



RESILIENCE, REMEMBERING, AND SELF-RELIANCE

UNDERSTANDING HAWAII'S FOOD SYSTEMS TODAY

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HAWAII GOOD FOOD ALLIANCE

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INTRODUCTION & LANGUAGE

When we discuss food systems in Hawai‘i, it is first and foremost crucial to honor the deep and unbreakable connections between the islands’ language, culture, and land. The Hawaiian language, ‘Ōlelo Hawai‘i, carries within it the wisdom, values, and worldview of the Hawaiian people, shaped by centuries of intimate relationship with their environment and food sources. By incorporating Hawaiian words throughout this report, we not only seek to pay respect to the indigenous stewards of these islands and this knowledge, but also open up a deeper understanding of sustainable land management and food systems that have been practiced here for generations to readers from other backgrounds. Simply put, English terms often fall short of capturing the deeper meaning of things here.

At the end of this report, there is a glossary that is intended to serve as a bridge between these ways of knowing, offering insights into some of the nuance of Hawaiian words and concepts that are integral to discussions of food sovereignty, local food systems, and resilience. Each entry represents more than a translation: it tries to shed light on the interconnectedness of people, land, and sustenance. In a way, these Hawaiian terms remind us of the so-called interbeing of our food systems, of the truth that we each belong to earth and to each other. As we explore these terms in the report, we invite readers to approach them with thoughtfulness and openness, recognizing that language is a gateway to understanding and that by embracing these Hawaiian words and concepts, we may take a step towards more respectful and sustainable approaches to food and land stewardship in Hawai‘i.

Throughout this report, we use the term (and spelling) Hawai‘i to refer to the place. We distinguish between Hawai‘i residents (people who live in Hawai‘i) and Hawaiians or Native Hawaiians (both of which describe the ethnic group of indigenous Hawaiians). When we use words from the Hawaiian language, we do so with the original spelling, using the okina (‘) and appropriate diacritics, and we provide the English translation in parentheses upon first use. The team at Kitchen Sync Strategies, the creators of this report, is neither Native Hawaiian nor Hawaiian residents. While we worked closely with our Key Partners in the islands (the Hawai‘i Good Food Alliance) to ensure accuracy of the content we present, and though we visited with many local experts since our research began, we are nevertheless subject to the limitations in our cultural under-

standing associated with being a visitor to the Hawaiian islands.

HISTORICAL CONTEXT OF THIS ANALYSIS

The Hawaiian Islands have been inhabited for over thousands of years, settled by Polynesian explorers whose worldview and religion considered the earth and ocean sacred, and whose cultural skills and knowledge sustained a population of more than 800,000 people in Hawai‘i.¹

These voyagers brought sacred, culturally important crops including kalo (taro), ‘ulu (breadfruit), and ‘uala (sweet potato), and more. Those crops remain central to Hawaiian culture and Hawai‘i’s food system today. With a year round growing season that facilitates multiple annual harvests, Hawai‘i benefits from a lush and productive environment. Beginning in the mid-1800s, however, western colonization began exploiting that abundance, and Hawai‘i’s fertile land became heavily industrialized by plantation agriculture, starting with sugar and persisting with pineapple beyond Hawai‘i’s statehood in 1959. Production of these crops started to decline in the 1960s, and by the mid-2000s, large-scale production operations were almost nonexistent. However, this plantation agriculture and colonization have left devastating legacies in their wake: an extractive economic model, denuded and damaged lands, and a once self-sufficient food system almost dismantled and largely dependent on a vulnerable, just-in-time import system.² The legacy of plantation agriculture is still seen in the dominant approach to state agriculture policy

and programs which tend to prioritize large-scale and export-oriented production.

Despite these challenges, Hawai'i's community has persevered in stewarding local food systems. Native Hawaiians have long maintained the deep cultural heritage of their sacred food ways, which are rooted in mālama 'āina (care for the land). Immigrant communities that hail from China, Japan, the Philippines, and even Portugal and Puerto Rico during the plantation era blended their food traditions into the islands' abundant growing culture as they made Hawai'i home. While the tourism industry that quickly grew to dominate Hawai'i's overall economy in the post-plantation period has utilized the same extractive mindset to the state's economic development, it has also provided markets for local food that have helped small farmers and local food businesses grow to serve Hawai'i's many annual visitors and local communities.

Today, Hawai'i's local food system is growing, thanks to a culture that values food production and its responsibility to care for the health of the earth, the ocean, and the community. A strong network of support actors have long worked to cultivate the food system with a spirit of servant leadership. Small farmers continue to join the local food marketplace, and middle-of-the value chain businesses like food hubs are growing and building the capacity of that local food market. Community groups and 'ohana (families) continue to tend traditional production systems and learn from each other, stewarding cultural knowledge that has long been passed down and is now resurgent. And, in both the formal and sharing economies, the very crops brought by Native Hawaiian voyagers are at the heart of a

local food renaissance. As Hawai'i launches its part of the Islands and Remote Areas Regional Food Business Center (IRA RFBC), it is building upon the work of many deeply invested community members who call the islands home. Partners in the islands (the Hawai'i Good Food Alliance) to ensure accuracy of the content we present, and though we visited with many local experts since our research began, we are nevertheless subject to the limitations in our cultural understanding associated with being a visitor to the Hawaiian islands.

As part of the IRA RFBC, the Hawai'i Good Food Alliance will coordinate direct funding and technical assistance to food and farm businesses and other Hawai'i food systems actors. The RFBC will improve access to food system data and information about resources, technical assistance and capacity-building opportunities for practitioners, strategically direct funding to Hawai'i-based farm and food businesses (particularly those that have historically been underserved), and expand market opportunities for small and medium-scale producers. The RFBC will work to address the challenges and leverage the momentum described below in this food system analysis.



CURRENT FOOD SYSTEMS ANALYSIS

In the sections that follow, we synthesize many resources shared with us by our key partners in Hawai'i, including the Hawai'i Good Food Alliance (HGFA), Hawai'i's IRA RFBC Key Partner, as well as findings from key informant interviews we conducted as part of the baseline assessment. This Food Systems Review is intended to provide a fairly detailed consideration of the current conditions, challenges, and collaboration occurring in the core steps of the food cycle, from production to market access. For all subregions of this RFBC, these Program Areas (the steps of the food cycle including Production, Processing, Aggregation & Distribution, Access to Markets, and Capital Access) serve as guideposts for understanding where each subregion can focus its research, the Business Builder awards, and Technical Assistance funds provided by this RFBC, and ultimately energy to improve the local and regional food economies in these places.³

We review each Program Area in two parts. First, we describe the current reality of the Program Area, providing a sense of the conditions and capacity, along with the relevant businesses, organizations, networks and other actors who are shaping the on-the-ground reality of Hawai'i's food system. We then briefly summarize key challenges and underscore opportunities in each Program Area - these are some of the barriers and pieces of momentum the RFBC can address and leverage through its priorities and strategies. This is not intended to be an exhaustive or even holistic database of all actors, projects, or work unfolding; rather, it is intended to serve as a snapshot-in-time and evidence base for Hawai'i's key partners to share with collaborators.

PRODUCTION

Current Reality

Hawai'i's year-round growing season and fertile land provide a lush setting for agricultural production. A small number of large farms specialize in export food crops like coffee, macadamia nuts, and tropical fruits, while the majority of farmers produce fruits, vegetables, and proteins for local consumption, doing so on a much smaller scale (generally under 10 acres). 85% of Hawai'i's farmers are small, and make less than \$50,000 in annual revenue.⁴ Small farmers include those geared towards commercial local food production, backyard subsistence growers (who may market excess via food hubs), and grower communities who tend the 'āina and share harvests together, often outside formal market streams. Many local food growers are cultivating ancestral crops, managing loko i'a (fish-ponds), and honoring Native Hawaiian foodways. Small farmers face difficulties accessing land and water, revitalizing land marred by plantation systems, managing high costs for inputs and labor, and managing pests and invasive species. Too often, they lack critical infrastructure to store or cool their harvest. These challenges and the high costs associated with them are compounded by a market flooded with cheap food imports. While some categories of production have dwindled under import competition, such as dairy, local food production continues to grow its share of Hawai'i's agricultural economy, and a robust network of support actors continues to help local food farmers gain the skills and resources they need to take part in farming.

Local food has steadily become a cornerstone for the agricultural economy in Hawai'i, expanding while the overall agricultural sector has simultaneously contracted. Though total farm sales in Hawai'i nominally increased from \$563.8 million in 2017 to \$673.7 million in 2022, when adjusted for inflation, the real value of sales decreased by 0.74%.⁴ Meanwhile, farms' direct local food sales grew by 25.44% between 2017 and 2022 when adjusted for inflation.^{4,5} During that same period, Hawai'i lost over 750 farms, a 10% contraction. Yet, participation in local food

sales channels increased. Though 244 fewer farms reported using D2C channels in 2022 than 2017, 348 more farms reported using wholesale outlets to sell food. Combined, reports of local food channel use grew by 4%.^{4,6} Because farms may use both market channels or change channels overtime, this data cannot describe whether the total number of local food farms changed. But, local food farms commonly start with smaller-volume D2C sales and then develop larger-volume wholesale markets as their production capacity increases, so these shifts could indicate that some D2C marketers evolved and moved into wholesale channels. This growth of the local food sector is congruent with the state's goals; Governor Ige set a goal to double local food production by 2030 in 2017.⁷

Arguably, the local food market is more central to Hawai'i's ag sector than any other state; 2022 Ag Census data shows that Hawai'i ranks first among all states for its percentage of total agricultural sales derived from direct, local food sales, at 34.16%.⁴ Not only does Hawai'i have the highest percentage of local food sales, it also ranks high for the percentage of farmers participating in food markets: 20.83% of Hawai'i's farms participate in D2C sales, the 7th highest of any state (and more than twice the U.S. average of 9.38%). And, nearly 1 in 5 farms participate in wholesale food channels: that's the highest percentage of any state, a full 2 percentage points more than second-ranked Vermont, known for its expansive local food initiatives (the U.S. average is more like 1 in 20 farms at 4.50%).⁴ While these USDA Ag Census numbers are impressive in their own right, the data does not capture the additional production of Hawai'i's subsistence growers and communities growing and sharing food outside formal markets. This means there is even more local food circulating throughout the islands.



Backyard Growers

With Hawai'i's abundant growing environment, many community members across the islands have fruit trees and other back-yard production, often used for subsistence, that over-produce during the peak season. These 'backyard growers' may share with their community or 'ohana outside of the formal marketplace, but have increasingly found markets through local food hubs (discussed in the aggregation and distribution section). This group of growers often includes economically vulnerable community members who value the opportunity to sell their excess produce.

Communities & 'Ohana Growing Together ^{8,9,10}

Many groups continue to steward land holistically and communally with traditional Hawaiian cultural practices that restore habitats and produce food. These groups tend production systems ranging from tree crops and produce, including ancestral Polynesian crops such as 'ulu (breadfruit), to lo'i kalo (wetland taro) and loko i'a (fishponds) to limu (seaweed) in the ocean. These groups weave conservation and food production, removing invasive species such as mangroves or invasive limu to ensure the vitality of the native species and traditional production systems. Some, like Waipā Foundation, are able to tend all the distinct ecological zones of the traditional ahupua'a system, which include lands mauka to makai (from the mountains to the sea)¹¹. Frequently, they facilitate formal or informal educational opportunities for children and community members to participate in and learn about their efforts. These deeply committed groups are numerous throughout the islands, sometimes organized as formal non-profits or convened as networks of practitioners, and sometimes informally led by community leaders or 'ohana. Some of these groups actively work to reclaim food sovereignty as part of their missions.

Kua'āina Ulu 'Auamo (KUA) brings together fishers, farmers, and organizations across Hawai'i who practice traditional foodways and community-based natural resource management (Kua means back, or spine). As a 'backbone organization', they support three networks: E Alu Pū Network with communities around Hawai'i learning how to better mālama 'āina together;¹²

Hui Mālama Loko I'a is a network for fishpond practitioners¹³, and The Limu Hui is a network of people working to restore native limu (seaweed)¹⁴. There are numerous individuals, communities, and organizations working to restore fish ponds and traditional food production systems, centering mālama 'āina and celebrating Native Hawaiian culture. Kūpuna (elders) have long passed down their sophisticated skills and knowledge, which have served as the foundation for the current resurgence and growth of traditional Hawaiian food-ways across many communities.

Keawanui Fishpond

Keawanui is a 55-acre, loko kuapā (closed wall fishpond) on the south shore of the island of Moloka'i, where there were once dozens of thriving loko i'a (fishponds). Due to the ongoing effects of colonization, land development, and climate change there are few fishponds in Hawai'i today that are still operable, though many are working to revitalize these crucial mariculture practices.

The nonprofit organization 'Āina Momona has been restoring this fishpond since 2006. The goal of the project is to increase the wild stock of fish. The caretakers accomplish this by allowing young fish to enter the fishpond through mākāhā (gates) with special funnels, where they can mature and grow safeguarded within the wall. After 4 to 5 months, the fish are then released back into the ocean, where subsistence practitioners can catch them. Fishing within the pond is strictly prohibited.

The founder of 'Āina Momona, Walter Ritte, has spent over 25 years working to restore loko i'a (Hawaiian fishponds) and has spent decades at Keawanui educating the community on the value and ingenuity of these systems. As we work towards building a sustainable, climate change resistant future in Hawai'i, the traditional loko i'a system will be a vital part of local food production efforts and crucial to our survival as kānaka. It is paramount that we revitalize and reinvigorate these practices to create a just, equitable, and pono future.¹⁰

Land Access

For many new producers, land is difficult to access. Due to development pressure the price of land is often out of reach for beginning and small farmers. Accessing land via large public and private landowners is sometimes a possibility, but access varies by island. Major land lessors include Agricultural Parks, Agribusiness Development Corporation Lands, the Department of Hawaiian Homelands, and Kamehameha Schools (KS). Public Ag Parks are typically owned and managed by the Hawai'i Department of Agriculture's (HDOA) Resource Management Division,¹⁷ (with the exception of Kula Ag Park, which is owned by the County of Maui and managed by the Maui County Department of Ag), and they provide ag leases for land under 20 acres.¹⁸ The Agribusiness Development Corporation holds land and leases to farmers via an application process, but lands designated or zoned for agriculture are often underutilized. In 2024, S.B. 2960 was passed into law; this bill requires that lessees and purchasers of farm and ranch lots use that land for farming food, but it is unclear whether it will change the difficulties in setting, monitoring, or enforcing thresholds around what level of activity constitutes food farming.¹⁹

Kamehameha Schools, the largest private landowner in the state of Hawai'i with 364,000 acres, currently has over 20,000 acres in food production. A strong proponent of local food production that weaves local procurement and cultural foods into its own schools meals, KS has a goal to increase the number of acres in production by 16% by 2025.^{20 21} For farmers who are Native Hawaiians (50% or more Hawaiian ancestry), Agricultural Lots may be available through the Department of Hawaiian Homelands (DHHL), but DHHL issues leases rarely. Often, it is easier and faster for farmers to access land through relatives who are living on Ag Lots, but not using all the production area. It must be noted that the US military and a few multinational corporations control vast tracts of agricultural land in Hawai'i, rendering it inaccessible for food production. The U.S. military controls over 200,000 acres of land throughout the islands.²² Large biotech companies own and lease sizable tracts of land to produce GMO (genetically modified organ-

AHIKI ACRES | STARTING A FARM

Beginning farmers Haley and Matthew McKinnon met in the GoFarm Hawai'i beginning farmer training program, and eventually became farm partners and married. After GoFarm graduation in 2019, they started



AHIKI ACRES
Ahiki Acres and entered GoFarm's incubator program, where they have since accessed land. Gaining long-term land access has been a journey and a challenge. Haley grew up in Waimānalo and was deeply committed to farming there as a means to impact her community's food security. After an arduous process, Haley & Matthew finally accessed a 20-year lease through the Department of Agriculture, which started in 2022 and cost \$100,000. However, they found that because of agricultural theft and other challenges, it was important for them to build a house to be present on-site before they could move production to that location. With a house nearly complete, they prepped their first field on the new land in the spring of 2024.

Currently producing on about ½ acre, Ahiki Acres has \$200,000 in annual revenue and sells most of their produce direct-to-consumer at Kailua Town Farmers' Market and through pre-order on their online marketplace. They also sell wholesale, mainly to restaurants. Haley praises the network of organizations in helping their farm get started. Haley gained farm production skills, business planning training, and grant-writing support from GoFarm, and said, "the GoFarm business team is amazing... without them, I wouldn't be here." Haley received business planning support from The Kohala Center through funding from Kamehameha schools, and took part in the KūHana Accelerator through the Council on Native Hawaiian Advancement. All of these opportunities set them up to receive financing, grants and loans- discussed in greater detail in the capital access section.^{15,16}

ism) seeds for export, often leading to land and water contamination due to their heavy use of pesticides and other chemicals.

