS AT KA`ŪPŪLEHU DRYLAND FOREST PRESERVE

Aloha Kākou! My name is Wilds Pihanui Ilaitia Brawner and I am the site manager of the Ka`ūpūlehu Dryland Forest Preserve managed by the Hawai`i Forest Industry Association. Our preserve is located in north Kona, in the lowlands of the `ahupua`a of Ka`ūpūlehu owned by Kamehameha Schools Bishop Estate. It is home to many common and endangered native plant species that occur nowhere else in the world. Over the years, our partnership with HISB has proved very advantageous in storing seeds for long-term and short-term storage, as well as for restoration.

The unique HISB facility allows our personnel to bank seeds during times of abundance, which can provide access to certain species for future use when there is a lack of seed availability. Species that we have banked to date include (but are not limited to): Kauila (*Colubrina oppositifolia*), Koki`o (*Kokia drynarioides*), Uhiuhi (*Mezoneuron kavaiense*), `A`ali`i (*Dodonaea viscosa*), and `Ūlei (*Osteomeles anthyllidifolia*). We hope to continue our partnership into the future with the skilled staff of the seed lab that process, accession, and organize all of our seed deposits and we truly cherish their expertise in making this critical component of plant conservation an opportunity to perpetuate our beloved native Hawaiian plants.

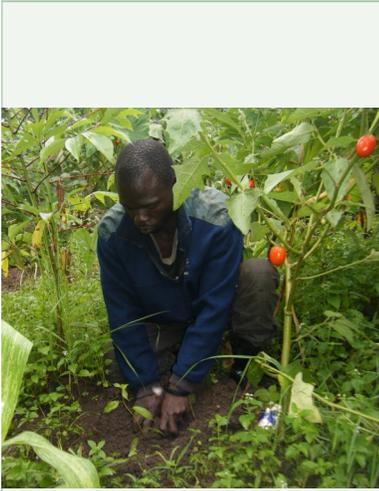
By Wilds Brawner, Ka`ūpūlehu Dryland Forest Preserve Site Manager



Koki'o seed under a microscope



`A`ali`i seeds under a microscope



Environmental Defenders staff member planting a seedling

ENVIRONMENTAL DEFENDERS UGANDA: Terraformation's Newest Seed Banking Partner

HISB is excited for a new international partnership, working with Environmental Defenders (ED), a non-profit NGO in the Lake Albert Region, Northern Uganda, which works to protect both environmental resources and human rights. The work of ED includes helping marginalized Indigenous communities make a sustainable living and protect their water sources and local environment, which is threatened by ongoing oil and gas exploration, large-scale agribusiness, and illegal logging.

“Environmental Defenders helps protect the human rights of communities in the Lake Albert region fighting against harm to their environment.”

- Robert Agenonga, ED Executive Director



Environmental Defenders' tree seedling nursery

To solve these problems, ED purchases land for conservation, including badly degraded land, which they restore with rare indigenous trees to protect natural biodiversity. They also preserve Indigenous Knowledge of African medicinal plants used by ancestors, donate seedlings of fruit trees to community groups, and train local farmers in reforestation for carbon sequestration, along with sustainable non-timber harvest that supports local livelihoods.

Terraformation is thrilled to support ED Uganda as its first international partner. We are now building a Seed Bank Module and Nursery Module that will be sent to ED this year, enabling them to dramatically scale up seed collection, storage, plant propagation, and outplanting for reforestation. HISB's own Seed Bank Module will be the site for training of Robert Agenonga, ED's Executive Director, and his staff, through video courses and virtual live training sessions. Although ED Uganda may be on the other side of the globe from Hawai'i, we are linked through a passion for native seeds and restoration, and very excited about this fruitful collaboration.

By Marian Chau, Terraformation/HISB Head of Seed Banking