Farmers may face other challenges in the quality of arable land, especially on land previously in plantation agriculture. For example, remediating denuded soil and removing toxins used in pineapple production is a daunting task that often requires investment of both time and inputs, including growing crops capable of drawing toxins out of the soil.²³

Access to water can also be a challenge, depending on location. Public water systems make water reliably accessible to farmers in many parts of Hawai'i, but not all. Similarly, on some public lands like DHHL lands, the costs of ag water is very low and accessible. But in some counties, especially on Hawai'i Island, individual rainwater catchment is the norm and farmers do not have access to reliable public water supplies. In some areas, pineapple and sugar production diverted surface water and/or depleted groundwater and wells, degrading natural habitats and leading to lack of affordable water for farm use. In one of the most extreme examples of lack of access to water, Moloka'i Properties Limited (owner of "Moloka'i Ranch") owns the entire water system and charges exorbitant rates to transport the water across the island (at a greatly inflated price in comparison to other water prices in Hawai'i).²⁴ Many communities have mobilized activism to restore streamflow, including through legal action, and remediation of these environments is key for food sovereignty and production.

As with water infrastructure, much of Hawai'i's agricultural infrastructure was originally designed to support the plantation system and doesn't meet the needs

of the many small-scale operations growing today. These operations struggle with right-sized irrigation systems, accessing facilities to cool and store produce, and even having good road systems to transport their product to market. These infrastructural systems are larger than any one farm's ability to capitalize or build. However, farms have been able to work toward individual infrastructure improvements by accessing conservation infrastructure and high tunnels through NRCS EQIP, as well as loans through the Farm Service Agency. Support organizations on the ground have the sense that small farmers are using these programs and NRCS and FSA are working to directly engage them. USDA Rural Development has also worked with intermediaries to promote programs like the Value Added Producer Grant (VAPG) to farmers to address infrastructure gaps.

Meanwhile, farms struggle with many other systemic challenges to their development. First, farm inputs must be imported and become incredibly expensive. High costs of both farm insurance and liability insurance (which is necessary for food marketers to access certain channels) as well as a high tax rate further increase costs. Another critical issue is the lack of an agricultural labor force. In a recent survey that included over 250 producers across the islands, access to labor/talent was cited by 55% of respondents as one of the most limiting factors to sustaining or growing the respondent's business, the second-highest of any factor.²⁵ Labor for production (and for all other parts of the food cycle) is constrained by even broader systemic challenges, including the high cost of living and lack of affordable housing in Hawai'i. Farmers and food hubs have expressed that if they had a skilled labor pool who could be subsidized for a training period as farm sales expanded with staff capacity, they would then be able to hire them at livable salaries.²⁶

Invasive plant diseases and pests present another significant production challenge. Invasives like the coconut rhinoceros beetle and aphids feed directly on crops, with the potential to create major loss events. Little fire ants, another invasive, create conditions in which other plant pests thrive, but also painfully sting farmers with welts that can last for weeks. Overall, 'plant diseases or





pests' was cited in the aforementioned survey as the top most limiting factor to sustaining or growing the respondent's business. Invasive species, similarly, were third most cited hindrance.²⁰ GoFarm Hawai'i (discussed in greater detail below), provides assistance for farmers to manage invasives and diseases. However more research is needed to address this complex, farm- and crop- specific problem.^{9, 27, 28}

Food crops commonly grown for local consumption include many varieties of banana, papaya, avocado, citrus fruits, nuts, tropical fruits, beans, leafy greens, and tomatoes. Some coalitions and Hawaiian cultural groups and organizations, and businesses are focused on increasing the production of 'ulu (breadfruit), kalo (taro), and niu (coconut), including groups outlined above. As a result, these crops, which have been carefully tended and stewarded by Native Hawaiians, are experiencing a renaissance and production expansion.

Unlike produce, production of dairy at any scale has become nearly non-existent on the island.

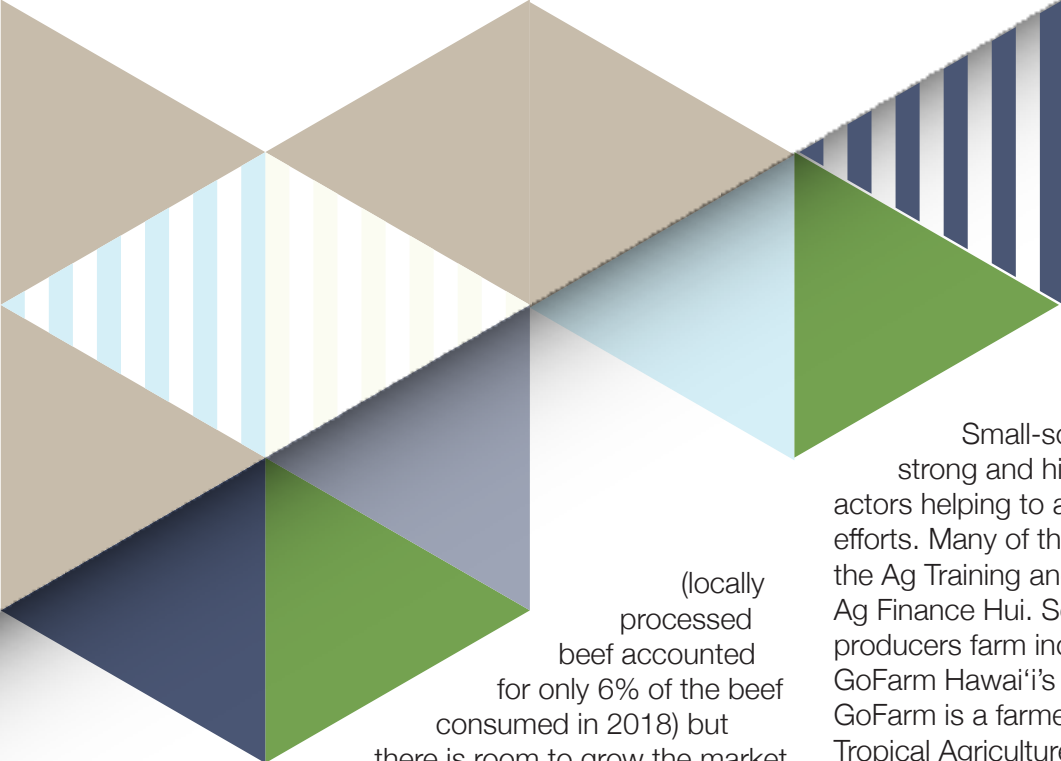
Hawai'i was self-sufficient in milk until an incident in 1982, when Heptachlor, a chemical used on pineapple plantations, passed through pineapple plants to cattle feed, on through cows, and contaminated the milk supply. Ultimately, it was found in concerning concentrations in human breastmilk.²⁹ Recalls ensued, and public concern led residents to purchase powdered milk, opening the door to imported fluid milk from the mainland in 1984. Over time, competition from cheap fluid milk imports as well as high input costs and other dynamics caused the industry to collapse. In 1955, there were 86 dairies, by 1993, 14 dairies remained.³⁰ Now Cloverleaf Dairy, a 300-cow operation, is the only Grade A dairy in Hawai'i, meaning it's licensed to sell milk for fluid consumption.³¹ Other small dairies, including multiple goat dairies like Hawai'i Island Goat Dairy, have become viable by cultivating their own branded, processed products and building direct markets.³²

In previous decades, beef production in Hawai'i was primarily based on an export-oriented cow/calf model, where farmers keep a cow herd, produced calves, and diverted yearling animals to feedlots on the continental U.S. to 'finish' or fatten on grain and other inputs ahead of slaughter to be sold into the conventional continental market. However, the development of grass-fed and grass-finishing techniques and genetics in Hawai'i over the last decade or more have enabled more local beef production. Now, a portion of the youngstock are raised to maturity, finished on grass, and slaughtered in the islands and enter local markets as grass-fed beef.^{33, 34} Early adopters that developed high-quality, grass-fed premium products included Parker Ranch and Kuahiwi Ranch, who, in partnership with Hawai'i Foodservice Alliance, established some of the first large markets for grass-fed beef brands in Safeway and Foodland retail grocery stores. Local beef is still a small portion of the beef consumed in Hawai'i

HAWAI'I ISLAND GOAT DAIRY

Hawai'i Island Goat Dairy rotational grazes goats and processes their farm-raised goat milk into multiple varieties of fresh and aged cheese. In addition to direct-to-consumer sales online and at farmers markets in Waimea, they sell their cheese through multiple restaurants and retail outlets.³²





business, and a market for broilers, and are one of many organizations in Hawai'i working to grow local food farms.⁴⁰

(locally processed beef accounted for only 6% of the beef consumed in 2018) but there is room to grow the market. In 2018, some 43,500 calves were shipped out of Hawai'i, and only about 11,100 were processed in the state.³⁴

Other livestock are raised and direct-marketed for meat, including pigs, sheep, and goats. Small scale, family growers predominate in pork production, and natural farming methods are widely used, with only 7,000 hogs in Hawai'i as of the state's 2022 inventory.³⁵ According to USDA's Ag census, there were about 27,000 sheep being raised on 548 farms, and 16,225 goats on 609 farms in 2017.³⁶ Promoters of small ruminant production on Hawai'i note that a major chokepoint is the lack of processing space for small ruminants, with processing dominated by cattle, and live animals are often sold instead of processed meat.³⁷ Egg and poultry production are both present in Hawai'i, but don't represent a large portion of the agricultural market. The 2022 Ag census reported 697 farms with approximately 298,000 laying hens. 98% of those farms were small operations (with 400 or fewer hens), and only two facilities had more than 50,000 layers.

Only 55 farms grow chickens for meat, amounting to around 12,800 birds.³⁸ Turkeys and ducks are also raised in small numbers. All told, farm sales of poultry and eggs reached over \$17.7 million in 2022.³⁹

Sust'āinable Moloka'i, a non-profit organization on Moloka'i that also hosts a food hub, has been supporting poultry farmers through their Mahi'ai Moa program. They provide education, supplies to start a chicken

Small-scale farmers in Hawai'i benefit from a strong and highly collaborative network of support actors helping to advance their production skills and efforts. Many of these organizations collaborate through the Ag Training and Technical Assistance Hui and the Ag Finance Hui. Some organizations offer beginning producers farm incubation with land access, such as GoFarm Hawai'i's AgXcel and AgIncubator programs. GoFarm is a farmer training program of the College of Tropical Agriculture and Human Resources (CTAHR) at the University of Hawai'i, which offers multiple in-depth and hands-on farmer training programs at sites across the islands. CTAHR Extension also offers educational workshops and 1:1 technical assistance on production techniques. Other organizations and institutions provide land access through unique programs or partnerships. For example, Kamehameha Schools has awarded leases to producers through a business plan competition. Pacific Gateway Center provides land leasing opportunities specifically for immigrant farmers.

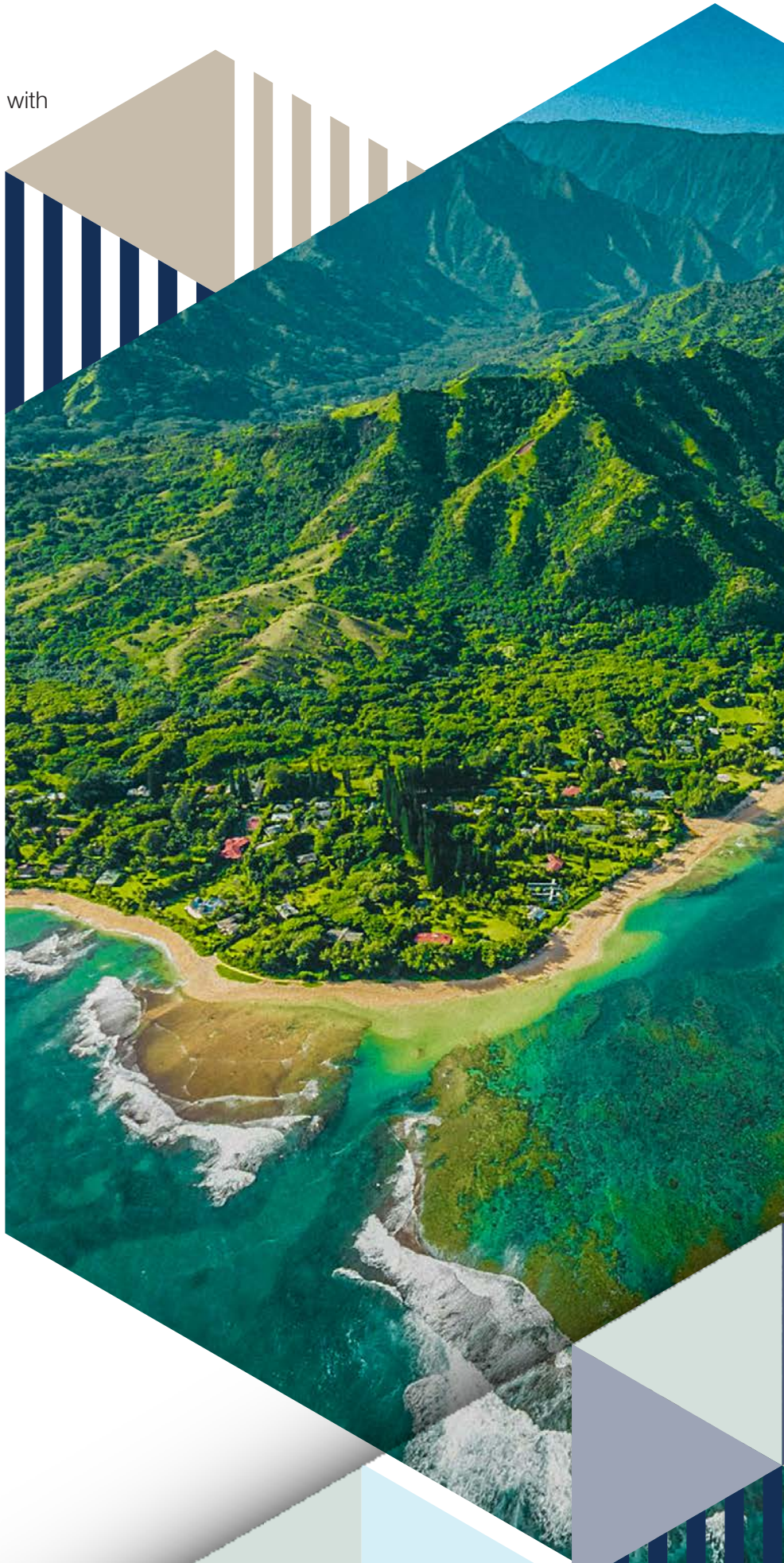
Other organizations provide specialized, technical production support. The Kohala Center provides guidance on how to grow Polynesian cultural crops, MA'O Organic Farms provides training and internships in organic farming, and North Shore Economic Vitality Partnership (EVP) aids producers in food safety and GAP certification. The Agricultural Diagnostics Services Center is widely relied upon for soil testing. Local food producers also have opportunities to network with each other and learn from their community through networks like Hawai'i Farmers' Union United. Hawai'i Farm Bureau Federation is a strong advocate for farmers at both the local and federal level, pushing for policies that support business viability, and they provide educational and marketing support for their members through various programs. We cover support for farmer business planning activities in the Access to Capital section of this report.

Challenges & Opportunities

As noted above, farmers face challenges with high costs for land, labor, and imported inputs. Competing with artificially cheap, imported food makes it harder to produce profitably, and it can be difficult to gain access to land and water, and control invasive pests and diseases.

While accessing farm labor and providing competitive wages continues to be a challenge, there is also an opportunity to address both. Providing a 'runway' by subsidizing staff capacity on farms through training programs can help employees learn skills while farm sales grow. This may enable farms to generate enough income through growth to afford competitive staff wages for up-skilled labor. Further, building strong connections across the industry and providing training can help increase the perception of farming as a long-term career.

Despite these realities, food production for local consumption is growing in Hawai'i even as the state's agriculture industry overall has declined. Applying Indigenous knowledge and traditional agricultural practices is an opportunity to produce in ways that care for the land and provide culturally meaningful foods to communities across the island, within both the formal and the subsistence or sharing economy. Finally, a climate and environment that can support multiple, abundant harvests through a year-round growing season and a community tied deeply to the 'āina provide an opportunity for farmers of all kinds to be part of the solution to the state's production challenges.





Waianu Farm Spotlight

Brothers Paul and Charlie Reppun have farmed together for over 40 years. Nestled in the Wāiahole and Waihe'e Valleys on O'ahu, their farm includes 10 acres under production, and is un-certified organic. Charlie and Paul started farming with kalo (taro), and while wetland kalo remains their main crop, accounting for about half of what they produce, they grow nearly 100 varieties of edible plants. They have a certified kitchen on the farm and make poi, and also grow cacao which they process into chocolate. In addition, they grow other canoe crops such as 'ulu (breadfruit) and 'uala (sweet potato), as well as corn, carrots, tomatoes, and other tropical fruit. They have also raised bees and produced honey.

The Reppuns have a strong reputation for their skills and knowledge both as organic growers and experienced canoe-crop producers. They share their wisdom and passion for organic farming with the community, hosting farm workshops, serving as a host site for the University of Hawai'i- West O'ahu's practicum internship, and hosting school groups to teach children and youth about the local food system. Over the decades, their farm has been a classroom to thousands of learners from pre-school to adults. The Reppuns have partnered with Roots KKV food hub to bring fruits and cultural foods to their patients for 10 years. ^{9,27,28}

PROCESSING

Current Realities

Food processing in Hawai'i can be a challenge for many different types of farm and food businesses. Meat and dairy businesses rely on access to processing for viability, while for produce, processing adds value, and preserves peak harvest abundance. Yet, all local food producers would benefit from improved processing infrastructure and access within their value chain.

Meat Processing

Livestock processing in Hawai'i varies island to island. The Department of Agriculture owns three slaughterhouse facilities and leases them to private companies: Hamakua slaughterhouse on Hawai'i Island (operated by Hawai'i Beef Producers LLC.), the Kalaeloa Slaughterhouse on O'ahu (managed by Hawai'i Meats), and Molo-ka'i Slaughterhouse on Moloka'i.⁴¹ In addition to these publicly-owned facilities, multiple small, private butchering operations operate throughout the islands, such as I'O Processing in Kona, or Moloka'i's MauiNui Venison which specializes in deer processing. Many of these private slaughterhouses are processing meat for their own brands as well as processing for other ranchers.³³

Dairy Processing

For bulk fluid milk, dairy processing is limited to one processor, Meadow Gold, owned by Dean Foods, the US' largest dairy company.

Nearly all of its fluid milk is sourced from the continental US, other than milk sourced from Clover Leaf Dairy, Hawai'i's lone remaining grade A, bulk milk producer.³⁰ However, small goat dairies have developed on-farm processing facilities to produce high-end, value-added products such as cheeses and caramels that are marketed locally. This processing scale is suited to the farm, generally using the farm's milk supply for value-added products rather than aggregating from multiple farms.

Produce Processing

During peak harvest, some produce supply exceeds the demand for local fresh consumption, goes unharvested and rots. If processing infrastructure was available the surplus could be captured, preserved, and harnessed to support





Hawai'i's local food supply. Avocados are an example of a crop that are ubiquitous on farms and in the wild, they produce abundantly, but significant production goes to waste. With infrastructure to make value-added products like oil (which is currently lacking) even over-mature avocados could be aggregated and processed.²⁶

Different types of infrastructure for value-added processing can serve very different scales of food business. For small and early stage value-added producers, shared use kitchens provide space for recipe development and small-batch production. Shared kitchens can support small-scale value added producers who sell products at farmers markets or through direct-to-consumer markets, and they can also launch value-added producers who can use them to develop proof of concept products (developing products in small batches and testing them in the local marketplace before attempting to scale them further). However, scaling value-added producers often outgrow shared-use kitchens, eventually requiring specialized equipment, more capacity to process volumes, and larger storage. Such manufacturers begin to need their own space, which is generally costly and difficult to find.

Multiple organizations host shared-use commercial kitchens including the Pacific Gateway Center and food hubs, like Ho'ōla and O'ahu Fresh. O'ahu Fresh provides kitchen space to businesses beyond the incubation stage and Ho'ōla hosts a value-added processor training program, providing its trainees with kitchen space and access to markets via the hub.

Previous funding has supported food hubs to develop more value-added processing infrastructure. Some hubs have started their own specialized processing at

various scales, like Local Harvest (Maui) which produces a Sattvic brand of kitchen spreads and nut butters and Kahumana Food Hub (O'ahu) which makes fruit-roll ups and other produce products. Similarly, Adaptations (Hawai'i Island) makes spices and tinctures and Farm Link Hawai'i (O'ahu) has even begun to process their own meat and make butter. Multiple food hubs are developing dehydrated, freeze-dried, and juiced products.

Scaling up value-added processing and creating consumer packaged goods (CPGs) with local products is a huge challenge, and there are limited successful examples in Hawai'i. However, companies like Piko Provi-

Piko Provisions



Ethan West started Piko Provisions, a consumer packaged goods company, and created Hawai'i's first all locally grown baby food in the fall of 2019. Piko makes baby food from all natural ingredients grown in Hawai'i, and packages them in resealable, single serving grab-and-go pouches. Two food hubs, Hawai'i 'Ulu Cooperative and Kahumana, help Piko source minimally processed ingredients. Piko engages First Commercial Kitchen, a co-packer, to further process, thermally pasteurize, and pack finished product in their manufacturing facility.

Piko quickly grew distribution to be sold in over 130 locations in Hawai'i by 2022, and works with the Hawai'i Food Service Alliance to support distribution, and with four food hubs- Farm Link Hawai'i, Kahumana, O'ahu Fresh, and Mālama Kaua'i. Two of the driving inspirations behind Piko were Ethan's own experience growing up on an organic dairy and produce farm in Maine, and a 2019 study from the Healthy Babies' Bright Futures that found toxic metal contamination in baby foods. In response, Ethan wanted to create clean baby foods, and some of Piko's products have since gone on to win double purity awards from the Clean Label Project.^{26,42,43,44}

sions, which has developed an all locally-grown baby-food pouch, and the 'Ulu Cooperative, a food hub, have successfully scaled to include mid-sized manufacturing. Developing farmer supply networks and accessing specialized manufacturing equipment are large undertakings, and CPG companies would benefit from ready-made supply of minimally processed products for ingredient use. 'Ulu Cooperative and Kahumana food hubs, have both created and supplied minimally-processed products for Piko Provisions' ingredients.²⁶ There is also unmet demand for locally grown, minimally processed produce like carrot sticks and cubed squash (though these products remain few and far between).²⁶

The companies that do process and sell these items on-island are doing so with imported foods. Developing more processing capacity within the local food system would help local producers reach more markets, and help food manufacturers launch more products with local ingredients.^{42,43,44,45}

Some support actors are developing programs to help value added producers bridge the gap from small, cottage production to larger scale food processing. Maui Food Innovation Center is an entrepre-

neurship program supporting the value-added food industry. It supports product development via training, industry consultation, and a food manufacturing facility.⁴⁶ Leeward Community College's Wahiawa Value Added Product Development Center, a 33,000 sq ft center that opened in 2023 and is designed to incubate entrepreneurs to develop value-added products such as pickles and sauces from local sources, as well as products that need high-pressure-processing.^{47,48} In the past several years, that has been a lone co-packing facility available for Hawai'i-based value-added food companies to utilize: First Commercial Kitchen in Waipahu, O'ahu. The lack of multiple co-packers is a huge hurdle for growing food companies as it leaves small food businesses needing to first fund and then build their own manufacturing facilities.²⁶



Hawai'i 'Ulu Cooperative

Hawai'i 'Ulu Cooperative is a food hub and food manufacturing company focused on Hawai'i-grown canoe crop staples. The coop was formed in 2016 and has grown to over 140 member-farms on multiple islands, dedicated to revitalizing 'ulu (breadfruit) as a viable crop and dietary staple. They work with farmers of all sizes, including back-yard growers, to source kalo (taro), 'uala (sweet potato), pala'ai (squash), and 'ulu. The produce they use is grown and processed on multiple islands, and they are rapidly expanding sourcing and processing facilities on Maui and O'ahu. Their anchor facilities are on Hawai'i island—one facility in Kailua-Kona specializes in cooking, freezing, and packaging their products while another facility Hilo side dehydrates, mills, and packages their dry products.



The coop's product lines include frozen retail products that are ready to heat and serve for home cooks, and dehydrated products as well. They sell through wholesale channels, especially through retailers, and have partnered with the Hawai'i Foodservice Alliance and Armstrong (discussed in the aggregation and distribution section) on distribution. The coop has also sold to some institutions in the past. The school lunch program recognized kalo and 'ulu as grains, and as a result the cooperative was able to work with the Hawai'i Department of Education (DOE), providing these starches as a grain replacement for Kaukau for Keiki, the summer feeding program. They also worked with the DOE on a school lunch pilot program that incorporated these foods. The 'Ulu Cooperative has created opportunities for people of all ages to learn about cooking and enjoying canoe crops. Their Ho'opili 'Ai Lesson Plan and tasting box supports farm to school, and they've developed and shared recipes for home cooks as well as helping institutional food-service with recipes. As a result of their efforts, people across Hawai'i have access to cultural starches that were previously more difficult to purchase and prepare.^{26,45}



KĀKO'O 'ŌIWI

Kāko'o 'Ōiwi, a non-profit organization on O'ahu, has a 38 year lease on 405 acres in the He'eia wetlands from the Hawai'i Community Development Authority. Threatened by development, this wetland was originally one of the most expansive wetland kalo (taro) sites on O'ahu, with over 300 acres of kalo production up until the mid-

1930s. Kāko'o 'Ōiwi has restored around six acres of wetland kalo production and manages an additional 25 acres of land for dryland agriculture

and 25 acres for native forest and wetland restoration. In addition to kalo, they have 200 sheep, 100 'ulu trees, and grow five different varieties of cultural bananas.



Kāko'o provides cultural workshops, educational programs and natural resource restoration. It sells produce, and as well as value added products, processing kalo into traditional Hawaiian poi and kulolo. They sell produce and value added products directly to the community as well as to institutions and food hubs on O'ahu.^{8,9}





Challenges & Opportunities

Overall, access to processing infrastructure is limited at all scales. While shared use kitchens are supporting some very small or cottage-scale food businesses, more support and access is needed for producers at that scale. Also, bridging nascent processors into larger local food manufacturers requires much more sophisticated and higher-capacity infrastructure and accessing capital and taking on risk to build infrastructure is difficult for individual early-stage food businesses. High costs for energy, labor, and packaging materials (especially when supplies must be imported) only add to the challenge of value-added processors of all scales.

However, opportunities for processing abound, with abundant surplus crops available for processing on most islands and proven value added product recipes that can create new revenue streams for farmers and other small food businesses. Support actors have developed programs to support value-added producers at small scales (like new business incubators) and are establishing programs to help them continue scaling into larger volumes. Developing more shared facilities of different scales, including co-packing facilities, can support value added producers in developing products and scaling. Finally cultural foods like kalo and 'ulu, have been made more accessible via processing and distribution at scale, helping expand these foods in local diets.

**FOOD HUB MEMBERS OF
THE HAWAII FOOD HUB HUI
DECEMBER 2024**

MAUI

MAUI HUB
LOCAL HARVEST

HAWAII

ADAPTIONS
HAWAII 'ULU COOP
KOHALA FOOD HUB
THE FOOD BASKET
OK FARMS | HAWAII ECO
HO'OLA FARMS - HILO FOOD HUB

KAUA'I

MĀLAMA KAUA'I

O'AHU

FARM LINK HAWAII
KAHUMANA FOOD HUB
ROTS KKV FOOD HUB
O'AHU FRESH

MOLOKA'I

SUSTAINABLE MOLOKA'I

AGGREGATION AND DISTRIBUTION

Current Realities

Hawaii currently imports most of its food from the continent, relying heavily on a vulnerable, just-in-time supply chain. At any given point in time, commercial food supplies in Hawaii are only enough to feed the population (including tourists) for five to seven days.⁴⁹ The air and sea ports and the warehousing and cold storage for these systems are clustered in inundation zones that would likely be swamped by major hurricanes and vulnerable to water-logging and electrical outages. Building food sovereignty and locally-grown supply within Hawaii's food system can help Hawaii build resiliency and make it less vulnerable to crises and supply chain disruptions.

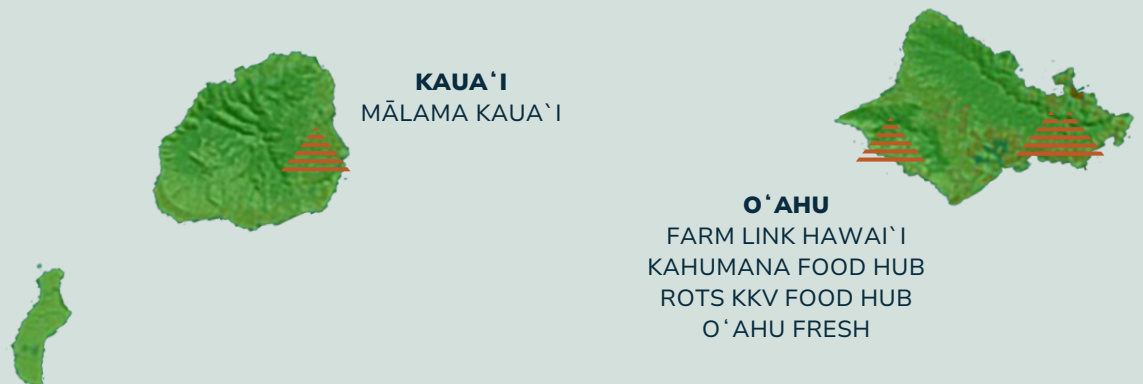
Many committed stakeholders have come together to develop Hawaii's local food aggregation and distribution systems, which, while sophisticated and advanced in comparison to many, comprises only a fraction of the food economy in Hawaii. A strong culture of community care and a holistic approach to health, food, and land have activated diverse stakeholders to take part in aggregation and distribution for local foods. For example, the Hawaii

Food Hubs

Food Hub Hui is a robust network and individual food hubs (described below) have developed not only from the 'supply side' (catalyzed by farmers and farmer support groups) but also from the 'demand side' (with some hubs emerging from within community organizations that buy food). One conventional Hawai'i distributor has committed to supporting local, aggregates and distributes some local food (along with imports) but few are willing to partner with food hubs to expand local sourcing. Inter-island shipping challenges, a lack of infrastructure and capital, and limited labor present significant challenges.

However, as a robust network of strong individual food hubs develop, local food aggregation & distribution efforts are gaining promising momentum. Below, because they are critical to this developing momentum, we explore the role food hubs are playing in Hawai'i's local food economy.

Food hubs are key middle-of the value chain organizations that source-verify, aggregate, distribute, and market local or regionally produced food. Most food hubs fulfill this mission by purchasing food from multiple farms and reselling it to a variety of customers, developing markets that individual farmers struggle to cultivate themselves. The food hub ecosystem in Hawai'i has grown significantly over time, and has been strengthened by the hubs networking, collaborating, and forming the Hawai'i Food Hub Hui (hui means network or collaboration in Hawaiian). Though more hubs or similar organizations operate in Hawai'i, 14 are members of the Hui, which collects detailed data from member hubs that we analyze below.⁵⁰ Hawai'i's hubs are diverse, utilizing a range of ownership structures and business models, and many have developed capacity to serve household consumers and wholesale accounts. Hawai'i Island, O'ahu and Maui all have more than one hub, and as a result those islands have more availability of services and coverage. The hubs in the Hui collectively source from over 1600 farmers and food producers, providing markets for all product categories from produce to meat, dairy, eggs, and value added products. Notably, many are aggregating and making traditional Polynesian crops accessible to Hawai'i residents, including supplying these cultural crops to many Native Hawaiian families through State programs like Kaukau for Keiki (Hawai'i's school Summer Feeding Program).



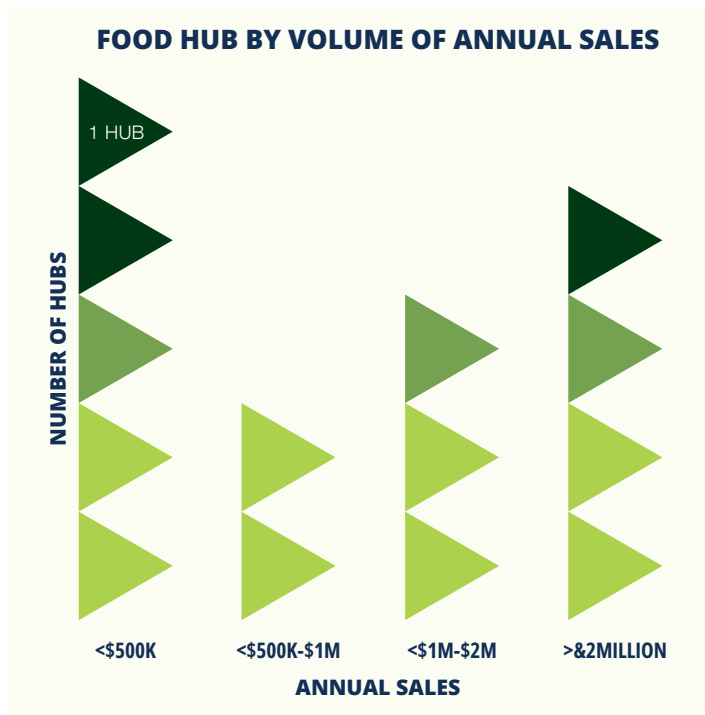
HAWAI'I FOOD

Food hubs are also innovating sourcing models that include Hawai'i's extremely small, backyard growers in the market.

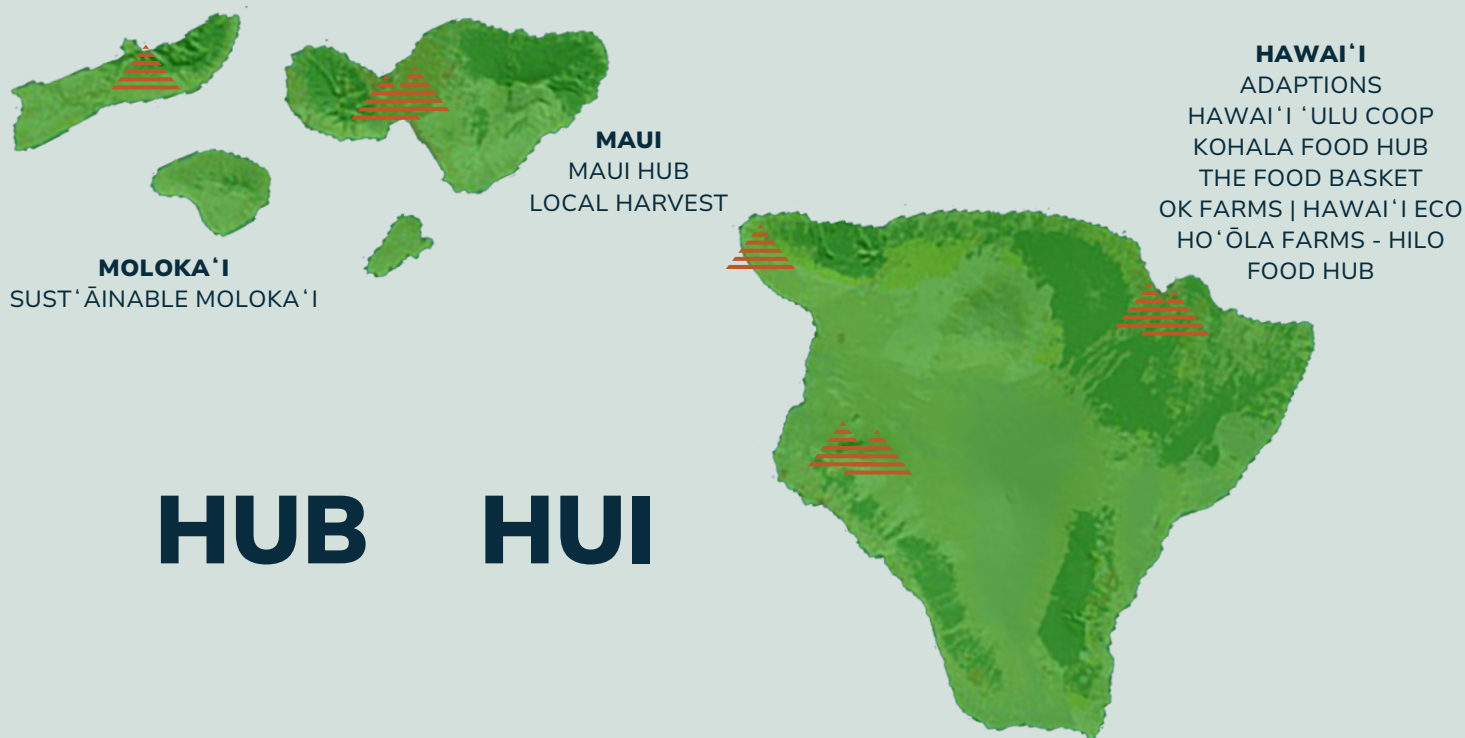
Structure & Revenue

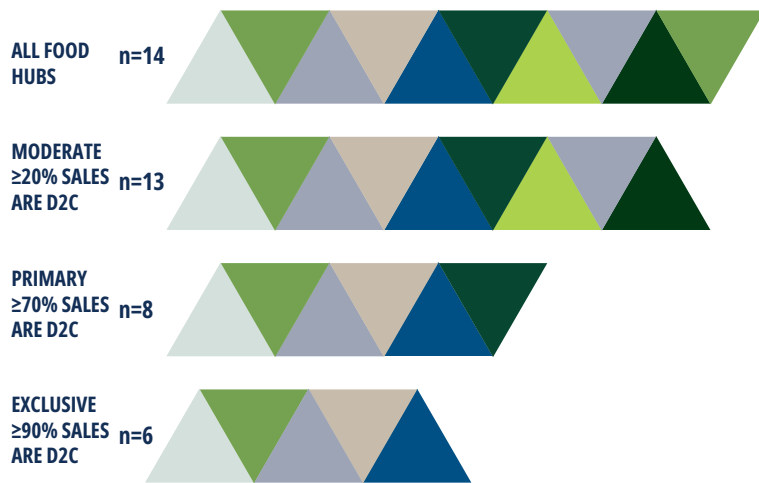
Eight non-profit food hubs that participate in the Hui include: Kahumana and Roots Kōkua Kalihi Valley (KKV) on O'ahu, the Kohala Food Hub, the Food Basket, and Ho'ōla Farms on Hawai'i Island, and Sustainable Moloka'i (Molokai), Mālama Kaua'i (on Kaua'i), and Maui Hub (on Maui). The non-profit hubs are positioned to respond to community circumstances and work with charitable programs as well as government agencies. These hubs are often the lead collaborators negotiating and partnering directly with government agencies on projects such as Kaukau 4 Keiki, Da Bux (Hawai'i's Double Up Food Bucks program), and Produce Prescription (PRx) programs. During the Covid-19 pandemic, many of them grew their food hub sales in response to food access needs and emerging government programs for food insecurity and local food procurement, and some of those have subsequently seen reduced sales as the pandemic evolves and emergency funding abates.²⁶

The group of non-profit hubs are currently characterized by being somewhat smaller than the for-profit hubs in



sales volume; many have under \$500,000 in annual sales, and nearly all (7 of 8) have less than \$1 million in annual sales.⁵⁰ This group tends to be more dependent on grants. The financial outlook for the non-profit hubs falls into two broad groups: those for which the food hub program advances the missions of other program





FOOD HUB USE OF D2C SALES CHANNELS - 2023

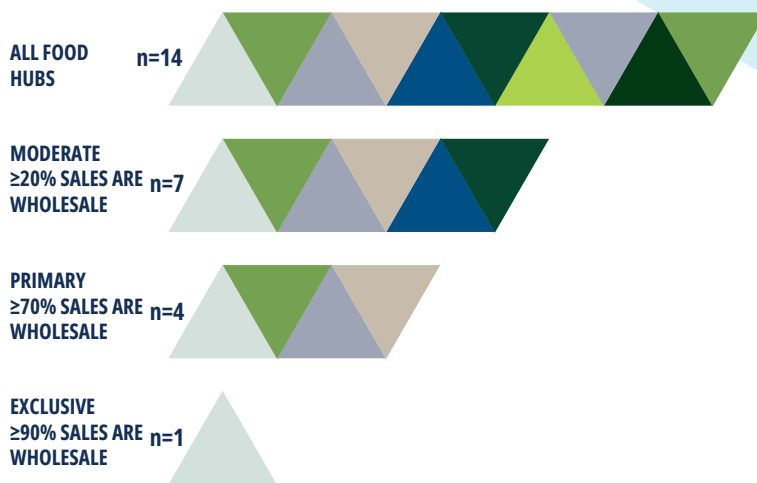
areas (i.e. health, food access, economic development) and can be subsidized by other program budgets, or those who are breaking even financially from sales revenue. While these “break-even” non-profits are able to fund their operations via their sales, they are generally not able to generate enough sales revenue to self-fund major physical infrastructure needed to build and expand food hub operations.²⁶

Six for-profit hubs include O’ahu Fresh, Farm Link Hawai’i (both on O’ahu) and Adaptations, OK Farms, and Hawai’i ‘Ulu Cooperative which is organized as a member cooperative (all on Hawai’i Island), and Local Harvest on Maui. For-profit hubs currently have larger annual sales revenue on the whole, with all of them selling over \$1 million in sales and half selling over \$2 million.⁵⁰ Generally speaking, the for-profit hubs are profitable and they utilize grants mainly to experiment, testing new innovations or projects to guide their business model development and expansion.²⁶

These sales figures reflect only a point in time. While some hubs consciously design their business models to be economically viable and meet their mission at a lower annual revenue, many hubs are moving through start-up growth phases and will continue to scale beyond their current size. Many hubs (both nonprofits and for-profits) are growing rapidly and will likely continue to increase sales in the coming years. All told, the 14 hubs sold over \$18.7 million in local food in 2023.²⁶

Direct-to Consumer & Wholesale Channels

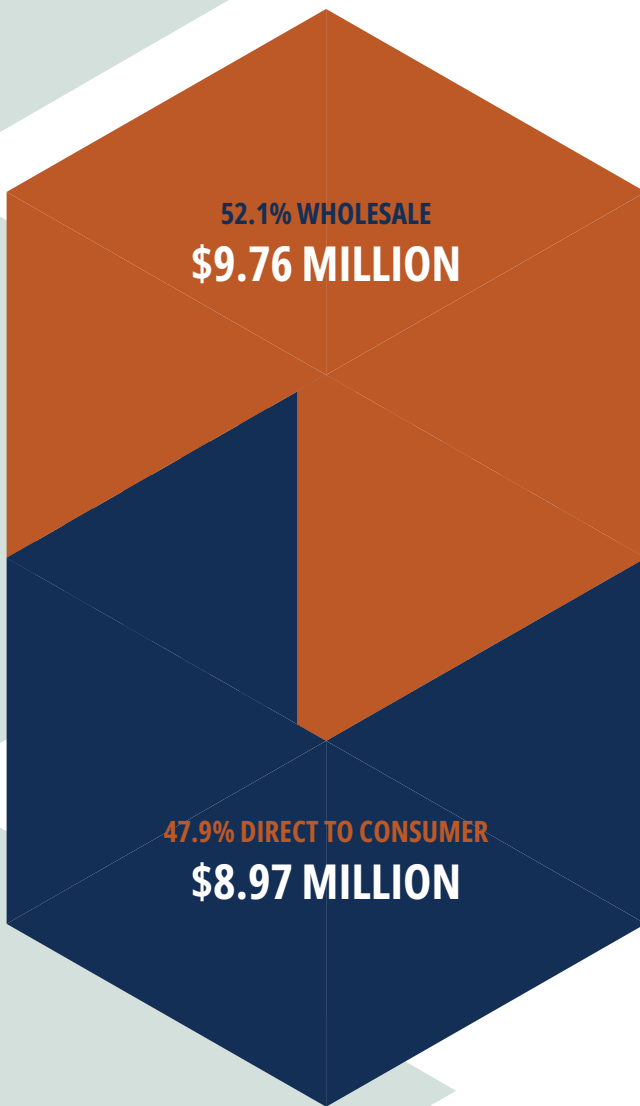
Direct-to -consumer (D2C) sales are an important part of nearly all Hawai’i food hubs’ business models and distribution systems, and accounted for \$8.97 million (48%- of the Hui’s 2023 sales). These channels include aggregated CSA boxes and online markets, and the latter has been a growth strategy for many of the hubs. In 2023, thirteen of the food hubs had at least moderate direct-to-consumer (D2C) sales channels, with D2C accounting for at least 20% of their 2023 sales. Hawai’i ‘Ulu Coop is the one exception, with only a marginal percentage (5% or less) of D2C sales. Eight of the fourteen hubs are primarily D2C focused and generated at least 70% of their 2023 sales from these channels. Of those, six hubs generated more than 90% of their revenue from D2C sales. Smaller hubs especially tend to rely on direct-to-consumer models; however, two of the larger volume hubs that generated over \$1 million in annual sales were also primarily D2C-based models.⁵⁰



FOOD HUB USE OF WHOLESALE SALES CHANNELS - 2023

Multiple food hub hui members have also cultivated wholesale channels and developed impressive capacity to serve wholesale markets and conduct sophisticated, high volume sales in the largest markets on O’ahu, Hawai’i Island, Maui, and Kaua’i. Wholesale sales made up \$9.76 million (52%) of the food hub hui’s total annual revenue in 2023; however, far fewer hubs had significant wholesale channels (and four hubs had no 2023 revenue from wholesale sales). Only seven derived a moderate portion- more than 20%- of their revenue from wholesale, and all were hubs with comparatively high annual sales. The four hubs who were primarily wholesale focused in 2023

HAWAI'I FOOD HUB HUI SALES - 2023



were also four of the six largest hubs by total sales. This correlation between wholesale sales and scale of food hub revenue is unsurprising, given that wholesale channels tend to yield lower margins and therefore hubs must reach a larger volume of sales to sustain their businesses (margins being the amount of each sale that is left after the food hub pays producers and covers necessary expenses).⁵⁰

Wholesale customers vary in the volume and types of products they purchase. Sales to hotels, restaurants, and retail stores often represent smaller sales volumes than schools, universities, or other large institutional foodservice. However these large institutions pose additional challenges, including more bureaucratic planning and procurement processes and longer payment terms. Value added processors, a third wholesale market, have different needs and a demand for specialized products, such as lightly processed ingredients. Currently, Hawai'i's wholesale hubs have robust sales with hotels, restaurants, and retail stores, but have not yet cultivated many consistent large institutional accounts.²⁶ Only a few- 'Ulu Cooperative and Kahumana- have been able to create minimally processed products for a food manufacturer (discussed previously in the processing section). If hubs capture sales with larger institutions, they would be able to increase the volume of food they are able to purchase from farms and scale the impact they have on local communities. And, if hubs can add manufacturing infrastructure and grow their ability to provide lightly processed products, they can boost development of the local food manufacturing industry in Hawai'i by efficiently providing ready-made local options to the food economy.²⁶



HUB NAME	ESTABLISHED	STRUCTURE	PLACE	SERVICE TERRITORY	MARKET CHANNEL	SNAPI DABUX	OTHER PROGRAMS
ADAPTIONS	1993	FOR PROFIT	HAWAI'I	MULTI ISLAND	D2C & WHOLESALE	X	FARM OPERATION: VALUE ADDED SPICES & TINCTURES
MĀLAMA KAUA'I	2006	NON-PROFIT	KAUA'I	ISLAND WIDE	D2C & WHOLESALE	X	FARMER & COMMUNITY SUPPORT
O'AHU FRESH	2009	FOR PROFIT	O'AHU	ISLAND WIDE	D2C & WHOLESALE		SHARED KITCHEN SPACE VIA SISTER PROGRAM O'AHU FOOD HUB
SUSTAINABLE MOLOKA'I	ESTABLISHED	NON-PROFIT	MOLOKA'I	MOLOKA'I	D2C & WHOLESALE	X	FARMER & COMMUNITY SUPPORT
LOCAL HARVEST HAWAI'I	2010	FOR PROFIT	MAUI	MULTI ISLAND	D2C & WHOLESALE		VALUE ADDED PROCESSING FOR SPREADS & NUT BUTTERS
THE FOOD BASKET	2011	NON-PROFIT	HAWAI'I	ISLAND WIDE	D2C	X	PART OF HAWAI'I ISLAND FOOD BANK
ROOTS KKV	2014	NON-PROFIT	O'AHU	KALIHI	D2C	X	PART OF COMMUNITY HEALTH CENTER FOR COMMUNITY MEMBERS
FARM LINK	2015	FOR PROFIT	O'AHU	ISLAND WIDE	D2C & WHOLESALE	X	VALUE ADDED PROCESSING FOR MEAT & BUTTER
HAWAI'I 'ULU COOPERATIVE	2015	COOPERATIVE	HAWAI'I	MULTI ISLAND	WHOLESALE		VALUE ADDED PROCESSING FOR POLYNESIAN CROPS WITH BRANDED CONSUMER PACKAGED GOODS
KAHUMANA FOOD HUB	2017	NON-PROFIT	O'AHU	ISLAND WIDE	D2C & WHOLESALE	X	FARM OPERATION & VALUE ADDED PROCESSING, PART OF NON-PROFIT SERVING HOMELESS FAMILIES, PEOPLE WITH DISABILITIES, & YOUTH
KOHALA FOOD HUB	2019	NON-PROFIT	HAWAI'I	WAIMEA, HAWAI'I	D2C & WHOLESALE	X	WAS PREVIOUSLY A PROGRAM OF A FARM SUPPORT ORGANIZATION HIP AGRICULTURE
HO'ŌLA FARMS	2020	NON-PROFIT	HAWAI'I	HILO	D2C & WHOLESALE	X	LAND ACCESS, FARM ICUBATOR, FARMER & VALUE ADDED PRODUCE TRAINING, SHARED-USE KITCHEN
MAUI HUB	2020	NON-PROFIT	MAUI	ISLAND WIDE	D2C & WHOLESALE	X	GREW OUT OF COVID RESPONSE PROGRAMMING
OK FARMS	2020	FOR PROFIT	HAWAI'I	MULTI ISLAND	D2C & WHOLESALE		FARM OPERATION & AGRITOURISM

Maturity & Capacity

The number of hubs has been steadily growing over the last 20 years. Adaptations, one of the entire US' first such businesses, started in 1993 as a component of a well-established organic farm. The next 'eldest' hub wasn't launched until 2006. Most of the hubs have been operating for under 10 years, with nine hubs established since 2014. While the hub ecosystem is expanding, each hub is also moving through its own stages of organizational growth. Only a few hubs in Hawai'i are addressing questions of fully mature businesses, such as transitioning ownership models, complex financing plans, and succession planning. Many of the hubs remain in start-up phases and as discussed above will likely continue shifting their sales focus as they grow.²⁶

As evidenced in the table below, more of the Hui's hubs are developing wholesale sales strategies in 2024 and beyond. D2C hub models can be viable at a variety of scales because those sales tend to yield higher mar-

gins for hubs (allowing them to break even with smaller annual revenues). In contrast, because wholesale channels tend to yield lower margins, and often have longer customer payment terms than D2C sales, they are difficult to enter unless hubs have working capital or strategies to manage cash flow and have a robust sourcing footprint to procure large quantities of local products. Therefore, hubs often don't enter wholesale markets until they've reached a larger scale.

Most of the food hubs carry a wide range of product categories, including produce, eggs, meat, dairy, and value-added products, thus offering market opportunity to a diverse array of farmers and producers. Hawai'i 'Ulu Cooperative is an exception; rather than carrying broad product categories, they specialize in 'ulu- (breadfruit), and other starchy cultural crops like kalo (taro), 'uala (sweet potato), and pala'ai (kabocha squash), which they aggregate, process into value-added products (including ready-to heat, frozen items), and sell through wholesale channels.

For intra-island distribution, many of the hubs have trucks on the road and are able to deliver products to their customers. However, each hub's growth is limited by their infrastructure, and all would benefit from expanded fleets and improved distribution capacities. For distribution, multiple hubs include home-delivery and/or deliver orders to multiple pick-up sites for their direct-to consumer customers. Hubs also offer direct delivery for wholesale customers. For aggregation, some hubs pick up products from farmers (versus having farmers drop it off) and some hubs have gained efficiency with their routing by combining farmer pick-up and customer delivery in the same route. And, while most hubs have a central location for warehousing, some are starting to create a network of aggregation points, or food hub 'nodes'.²⁶ These hub nodes are sites at an organization or a farm that is easily accessible to a cluster of producers, who drop their products

there for consolidated hub pick-up by the food hub. For inter-island distribution, however, the logistics for food hubs are extremely limited and challenging, as they must rely on third party air or boat freight. More discussion on this follows below.

While many of the hubs are positioned to provide food access to vulnerable communities, they have also become critical outlets to purchase and aggregate food from smaller, economically vulnerable producers. With Hawai'i's abundant growing environment, many community members across the islands have fruit trees and other back-yard production which are often used for subsistence and produce a surplus during their peak season. Many food hubs have integrated these 'back-yard' growers (for items like mango, 'ulu, papaya, and more) into their sourcing. This often includes producer education that helps backyard growers (and gleaners)

ADAPTATIONS, INC.

Adaptations is a farm and food hub in South Kona started by Tane and Maureen Datta. In addition to growing their own food and aggregating food from other farmers, Adaptations makes some value-added products, including spices and botanical tinctures. The certified organic farm was founded in 1979, and the food hub was launched in 1993 and was the first food hub in Hawai'i (and one of the first in the US), earning Maureen the title "fairy godmother of food hubs." As family farmers, the Datta's have organized and built deep connections to other farmers through the Hawai'i Farmers Union. They have generously shared their knowledge and passion with new food hubs, inspiring the formation of the Food Hub Hui.

Adaptations sources from over 180 small and medium-sized farmers on Hawai'i Island and Maui, and distributes products statewide. They utilize wholesale channels, selling to food service providers like restaurants and hotels, as well as retailers. Adaptations also has a direct-to-consumer channel on Hawai'i Island via its Community Supported Agriculture (CSA) program, Fresh Feast, which distributes to 25 pick-up sites on Hawai'i Island, reaching 500 households weekly. Some wholesale accounts have also become more advanced, and host CSA drops as well. For example, hotels that buy local for their foodservice operations have started CSA programs for their staff, and Adaptations can fulfill both needs.

Adaptations has developed complex route logistics to maximize efficiency. Farmer pick-ups and customer deliveries are often included in the same route, managed carefully to ensure space in the delivery van throughout the route. Furthermore, Adaptations has developed aggregation nodes, where multiple farmers can drop products to streamline pick-up logistics. This cuts down on the length of routes while providing farmers with a convenient way to get their products to the food hub.^{26,51}





learn about food safety, quality, grade, and pricing without having to start businesses of their own. ‘Ulu Coop sources from many of these growers, and Kahumana food hub on O‘ahu has been especially innovative in building markets for backyard growers by developing products and channels to utilize all of their production.²⁶

Together, the hubs have a very strong collective impact. Combined, they source from some 1,660+ farmers and they collectively employ 159 individuals (with staff sizes range from 4-32 employees, with 11 employees on average).⁵³ They are pivotal in driving the growth of Hawai‘i’s local food economy.

Beyond Aggregation & Distribution

While food hubs play an important role in aggregation and distribution, many of the hubs have additional programs or revenue streams that complement their food hub operations. All of the hubs provide either other services in the community, or engage in other parts of the food cycle, or both.

One such service helps farmers navigate production. Nonprofits such as Sust‘ainable Moloka‘i, Mālama Kaua‘i, and the Kohala Food Hub grew within organizations supporting development of sustainability and supporting farmers, before developing food hub programs to extend that support. The nonprofit Ho‘ōla Farms is involved in supporting food production via its farmer training and land access programs, in partnership with GOFarm Hawai‘i, that includes access to third-party land for trainees to farm and is especially focused on Veterans. Many of its farmers are also value-added producers and benefit from their value-added product training and the market access its food hub provides farmers. Three of the food hubs, Adaptations, OK Farms, and Kahumana, also operate production farms themselves and market and distribute aggregated products from other farmers alongside their own. OK Farms rents land to farmers that they source from, and has

also helped those farmers develop sales relationships with other food hubs.

Some of the hubs grew out of community health and food access efforts. Roots Cultural food Hub developed out of the KKV health center, where the food hub’s constituents are the health center patients. KKV focuses on Polynesian ancestral crops, cultural foods and storytelling. It also has a farm and a cafe for community growing and access to healthy, culturally appropriate prepared foods. Da Box, an aggregated CSA share distributed direct-consumer, is a program of The Food Basket, Hawai‘i Island’s food bank. The Food Basket helps administer Da Bux (Hawai‘i’s Double Up Food Bucks program for local produce) in partnership with the Hawai‘i Good Food Alliance, and helped ensure all food hubs in the Hui could process SNAP-EBT and provide Da Bux to consumers. Finally, many food hubs double as sites for value-added processing. All these additional “system benefits” from hubs contribute immensely to the state’s local food economy.

Hub Collaborations and the Hawai‘i Food Hub Hui

While the hubs can be analyzed as individual organizations, their shared successes, resiliency, and their

KAHUMANA FOOD HUB

Kahumana food hub is part of a social service non-profit organization in Waianae, established in 1974 to work towards ending local family homelessness, supporting people with developmental disabilities, and reducing Hawaii's reliance on imported food. The Kahumana food hub was started in 2017, and grew quickly, with markets that include both direct-to-consumer and wholesale outlets. It hosts a CSA and online store with home delivery on O'ahu, and SNAP and Da Bux are the fastest-growing segment of the CSA program. Kahumana has also worked with institutions, sourcing food for Hawai'i's Kaukau for Keiki summer feeding program and for Kamehameha Schools' O'ahu campus. Kahumana has focused on economic development for suppliers, and worked hard to integrate backyard growers into the food hub sourcing model. They created innovative 'open days' for aggregation twice per week, where any producer can bring their products into the hub for sale, which has encouraged small producers to participate in food hub growth, in turn creating a pipeline for farmer growth. On 'open days', growers see produce grading in action, learn about price points for different product grades, learn about food safety, and access support resources. And, they've created a streamlined reverse-invoicing system in which hub staff helps farmers finalize invoices, providing avenues for non-commercial producers to make successful sales. As small growers gain skills and knowledge and expand their farms, Kahumana works with them to plan for future sourcing.



Kahumana's is also a leader in value added processing, making products like fruit roll-ups with excess or 'B grade' fruit. In peak seasons, Kahumana hires farmers to help with the processing in order to accommodate large volumes, another creative way they've ensured a market for the produce and centered farmers.^{26,51,54}

collective development of Hawai'i's value chains are made possible because of deep networking and collaboration. Hawai'i's food hubs were first convened to explore collaboration in 2017 with support from the Hawai'i Farmers' Union. Established by Dr. Saleh Azizi Fardkhales, this group grew into the Hawai'i Food Hub Hui. Both the Hawai'i Good Food Alliance and the Hui were formalized during the COVID-19 pandemic, catalyzed by an urgent need for coordination and collaboration across the food system.

Today 14 hubs share in the Food Hub Hui's community of practice and collaborative network. Hubs share best practices with each other, learning from each other's successes and challenges, but they also collaborate with each other, coordinating distribution efforts, supplying each other with products, and aligning on policy initiatives. Saleh, who helps facilitate the Hui with support from one-time KKV food hub operator Christen

Olivera, has provided hubs with technical assistance and supports the development of new partnerships and markets for the hubs. The Hui also fundraises and administers collaborative grants that channel support to food hub members' development and expand their capacity. The data in this section is available because of the Hui members sharing information to be assessed in aggregate to better depict hub roles in the local food system. More information about the Hui and its members can be found on the hui website (www.foodhubhui.com).⁵¹ One food hub member of the Hui illustrates the spirit of the Hui's approach succinctly, stating that food hubs the Hui opens opportunities for the group "while also allowing for each food hub to exist and grow depending on their hyper-local circumstances."⁵⁴

Hubs have collaborated with each other on sales in many ways. Some established hubs have helped other hubs grow sales by providing them with products to develop their customer base. Local Harvest played this role in helping Sust'ainable Moloka'i expand sales, and Adaptations has also provided products to help other Hawai'i island-based hubs

develop. Nonprofits hubs have led government grants and contracts for programs related to food access and school meals. For example, Kahumana and Mālama Kauaʻi are sponsors with the Department of Education for Kaukau for Keiki, the school summer feeding program. To fulfill the program volume, they source from Local Harvest, Adaptations, and Oʻahu fresh.²⁶

Finally, like many hubs across the U.S., Hawaiʻi's hubs buy and sell to each other to help each other diversify product mixes, consistently offer specific products, and fulfill large orders.²⁶ All told, 12 hubs buy from other hubs, with annual purchases ranging from \$1,000- \$235,000, but none spend more than 15% of their annual revenue on purchases from other hubs.⁵⁰ Six hubs sell products to other hubs, with those annual sales ranging from \$35,000-\$500,000. On average, hub-to-hub sales make up 10% of revenue for those six 'supplier' hubs, and none of them earn more than 30% of their annual revenue from sales to other food hubs.⁵⁰

State-Owned Aggregation Facilities

Hawaiʻi is unique in having some publicly-owned facilities designed for farmers both to cool and store their crops. The state owns three such facilities, overseen by the Department of Agriculture and leased to farmers, farmer groups, or co-operatives.⁴¹ Crops are aggregated at these facilities for the purpose of accessing shared infrastructure. At some sites individual farms retain ownership over their crops, and share the cost of facility use, and at others products are aggregated and marketed by the lessee. Vacuum cooling chambers available at some of these facilities rapidly remove field heat from crops that can withstand the quick-chill process, like cabbage.³³

On Hawaiʻi island, the Kamuela Vacuum Cooling Plant in Waimea was formed in 1964 and covers 19,500 square feet, with two vacuum cooling chambers, two walk-in refrigerators, three refrigerated containers, and a loading dock. This facility is operated by the Kamuela Vacuum Cooling Cooperative, which is seeking additional members. Its farmers grow many crops including cucumbers, kale, chard, carrots, radishes, tomatoes, beets, broccoli, and cabbage.⁵⁵ The Honalo Processing and Marshalling facility also on Hawaiʻi Island was built in 1993. The Hawaiʻi 'Ulu Cooperative, a food hub and processor, operates the space and has recently invested in a walk-in freezer and refrigerator expansion to triple its cold storage capacity.⁵⁶ A third state facility is located on Molokaʻi. Finally, Maui County owns the Kula Vacuum Cooling Plant, which is currently leased by the Maui Produce Processing Cooperative.³³

While these facilities provide exceptional infrastructure to the farmers who have access to them, they remain out of reach for most farmers.³³ Many of them continue to need updates and enhancements, and all benefit from the operational partnerships from cooperatives or other food and farm groups. When effective partners manage these facilities, they are able to run operations efficiently, increase capacity, engage more producers, and maximize the state's investment to positively impact farmers.²⁶

Traditional Aggregation & Distribution System

Ports and Import Infrastructure

Honolulu's main harbor is the single-entry point for all of Hawaiʻi's imported food, and the only port able to handle large container ships and the volume of freight necessary to sustain the just-in-time food system.⁴⁹ Food brought into the Port of Honolulu is then redistributed onto barges for inter-island distribution. The warehouses of every major food distributor (and where all imported food is stored and cooled) are all nearby in a flood prone area, including for the main food-bank.⁵⁷ A major hurricane could compromise this concentrated food system infrastructure in many ways: by damaging the port itself and making it impossible to unload container ships, by damaging power plants and creating power outages that would take out critical cold-storage facilities, or by damaging the food warehouses directly. In the just-in-time system, distributors have very little inventory and most foods are warehoused for only a short period of time before they reach store shelves and end-users.⁵⁸ Therefore, there is little food supply (approximately five to seven day's worth) in Hawaiʻi at any given point in time.⁴⁹ As a result, the state recommends that households keep a 14-day supply of food and water on hand in case of emergency (guidance few households are able to heed).

Inter-Island Freight

Two companies provide inter-island shipping freight in Hawaiʻi, which is key to distribution. Young Brothers is the lone company shipping by boat, and Aloha Air Cargo the single com-

pany shipping via plane. Aloha Air also runs an air route to/from Seattle. Each of these freight companies can handle piecemeal shipping and large-volume refrigerated containers.²⁶ It is much more cost effective for those using the shipping services to consolidate their products and ship in larger volumes via container, rather than shipping piecemeal. Hawai'i's food hubs have used Young Brothers and Aloha Air to ship inter-island, however they do so to move small quantities of food rather than container loads. The Food Hub Hui is looking for opportunities to coordinate for consolidated shipping, and they have connected with Young Brothers about how to optimize shipping, with both partners understanding that consolidated local food shipping would help reduce costs for the food hubs and freight provider alike.²⁶

Traditional Distributors

Hawai'i Foodservice Alliance (HFA) is a privately owned company selling food to grocery, retail, and club chain stores. HFA has trucking infrastructure on all islands and their own containers to consolidate for inter-island and import shipping via ocean and air freight.⁵⁸ HFA brings in food from the continental U.S. to distribute on the islands via regular passenger flights, and via both ocean and air freight companies.⁵⁸ During the pandemic, HFA's owner saw the vulnerability of Hawai'i's 'just in time' food system first hand: after tourist flights stopped coming and logistics options were reduced, it became more difficult to get food from the continent.⁵⁸ Concern about Hawai'i's vulnerability to food insecurity during a crisis has made HFA a proponent of cultivating local food systems and expanding food production in Hawai'i.

HFA works with 40 local food manufacturers, generally farmers and producers that have developed their branding and products to sell at scale, including value-added products from Hawai'i 'Ulu Cooperative.⁵⁹ HFA and the Food Hub Hui have also formed relationships and started exploring collaboration, with the Hui touring HFA's warehouses and HFA staff speaking with the Hui members. They continue to consider ways to work towards integrating food hubs into HFA's sourcing, or for HFA to pilot projects to support food hub shipping via its consolidated shipping

inter-island shipping logistics, which would likely require food hubs and/or farms to overcome barriers like GAP certification.

Other traditional distributors operate on all the islands, but have not deeply engaged with local food systems partners there. For example, Armstrong Produce and Kula Produce are two broadline fresh produce wholesalers and distributors owned by Freshpoint, Sysco's specialty produce subsidiary business. In Hawai'i, Freshpoint consolidated them via a 2019 purchase, and at that time they had a combined annual revenue of approximately \$155 million.⁵⁹ They have large warehouses, distribution centers, and truck fleets on Hawai'i Island, O'ahu, and on Maui. While Freshpoint advertises that they source fruits and vegetables from over 100 local farmers across the state, their interactions with the food hubs and their small and mid-sized local farmers have been few and far between (an exception being Armstrong carrying products from the Hawai'i 'Ulu Cooperative).⁶⁰

Food Banks

Food banks are non-profit organizations that play an important role in the food access supply chain, distributing large volumes of food to food pantries, shelters, soup kitchens, and other food access points where community members in need can access it for free. Three main food banks serve Hawai'i, sourcing food in wholesale volumes from Federal commodity programs, Feeding America, donations, and purchases from food growers, manufacturers, retailers and wholesalers. Hawai'i Foodbank serves O'ahu and Kaua'i directly, and consolidates shipping with containers between the two islands.⁶¹ Maui Food Bank serves Maui county, and ships from their location on Maui Island to Lāna'i and Moloka'i.⁶² The Food Basket serves Hawai'i Island. Like most food banks, they source the majority of their foods via the industrial food system, relying on food imports to Hawai'i.

However, all three food banks have had extensive collaborations with food hubs to source local products, especially during the COVID pandemic, when much of their produce came directly from food hubs.²⁶ The Food Basket has further committed to local food systems by developing its own food hub program, DaBox, aggregating and distributing from local farms (discussed above) and Kōkua Harvest, a gleaning program for backyard fruit and gardens.⁶³

Challenges and Opportunities

Hawai'i's reliance on imports and on concentrated infrastructure to facilitate importation poses a major food system vulnerability and a challenge for food security; developing a localized food system presents a huge opportunity for Hawai'i to build resiliency and safeguard against vulnerabilities, ultimately protecting residents from food insecurity. Well coordinated, highly sophisticated, and infrastructurally sound value chains and markets for locally-raised food provide not only an opportunity to build community health and local economic vitality, but they are also a requisite for managing the very serious vulnerabilities in Hawai'i's food supply chain. Government actors and other stakeholders recognize this, and are primed to partner in developing food systems as a solution.

Hawai'i's food hubs have been at the forefront of building the infrastructure and the capacity to aggregate and distribute source-identified, Hawai'i-grown food while supporting small and mid-size farmers. Hubs have grown remarkably, more than tripling their annual revenue in the last five years; the Hui's combined annual revenue increased sharply from \$5.5 million in 2019 to \$18.7 million in 2023.⁵⁰ Through their development, the hubs have significantly developed local food sourcing, aggregation and distribution infrastructure, and the market for small and mid-sized producers. The hubs have become a strong building block of the food system, and will continue to be integral to expanding the system and solving persistent challenges.

Large gaps in the aggregation and distribution system for local, source verified food and small & mid-scale food producers remain. Reaching rural areas continues to be challenging; there are still geographical gaps where farmers have difficulty

accessing hub infrastructure or other markets, and where aggregation and distribution options are limited. There are opportunities to support more farmers in accessing aggregation and distribution networks, whether by helping new organizations such as farmer coops or aggregators form, or by helping food hubs to extend their sourcing networks through improved fleets and aggregation nodes. Dr. Azizi shared that in the absence of infrastructure and market access, farmers often leave produce to rot in the field. If more aggregation infrastructure existed throughout their islands it would have a large impact on such growers.²⁶

While some are quick to suggest creating new food hubs to address aggregation gaps, this is not always a good solution. Developing nodes is often a better strategy because it maximizes existing hub infrastructure and markets and it avoids the many challenges food hubs face in scaling to build sufficient markets and reach viability. Hawai'i's state-owned vacuum cooling and marshaling facilities provide a promising model, but few such facilities currently provide sufficient support for small producers. Finally, improving the capacity of all types of aggregators and food hubs to coordinate amongst themselves and integrate logistics will maximize the use of shared infrastructure and expand system-wide capacity for local food aggregation and distribution. Inter-island aggregation and distribution remains a major challenge for the food hubs and for all small- mid-sized food businesses. To access reduced rates for air and ocean shipping, these actors must consolidate large enough volumes of food to ship via container, rather than less-than-truckload amounts. This presents a huge opportunity to reduce costs and increase the distribution capacity for food hubs and for small and mid-sized food producers statewide. Collaboration could take many forms, such as a food hub or hubs working with the Hawai'i Food Service Alliance for pallet space in their existing shipments. It may also require additional infrastructure like shared containers or port warehousing to facilitate logistics. Ultimately, pilot projects or feasibility studies that explore different models for inter-island shipping would help stakeholders develop systems and strategies to make inter-island aggregation and distribution accessible.

ACCESS TO MARKETS

Hawai'i's formal market for local food is growing along with farmer participation in the formal local food marketplace. Wholesale channels like hotels, restaurants, groceries and small retailers are increasingly accessible to small producers and still have room to grow (in large part thanks to Hawai'i's massive tourism and hospitality industry). Pilot projects with larger institutional customers have been successful, with private schools committing to significant procurement of local food. While pilot projects with government agencies have established proofs of concept, they have yet to be fully adopted by these large buyers of food.

Niche markets for Polynesian crops and the traditional cultural foods of Hawaiians are also growing, bolstered by food hub aggregation and processing activities that have made these foods more accessible and easier to prepare. Finally, while not easily tallied, informal 'markets' of communal subsistence production and redistribution contribute significantly to Hawai'i's food system. Overall, while formal market growth for local and regional food producers has been impressive, and subsistence and sharing economies remain important to the overall food economy, local and regional foods have not yet reached broad "market penetration", let alone market saturation. Access to local markets remains limited for small and mid-sized producers in Hawai'i, and competing with cheap imports continues to be a fundamental hurdle. In short, local foods have only reached a small fraction of their potential to feed Hawai'i.

Hawai'i's Food Marketplace

Some \$6 billion are spent on food annually in Hawai'i. It is estimated that local Hawai'i residents account for \$3.5 billion of that, while tourists make up the remaining \$2.5 billion. It's estimated that 90% of all food purchased is imported with the remaining 10% produced in Hawai'i: this makes an annual market for local food estimated at \$600 million.²⁶ However, this estimate has a considerable gray area, as it is extrapolated not only from local food market data, but also by approximating the value of the subsistence and food-sharing economy for which data is almost nonexistent. One exception is the island of Moloka'i, where research has shown that approximately 39% of the average family diet comes from subsistence.⁶⁴ Although Moloka'i may be an outlier, this data point indicates that subsistence foods make up a not insignificant amount of food of the local diet. While subsistence and sharing economies are difficult to enumerate, they are critical

to Hawai'i's food system, to food access and security for Hawai'i residents, and to practicing and conserving Hawaiian traditional ecological knowledge and culture.

For formal local food markets, the available data shows that Hawai'i's market for local food has been growing substantially. Data from the 2022 USDA Census of Agriculture shows farms' total direct food sales of \$230 million, a 51% increase from \$152 million in 2017 (25% growth when adjusted for inflation).⁴ And average food sales per farmer have grown for D2C sales, from \$17,296 in 2017 to \$31,421 in 2022 (a 51% increase when adjusted for inflation). Average wholesale per farmer does not follow the same trend. Though it grew from \$141,822 in 2017 to \$152,666 in 2022, with inflation this represents an 11% reduction in the average; however, the number of farms using wholesale channels simultaneously increased by 40%.⁴ As noted in the production section, the local food market is arguably more central to producers in Hawai'i than in any other state; the 2022 Census data also reveals that Hawai'i ranks no. 1, surpassing all other states, for its percentage of total agricultural sales derived from direct food sales, at 34.16%.⁴

In 2022, wholesale sales accounted for 81% of the local food market while direct to consumer sales made up the remaining 19%.⁴ Both markets have sharply increased, with growth in direct-to consumer markets somewhat outpacing wholesale growth. In the five years between the 2017 and 2022 census, the value of direct-to-consumer food sales increased from \$27.9 million to \$43 million, 28.1% inflation-adjusted growth, while national direct-to-consumer sales contracted by 3.4% when adjusted for inflation.⁴ Wholesale channels have also dramatically increased, with the value of food sold to retail markets, institutions, and food hubs for local or regionally branded products growing from \$124.5 million in 2017 to \$187.2 million in 2022, a 24.9% inflation-adjusted increase.

142 more farms report participating in direct-to-consumer markets than wholesale markets- with 1,368 participating in D2C and 1,226 participating in wholesale in 2022.⁴

FOOD SALES IN HAWAI'I AND THE US | 2017 & 2022

	HAWAI'I			NATIONAL
	2017	2022	% INCREASE (INFLATION ADJUSTED)	% INCREASE (INFLATION ADJUSTED)
D2C SALES FROM FARMS	\$27.9 MILLION	\$43.0 MILLION	28.1%	-3.4%
WHOLESALE FROM FARMS	\$124.5 MILLION	\$187.2 MILLION	24.9%	30.5%
COMBINED D2C & WHOLESALE SALES FROM	\$152.4 MILLION	\$230.2 MILLION	25.4%	22.5%
HAWAII FOOD HUB HUI COMBINED SALES	\$3.97 MILLION (2018) ⁶⁵	\$15.36 MILLION	227.7%	N/A

Direct-to-consumer markets tend to be easier-entry for smaller farms and beginning farmers with lower production and sales volume, so it stands to reason that more farms are utilizing direct-to-consumer channels. Given the sharp increases in sales across channels, it also follows that farms report overall higher participation in food marketing channels in 2022 than in 2017 (as discussed in the production section).

Direct to consumer markets remain strong strategies for both farmers and food hubs; both utilize

CSA shares and online retail stores to support D2C sales. Farmers also utilize farmers markets for direct sales. Farmers markets are scheduled events that happen at physical sites, where multiple farmers set up stands and sell their products directly to the consumers who attend. They are widespread and robust across much of Hawai'i, with over 100 markets across the state that draw both local consumers and tourists. Farmers Markets are very popular in Hawai'i and are the most common direct-to-consumer market for farmers. With support of an HFGA project which provided educational opportunities and supporting funding for SNAP applications, many markets have gained the ability to accept SNAP EBT and DaBux and

KTA Super Stores

KTA Super Stores, a locally owned supermarket business on Hawai'i Island, developed its own Mountain Apple Brand ® to support the local agricultural economy in the post-sugar era. The name mountain apple honors Hawaiian history and culture. 'Ohi'a-'ai in Hawaiian, it is one of the traditional canoe crops introduced by Native Hawaiians.

The Mountain Apple Brand ® includes food grown, processed, or manufactured in Hawai'i. It launched its first product, fluid milk, in 1992, and today directly sources over 200 food products from more than 50 local vendors across categories of produce, meat, dairy, and value added products including culturally specific foods and baked goods.

KTA has also been a strong supporter of DA BUX- Hawai'i's double up food bucks program for SNAP shoppers, and have promoted the program to shoppers and driven many double up food bucks sales on the Big Island. As local grocers and dedicated community members, KTA's staff and owners have long been changemakers, invested in how to invest in the local economy and strengthen Hawai'i. ^{68,26}



make markets more accessible for all consumers.⁶⁶ Wholesale market development is a promising frontier for growth. As discussed in the aggregation and distribution section, food hubs themselves are an important wholesale market and facilitator for small and mid-sized producers. In 2023, the hubs' combined annual sales were \$18.7 million, and in 2022 were \$15.4 million.²⁶ From 2018 to present, the food hubs have paid farmers nearly \$49 million in food purchases.²⁶ Estimating that food hubs return roughly 70% of every dollar to farmers,²⁶ in 2022 hubs would have paid farmers around \$10.8 million,⁵⁰ approximately 5.8% of the wholesale market for local food documented by the 2022 census.⁴

However, many of the producers that hubs support would not have been able to access a wholesale market other than a food hub.

Furthermore, the hubs have been expanding dramatically and increasing their purchasing power at a rate outpacing the wholesale market. Over the last five years they've grown from a collective \$5.56 million in sales in 2019 to \$18.73 in 2023, an inflation-adjusted 182% growth in five years, and a 36% annual average growth rate.⁵⁰ While the wholesale market for local foods, as noted above, increased 25.4% between 2017 and 2022 when adjusted for inflation, food hub sales increased 227.7% in a similar timeframe (between 2018 and 2022, 2017 data is not available for the food hubs). Importantly, the hubs pass approximately 70% of their sales revenue on to farmers,²⁶ underscoring how the economic impact of foods extends to producers.

For both farmers and food hubs, wholesale markets show great promise and are the next frontier for continued growth. Food system stakeholders perceive hotels,

Roots Kōkua Kalihi Valley (KKV)

Kōkua Kalihi Valley started as a community movement to understand health and social service needs of the Kalihi Valley community in 1971. It has since grown to nine sites, with ~200 employees, and is now a Federally Qualified Health Center (FQHC). KKV is deeply rooted in the local community, serving a diverse population that speaks more than 20 different languages. KKV works holistically and serves community needs with a focus on the importance of culture in community health. It runs elder care programs, behavioral health, after school cultural programs and bike exchanges for youth, and incorporates Hawaiian massage and traditional approaches to conflict resolution into its services. KKV has also developed maternal healthcare programs, and a birthing program that centers traditional cultural practices in birthing.



KKV also recognized food as an integral part of well-being and a social determinant of health, acknowledging food as medicine and connecting people to their traditional foodways and their land. In 2015, KKV developed the Roots KKV Cultural Food Hub in 2015 to provide local food access, cooking classes, and healthy meals.

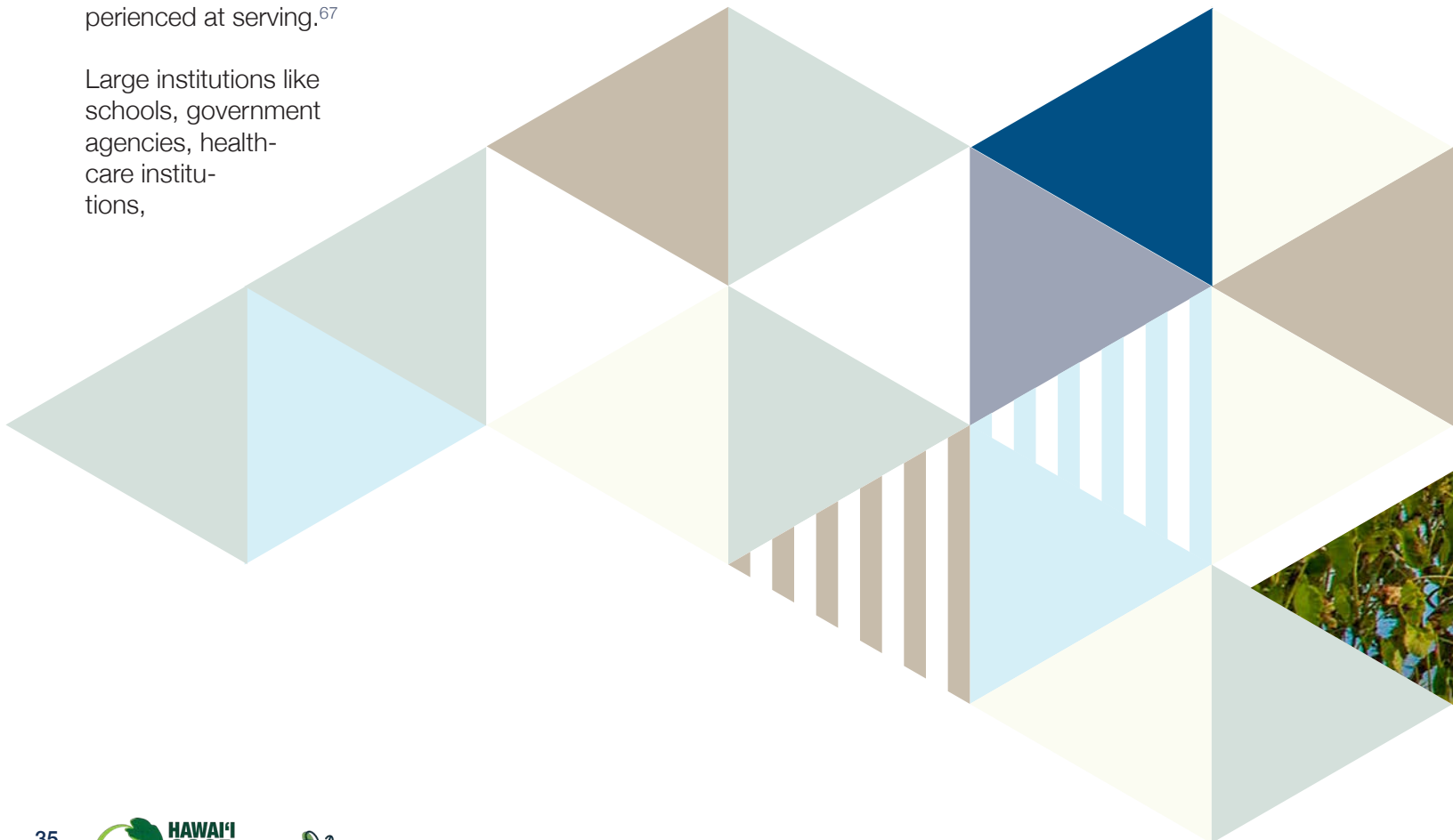
The Roots Cultural Food Hub has supported over 60 small farmers, backyard growers, and organizations by providing a variety of local foods, with a special emphasis on cultural starches and storytelling. The food hub focuses on direct-to-consumer avenues, sharing food with the public and patients of KKV through prepared meals, the Mobile Market, its GusNIP Produce Prescription Program, and the DaBux Program. As KKV's staff note, the community appreciates access to cultural starches; when KKV has 'ulu available to the community, there's often a line of people that stretches around the block. The farm and food work KKV has embraced as part of its mission sets it apart from many FQHC's nationwide, and strongly illustrates how people in Hawai'i consider local and healthy food systems central to their well-being and the vitality of their cultures, communities and environments.^{69,70}

restaurants, and grocery store purchasers to be ready buyers, and the ‘low-hanging fruit’ for wholesale expansion. The substantial (\$2.5 billion²⁶) tourist food market has room to grow its share of local purchases, with restaurants eager to brand themselves with the luxury, high- end, and conscientious attributes associated with local sourcing. However, even hotels that market their local food sourcing and work to menu local food still have capacity to buy more local food. Most have a 10% discretionary budget to spend on purchases outside of contracts with prime vendors, and are nowhere near their budget capacity.²⁶ Many have both the budget and the desire to purchase more local products. Grocery stores and retailers are also perceived as eager to purchase, and some groceries, like KTA Super Stores, are buying directly from farms. However, access points for most Hawai‘i consumers are still limited, and many super markets and stores chains carry no or few local foods, and have not yet developed procurement relationships with local suppliers. However, both the hospitality and grocery industries are seen as having very low current market penetration and high degrees of readiness to purchase once they can access consistent supply at scale.²⁶ There are opportunities to both increase sales to existing customers and to develop new accounts with these customers, which aggregators and farmers are already experienced at serving.⁶⁷

Large institutions like schools, government agencies, health-care institutions,

and food banks also represent large potential markets. Government agencies have a mandate to buy more local- recent legislation (HB 817 and HB 767) requires state institutions and the Department of Education (DOE) to make the food it serves in schools at least 30% locally sourced by 2030.

Hawai‘i’s DOE manages three food-sourcing programs that, combined, represent a large market for local food. The School Food Service Branch procures for Hawai‘i’s school lunch program, working with mainline distributors on each island to serve 256 schools. DOE currently sources 6% of its food locally via the Farm to School Program. However, the school lunch program demands 5.9 million pounds of produce annually that is suitable for growing in Hawai‘i.²⁶ If it sourced 30% locally, it could purchase as much as \$16 million worth of local food annually. (estimated based on 2024 food hub pricing).²⁶ The USDA Local Food Purchasing Agreement (LFPA), managed by the Office of Facilities and Operations, will provide a one-time, \$1.8 million grant to procure local produce for a food box program that would distribute to students and families in low-income communities over school breaks. Finally, Hawai‘i Child Nutrition Programs oversees the Kaukau 4 Keiki Pro-



gram, a USDA-funded non-congregate rural Summer Feeding Program spends approximately \$7-10 million on food sourcing annually, and food hubs have been actively sourcing for the program.²⁶ All told, the DOE programs represent a potential \$25 million annual market. However, while the DOE has successfully engaged with food hubs on small or pilot projects, such as Kaukau 4 Keiki, or Hawai'i 'Ulu Coop supplying 100,000 lbs of breadfruit to DOE schools, the DOE has not yet turned these into large or committed partnerships. DOE purchasing declined from 2022-2024, and the DOE has not scaled up local procurement, committed to concrete local procurement plans, or fully utilized capabilities of food hubs.²⁶

Private schools and other institutions have made more concrete commitments. Kamehameha Schools has actively brokered relationships between schools and local food hubs and producers, and has reached nearly 50% local sourcing at its O'ahu campus via Kahumana and Farm Link food hubs.²⁶ The Hawai'i Farm to School Hui, is a community of practice that includes Hubs, private schools, Farm to Keiki (a Farm to ECE initiative) school garden networks, and state agencies. This network of experienced practitioners can support others in learning how to increase procurement.

In the healthcare space, multiple organizations have worked to source local foods. Hawai'i Pacific Health, a hospital and clinic system, has taken part in the Institutional Purchasing Strategic Advisory group with Kamehameha Schools and the Food Hub Hui. Two community health centers, Waianae

Coast Comprehensive Health Center (WCCHC) and Kōkua Kalihi Valley (KKV) have run Produce Prescription programs; WCCHC's program provides vouchers for children, parents of children under 2, and pregnant women to buy fruits, vegetables, and poi at the local farmers market. KKV, which also operates Roots KKV Food Hub, offers prescriptions to its over 200 low-income patients with a holistic approach that includes cooking curriculum, access to indigenous Pacific Islander diets, and opportunities for participants to garden as well as to receive local food from the hub.^{68,69} These holistic approaches center food and culture at the heart of health.

Hawai'i is poised to create enormous market potential for local food through its innovative 1115 Medicaid waiver. Hawai'i would be the first state in the nation to support local produce in an 1115 waiver, explicitly prioritizing local food procurement within the text.⁶⁹ The waiver would create opportunities to source local foods for medically tailored meals and





produce bags, and to include local farms in nutrition education programming. Estimating that 50% of the 35,000 food insecure medicaid enrollees participate, each receiving a \$100 weekly voucher for local produce, the Medicaid waiver could generate \$91 million in local food purchases annually.²⁶ The Hawai'i Good Food Alliance has facilitated conversations to support local food procurement via the waiver.

Cultural food markets for 'ulu, kalo, and other ancestral crops represent a burgeoning niche market that cannot be filled by import competition. Many Hawai'i markets, including home consumers and school and healthcare markets, are enthusiastic about the opportunity to source culturally appropriate foods that are healthier than other staples and, due to the development of value-added-processing, are now easier to prepare. These markets previously didn't have easy access to foods such as kalo or 'ulu, which are not frequently imported by food distributors and require significant processing from their raw state into cultural foods. However, the growth of local aggregators and value added processing has enabled these important cultural foods to be served in schools and community health settings, and to be more accessible to home consumers. Crucially, the Department of Education recognized taro and 'ulu as grains, which has allowed their use in school food programs and market access to school customers. High-end and high-profile chefs, such as Sam Choy, have drawn attention to Polynesian crops, and have developed hospitality (and tourist) markets for these foods as well.

Kamehameha Schools and other learning institutions that center Hawaiian culture intentionally create opportunities for students to eat cultural foods like kalo and poi, and provide experiential learning around food and agriculture- working in the lo'i or learning to fish. These schools are raising children's awareness of cultural foodways, agriculture, and the food system, and shaping generations who will continue to carry on food traditions and value both ancestral crops and local food producers.⁶⁹

Challenges & Opportunities

Market growth for local food in Hawai'i continues to face barriers. First, cheap imports are challenging for local businesses to compete with in many market settings (D2C, grocery, institutions) where imports are both less expensive and the default. Further, high costs of living on Hawai'i make it even more difficult for home consumers to allocate more of their household budget to food. Large swathes of groceries and restaurants remain untapped for sales or could scale their purchases sharply. And, large institutional customers who could command significant market demand via programmatic choices have slow, bureaucratic procurement processes that are challenging to navigate.

However, there are many exciting market opportunities developing in Hawai'i as well. The impressive and

rapid pace of growth both for direct food sales and food hubs indicate that demand for locally-produced food is strong and that the market is far from saturated, with much room for growth. Grocery and restaurant markets are strong markets, and are perceived to have readiness to increase or begin procurement when approached by food businesses that can serve their needs. The hospitality industry presents a high-margin opportunity.

A strong culture of care for land and community in Hawai'i strengthens the market. Home consumers see buying local as a way to take care of the 'āina. Many local retailers and restaurateurs share that value. And, community health organizations have taken a holistic approach with their patient communities by centering food, culture, and 'āina in innovative health programs. Other institutional purchasers, like Kamehameha Schools, have similarly woven local procurement into a

Ahiki Acres: Financing a Farm

As discussed in the production section, Ahiki Acres was started by beginning farmers Haley and Matthew McKinnon in 2019, and is in transition from a GoFarm Hawai'i incubator production site to a 20 year agricultural land lease. Their farm has heavily relied upon grants and loans to get started. Training and support in business plan development (including from GoFarm, The Kohala Center and the KūHana Accelerator) helped the McKinnons develop a strong business plan to determine their growth trajectory and capital needs, and to seek funding. GoFarm and Oahu Agriculture and Conservation Association provided grant writing support, which helped them develop successful grant proposals.

The McKinnons have received various grants and cost-share, including a Young Farmers Grant, a Food Safety grant to construct a wash station, and a grant prize through Kamehameha's Mahi' Ai Scale-Up competition that allowed them to purchase a delivery van. They have recently applied for a Regional Food System Infrastructure (RFSI) grant, and have recently been awarded cost-share from the NRCS EQIP program. They've also taken on loans, including \$60,000 from friends and family to help acquire their \$100,000 agricultural lease, an FSA microloan, and a loan through Feed the Hunger Fund, a Community Development Financial Institution (CDFI). Haley struggled to access a line of credit, as her existing bank didn't offer them. She approached another bank, whose interest rates were too high. As a CDFI, Feed the Hunger Fund proved to be an aligned solution, poised to work with small local food and farming entrepreneurs. In the process of training and accessing capital, Ahiki Acres' journey was supported by multiple grants that funded non-profit programming, including the Alaska Native-Native Hawaiian Serving Institutions Grant, Beginning Farmer Rancher Development Program, and the Rural Business Development Grant. ^{15,16}



AHIKI ACRES

broader commitment to care for land and tend and practice Hawaiian culture with their students. There is emerging potential for large government institutions to commit to substantial local food purchases via the Department of Education and the Medicaid waiver, which could drive as much as \$115 million in local food markets. Those institutional purchases would also serve the most vulnerable populations that struggle to afford local within stretched household budgets. Further, aggregation and processing of culturally-specific Polynesian crops has led to a developing niche market that both serves high-margin hospitality industry outlets and provides access to culturally meaningful foods to Hawai'i residents.

Food Hubs and the Food Hub Hui have been key actors in developing these markets and facilitating access to them for small and mid-sized farmers. Expanding food hub infrastructure and supporting their growth is an important opportunity to develop the marketplace. Hubs will continue to be a critical supply chain link to continue to cultivate more grocery and restaurant sales. Building on food hub collaboration and coordination will also be key to institutional market development. The Hub Hui and the Hawai'i Good Food Alliance continue to work with government agencies and large institutions to strategize and advocate for local procurement in government programs. These support actors are helping institutions build readiness to purchase, while helping hubs develop the scale and hub-to-hub collaborations that will be critical to serving these markets, and if and when they commit to large-scale local sourcing.





CAPITAL ACCESS

Current Reality

Production and middle-of-the value chain food businesses alike often lack sufficient capital to launch and grow their operations. The system itself would benefit from existing local food capital providers and finance support orgs for local foods gaining more funds to inject into the system, along with abilities for flexibility to use innovative social finance mechanisms. The food system would also benefit from traditional lenders gaining an ability to assess risk for and lend to non-commodity farmers and middle-of-the-value chain food businesses, to further unlock capital that is currently not accessible to these businesses. While capital access remains a significant challenge for the food system, strongly networked intermediaries have been supporting farms and food businesses to develop business plans and fundable business models, and access capital that is currently available.

Capital for Food Farms:

In a 2018 survey, farmers identified access to capital as one of their top three barriers (with only labor and land surpassing it).⁷⁰ Traditional banks lend to the agricultural industry, as does

American Ag credit (Farm Credit), along with two lenders of last resort- the USDA Farm Service Agency and Hawai'i Department of Agriculture's Agricultural Loan Division. However, commercial lenders and ag-focused lenders are more familiar with commodity farm models, and often lack familiarity with local food models. They struggle to accurately assess risk, and their

Farm Link Hawai'i: Financing a Food Hub

Farm Link Hawai'i is a 100% local online grocer providing home delivery island-wide on O'ahu and sourcing statewide from around 300 producers. The company also has wholesale partnerships with O'ahu restaurants, institutions, and health clinics. Started by Rob Barreca in 2015, Farm Link is a for-profit and a member of the Hawai'i Food Hub Hui. It supports equitable local food access, providing free delivery to SNAP EBT customers, who receive an automatic 50% discount on all produce and poi through the DaBUX program. Farm Link considers itself an 'activist buyer,' working to develop tools that help producers de-risk and grow their businesses, whether through a reliable informal plan for future purchases, contracted purchase agreements, or prepaid forward contracts. Farm Link has also had to be thoughtful about financing its own growth. CEO Claire Sullivan described the financing process:



"We got really creative, we used all the tools, partly because like many farm and ag related businesses we weren't hyper attractive to investors in the conventional way. So we've had to be flexible and creative to work with partners who were interested in our shared mission and our social returns in addition to our long term financial returns- which are modest and in the future."

Farm Link has a blended capital stack of grants, loans, and equity. Federal grants played a major role in their initial funding. Because they weren't bankable in the conventional market, they worked with Feed the Hunger Fund, a CDFI, who was their first big lender. Kōkua Hawai'i Foundation and Johnson 'Ohana Foundation also supported their lending process, helping Farm Link gain access to a revolving line of credit at a bank through a fully-funded guarantee. With the low margins common in food and ag businesses, Farm Link couldn't promise a high return to investors, so they turned to impact investors with aligned missions. They used Simple Agreements for Future Equity (SAFEs), which provide investors a future equity stake in the company as they evolve. Some of their mission-aligned investors include Kamehameha Schools, Hawai'i Investment Ready, Elemental Excelsator, and private investors working through Natural Investors and Realize Impact.

Overall, technical assistance and support from many Hawai'i organizations and funders were critical to Farm Link's development. Early on, Rob trained at GoFarm when he founded the company, and benefited deeply from their support along with participation in Elemental Excelsator. Claire and Rob took part in HIR's Food Systems Accelerator cohort and received direct technical assistance on pro-forma development and investor due-diligence from Aaron Ellis (with support from Kamehameha Schools) as they prepared to raise capital. Claire described the relationships and support through those experiences as both challenging and amazing, pushing Farm Link to continue to plan scenarios and build a stronger model as they build toward profitability.

As Hawai'i's impact investment community learns more about food and farm businesses and successful case-studies grow, Claire expects that the financing process will be easier for the businesses that follow. She would like to see innovative tools more widely used, including unfunded or partially funded guarantees (rather than fully-funded guarantees), and mechanisms that direct donor advised funds into equity investments, (in which any returns are reinvested in charitable causes, and any recovered equity is returned to the charitable fund). Overall, Claire marvels at how much progress Hawai'i's food and farm business technical assistance and financing community has made in the last 20 years. She hopes that the community can continue to communicate to new investors, explaining the innovative mechanisms to put their money to use in the food system, and the context in which they're deploying capital - an agricultural system in which heavily funded public subsidies often leave out small and mid-sized farms and food businesses, who can be successful when they too have flexible financial support.⁷³

products are often not scaled for the needs of small farmers.

To support business goals, many producers rely on cost-share and grant programs. There is not always perfect alignment between a grant program's eligible expenses and a farmer's operational needs. For certain conservation-related practices, the USDA Natural Resource Conservation Service (NRCS) can provide cost-share to pay for infrastructure, but this applies to narrow costs that advance specific conservation goals. While lenders often lack the knowledge and skill to lend to local food farmers, the farmers also face challenges navigating lending institutions. Farmers lack the financial literacy to navigate the complex institutional landscape of lenders and USDA programs, and struggle with burdensome applications. These many challenges are only magnified by systemic inequities like race, class, and educational levels.

Capital for Middle-of-the Value Chain Food Businesses:

A capital scan conducted by Hawai'i Investment Ready (HIR) found that funding sources tended to be geared towards individual producers with fewer opportunities for the middle of the value chain (processing, aggregation, or distribution). More capital was placed in production, with less investment in other areas. HIR concluded that this investment pattern is affecting the efficiency and efficacy of the local food system.⁷¹ Given that food businesses 'in the middle' are receiving less investment than agricultural producers, it also follows that capital providers have less experience understanding their models and investing in them.⁷²

In sum, both farmers and food businesses require support to prepare strong business plans, fundable business models, and access capital. A network of support actors in Hawai'i works to support these businesses in different ways. Farm business training and one-on-one technical assistance is provided by GoFarm Hawai'i. HIR and the Hawai'i Small Business Development Center provide one-on-one business technical support to food and farm businesses. The Kohala Center and O'ahu RC&D help both farmers and food businesses write grants to access grant capital. And a network of food system support actors also offer loans, including Feed the Hunger Fund, HIR, and Kamehameha Schools (which also has a modest food systems investment fund). Others specialize in serving (and therefore lending to) specific populations, like the Pacific Gateway Center, the Council for Native Hawaiian Advancement, and the Office of Hawaiian Affairs. Many of these support actors have been collaborating and coordinating with each other via the Ag Finance Hui.³³

Challenges and Opportunities

While accessing capital, as outlined above, proves challenging for both farm and food businesses, there are many opportunities on which to build. As HIR's capital scan recommends, one opportunity is the development of new financial products to address gaps, including a guarantee pool, and Small Business Administration (SBA) products for the food system. HIR also details revenue-based financing, convertible debt, forgivable loans and recoverable grants as potential vehicles that, if developed, could address capital challenges in Hawai'i's food system.⁷²

While these support actors have been networking through the Hui, they are looking towards more coordination and collaboration to better serve their clients. The Hawai'i Good Food Alliance's Good Food Fund project, set to launch initially in July 2024, directly provides a suite of capital products (including an unfunded guarantee pool) but will also leverage a network of lenders, grantors, and technical assistance providers, to coordinate consulting services and capital.³³ This coordination will give clients access to other organizations' loan and investment products, and enable investors to collaborate on capitalization, sharing due diligence and deal flow. The more highly coordinated the finance hui and capital network, the better able they'll be to efficiently capitalize farms and food businesses and optimize the businesses' capital stacks and their sources and uses of funds.

RFBC Priorities for Hawai‘i

Role of RFBC in Hawai‘i and Islands and Remote Areas region

The RFBC program is designed to support the “middle” of the value chain in local and regional food systems. This means it focuses not on crop cultivation (the “beginning” of the chain) or consumption (the “end” of it), but on supporting small and medium-scale farmers and food producers in connecting to new markets, improving or expanding infrastructure for food storage, processing, aggregation, and distribution, and providing technical assistance and training opportunities, particularly for historically underserved and marginalized food and farm businesses. This is especially meaningful for the Islands and Remote Areas RFBC region, whose states and territories face unique challenges given their geographic isolation, challenging logistics, underdeveloped infrastructure, and the profound impacts of colonialism, extractive industries and climate change.

The Centers will coordinate across regions with USDA and other agencies and regional food system stakeholders, identify technical assistance needs for their region and provide TA, and build capacity of their region’s food and farm businesses by directing financial assistance in the form of business builder subawards. Through these activities, the Hawai‘i subregion and the Islands and Remote Areas RFBC will build more diversified, resilient, and localized food systems.

The Hawai‘i Good Food Alliance (HGFA), is a 501(c)(3) corporation formed by a state-wide collaboration of organizations that are engaged in the production, aggregation, and distribution of food with the goal of rebuilding thriving community food systems. The Alliance is the Lead on the Islands and Remote Areas RFBC, as well as the Key-Partner leading implementation for the Hawai‘i subregion. To shape the sub-region’s values, priorities, and implementation activities, HGFA convened an RFBC Hawai‘i Sub-region Steering Committee, including 20 organizations (eight of which are part of HGFA), and 30+ people from across the islands. This group started meeting in the second half of 2023, and met monthly throughout the planning year (ending in May 2024). Steering Committee members helped prioritize program areas and associated activities through discussion and a democratic vote. During this process, steering committee members discussed the values with which the RFBC should approach its work, and enumerated three guiding values.

Ensuring community access to food, a value that includes prioritizing access to local, nutritious, and culturally relevant food for all communities across Hawai‘i, celebrating local food, and including community- small/local producers, in the process.

Providing Support Services for Hawai‘i Food Producers and Practitioners, which focuses the RFBC on helping small farms of <5 acres become viable, and access the resources they need to succeed, with an additional emphasis on indigenous crops and production practices.

Centering Indigenous Voices and Perspectives, which grounds the RFBC’s solutions in indigenous worldviews and practices from farming methods to economic frameworks, provides support for indigenous practitioners and producers, honors generational knowledge in the community, and uplifts the voices and leadership of grassroots community groups, staying humble to community needs and priorities.

Summary of RFBC Priorities

Given the challenges and opportunities in each step of the value chain, the Hawai'i RFBC subregion has most highly prioritized two program areas of production and aggregation. Discussed below are the top three activities from each priority. Appendix A includes a full, ordered list of the program areas and the activities the RFBC committee selected

Priority Area 1: Food Production

▶▶▶▶ **A. Activity:** Support formation of farmer cooperatives, networks, and hubs to facilitate sharing of resources, aggregation, and accessing markets. Help build trust and relationships among producers.

WHO: This activity will engage grassroots groups of farmers, existing farmer networks, and existing aggregators and food hubs.

IMPACT: Many farmers are not yet accessing markets or working with aggregators, and large gaps exist in service territories for food hubs. This activity will help farmers selforganize and partner with others and learn from each other and find ways to share resources and infrastructure to enter the market

▶▶▶▶ **B. Activity:** Serve as a resource hub and “TA navigator” providing customized support on issues like production, aggregation, distribution, value-added product development, market access, and accessing financing. Create accessible resources like production templates.

WHO: This activity will engage individual farmers

IMPACT: This activity will help farmers find information in the complex landscape of agricultural production and farm business management, providing best practices, coordinating connections to experts and TA providers, and sharing resources.

▶▶▶▶ **C. Activity:** Provide financial assistance and advice to farmers, such as on equipment purchasing, food safety requirements, accounting, and accessing loans and grants.

WHO: This activity will engage individual farmers

IMPACT: Through this activity, technical assistance providers will help farmers directly address their problems; navigating the details of farm business management, demystifying government, capital providers, and other programs farmers rely on, and providing the financial resources to help farmers implement their business plans.



Priority Area 2: Aggregation

▶▶▶▶ **A. Activity:** Provide financial support, fundraising assistance, financial projections, and staff training to help establish and scale up food hubs, co-ops, and other aggregator models.

WHO: This activity will engage existing and emerging aggregator organizations

IMPACT: Aggregators are key actors serving the small farmers and community food system participation that the RFBC values. By helping them build skills, and business plan, and finance growth, the RFBC will also support and growing markets for local food for both producers and community.

▶▶▶▶ **B. Activity:** Offer technical assistance on distribution logistics like refrigeration, transportation fleets, inter-island shipping coordination, discounted shipping rates, shared distribution models, and federal equipment grants.

WHO: This activity will engage existing aggregators, mid-sized local food businesses that are self-distributing, and traditional food system partners who can provide logistics support.

IMPACT: Aggregators are key actors serving the small farmers and community food system participation that the RFBC values. By helping them build skills, and business plan, and finance growth, the RFBC will also support stable and growing markets for local food for both producers and community.

▶▶▶▶ **C. Activity:** Provide financial assistance for expenses involved in aggregation and distribution like vehicles, facilities, equipment, and staff. Offer low-interest loans or guarantee programs.

WHO: This activity will engage existing and emerging aggregators, mid-sized local food businesses that are self-distributing.

IMPACT: Financing the critical infrastructure that enable these businesses to serve more farmers and/or reach more markets.

Conclusion

Hawai'i has a complex but resilient and growing food system. Through its values and priorities, the Hawai'i Subregion RFBC is honoring the strengths inherent in that system-widespread community engagement in production, indigenous knowledge, cultural crops, a strong network of support actors, and a deeply committed consumer base who sees buying local food as a key part of the holistic movement to strengthen our local food system, and mālama 'āina. By supporting small farmers in developing their production, and supporting the aggregators who provide their market access, Hawai'i RFBC is untangling complex challenges and building on the successes that Hawai'i's strongly committed stakeholders have cultivated over time. The Hawai'i subregion is also leading with its values through the processes by which it governs its region. By engaging organizations and community members who participate in and see the food system from many different lenses, Hawai'i RFBC is uplifting community voices, staying humble, and, in community, creating emergent solutions that are greater than the sum of their parts.

Appendix A: RFBC Priority Areas for Hawai'i Subregion

Steering committee members prioritized RFBC approaches through a collaborative process. They brainstormed and discussed key themes and activities by program area. Steering Committee members were then asked to prioritize the program activities of the RFBC in two ways: (1) Overall Program Area; (2) Activities within each Program Area. The results of those activities, and the full prioritization for all program areas are summarized below.

Category	Production	Aggregation	Distribution	ValueAdded	Markets	Finance
Priority	1	2	5	6	4	3
Votes:	13	10	3	2	5	9

Priority Area 1: Food production

▶▶▶▶ **A. Activity:** Support formation of farmer cooperatives, networks, and hubs to facilitate sharing of resources, aggregation, and accessing markets. Help build trust and relationships among producers.

▶▶▶▶ **B. Activity:** Provide financial assistance and advice to farmers, such as on equipment purchasing, food safety requirements, accounting, and accessing loans and grants.

▶▶▶▶ **C. Activity:** Serve as a resource hub and “TA navigator” providing customized support on issues like production, aggregation, distribution, value-added product development, market access, and accessing financing. Create accessible resources like production templates.

▶▶▶▶ **D. Activity:** Provide support for and help cultivate farm labor, including mentorship and internship opportunities Offer wage subsidies or low-interest loans to support hiring labor.

Priority Area 2: Aggregation

▶▶▶▶ **A. Activity:** Provide financial support, fundraising assistance, financial projections, and staff training to help establish and scale up food hubs, co-ops, and other aggregator models.

▶▶▶▶ **B. Activity:** Provide financial assistance for expenses involved in aggregation and distribution like vehicles, facilities, equipment, and staff. Offer low-interest loans or guarantee programs.

▶▶▶▶ **C. Activity:** Offer technical assistance on distribution logistics like refrigeration, transportation fleets, inter-island shipping coordination, discounted shipping rates, shared distribution models, and federal equipment grants.

▶▶▶▶ **D. Activity:** Facilitate connections between aggregators/foodhubs and large institutional buyers to increase market access.

▶▶▶▶ **E. Activity:** Advise on value-added processing by providing financial analysis, market research, equipment recommendations, support with permits/certifications, and help accessing certified kitchens.

Priority Area 3: Access to finance

▶▶▶▶ **A. Activity:** Advocate for increased government investment and improved policies related to lending programs, farmland preservation incentives, agriculture subsidies, and local food system funding.

▶▶▶▶ **B. Activity:** Invest in food innovation hubs and incubators that can accelerate businesses by providing workspace, equipment, mentorship, and connection to capital.

▶▶▶▶ **C. Activity:** Serve as a connector between businesses and funding opportunities by maintaining a database of capital sources and providing matching and referral services; build stronger relationships between businesses and funders to address power dynamics, improve trust, and facilitate greater resource use; encourage friendship groups and community microfinancing to get around hesitancy in asking for assistance.

▶▶▶▶ **D. Activity:** Learn from the Aloha 'Āina Economic model that includes multiple aspects beyond conventional economic development/well-being. Strengthen the economic model that gives life (contrast between conventional and alternative economic choices. Nourish people in their practices, though means other than capital.

Priority Area 4: Develop markets and expand market access

▶▶▶▶ **A. Activity:** Fund double voucher programs that match the difference between what producers need to charge and what buyers can pay, to make local food more affordable.

▶▶▶▶ **B. Activity:** Administer grant and financing programs designed to help enterprises scale production and access equipment to serve larger institutional clients.

▶▶▶▶ **C. Activity:** Serve as a “matchmaker” connecting institutional food buyers with farmers, aggregators, and distributors that can meet wholesale needs.

Priority Area 5: Distribution and Transportation

▶▶▶▶ **A. Activity:** Provide financial assistance through grants or low-interest loans to help fund expenses related to distribution infrastructure:

- a. Delivery vehicles/fleets
- b. Refrigeration equipment
- c. Shared distribution models d. Interisland transportation

▶▶▶▶ **B. Activity:** Facilitate coordination between producers, aggregators, and distributors to optimize supply chain logistics; research and prioritize efficient equipment and delivery mechanisms (efficient in time, capital, resource use).

▶▶▶▶ **C. Activity:** Offer technical assistance on distribution logistics:

- a. Coordinating transport between farmers/aggregators
- b. Securing discounted shipping rates
- c. Navigating federal grants for equipment
- d. Shared distribution strategies

▶▶▶▶ **D. Activity:** Ensure transportation and distribution of food reaches all geographies, includes culturally appropriate foods, and ensures access to these channels and foods by immigrant businesses and populations.

Priority Area 6: Value Added Processing & Development

▶▶▶▶ **A. Activity:** Offer technical assistance, training, and help with permitting/certification for food safety, HACCP, and other requirements.

▶▶▶▶ **B. Activity:** Administer grants or low-interest loans to help enterprises access facilities, equipment, and meet operating expenses as they scale up processing.

▶▶▶▶ **C. Activity:** Assist businesses in accessing opportunities like shared commercial kitchen spaces, food innovation accelerators, and product development competitions.

Glossary of Terms

Food Systems Terminology

- ▶ **Food hub:** While there is a USDA definition of the term, we find it somewhat lacking. To us, food hubs are important middle-of the value chain businesses and organizations that source- verify, aggregate, distribute, and market local or regionally produced food. Most food hubs fulfill this mission by purchasing food from multiple farms and reselling it to a variety of customers, developing markets that individual farmers are not able to cultivate.
- ▶ **USDA Definition of Food Hub:** “a business or organization that actively manages the aggregation, distribution and marketing of source-identified food products, primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail and institutional demand”
- ▶ **Direct-to-Consumer:** This refers to sales between a producer and/or intermediary (i.e. food hub) and a consumer. These markets often include CSA programs, retail groceries, and farmers markets, among others.
- ▶ **Node or “Aggregation Point”:** The term ‘node’ comes from social network theory and describes ancillary sites with infrastructure where farmers could access food hubs and where food hubs and other entities could cross-dock products for pick-up.
- ▶ **Food Bank:** Food banks are non-profit organizations that play an important role in the food access supply chain. They aggregate large volumes of food, both via donations and purchases, and distribute it to food pantries and other food access points who provide it free to food insecure community members.

‘Ōlelo Hawai‘i (Hawaiian language) Terms

- ▶ **Ahupua‘a:** a traditional subdivision of land with unique geologic, climatic, and socioeconomic characteristics. Typically these tracts of land extend from mauka (mountain) to makai (ocean) and contain complete watersheds where in social groups managed food production, water quality, and in essence represent a self-contained food system.
- ▶ **‘Āina:** often translated as “that which feeds us”, this term refers to the land, earth, and physical space in which we live. This term also encompasses many aspects associated with physical land (e.g. ‘country’, place of origin, etc.) and is a pivotally important concept in Hawaiian culture.
- ▶ **Hui:** often translated as a “network”, “group”, or “partnership”, this term refers to people or things coming together, uniting, or otherwise joining forces for a

purpose. The salutation 'a hui hou' also means "until we meet/come together again".

- ▶ **Mālama:** the action of tending to, caring for, protecting, and/or serving someone or something. This term is central to food systems discussions in Hawai'i, as tending to natural resources is foundational to food production on the islands.
- ▶ **Kalo:** the word for taro, an essential Hawaiian crop that has been a culinary staple for Hawaiians for centuries. In the creation stories of Hawaiian culture, the original human created by the deities was stillborn and was buried in the soil, watered by the tears of his mother, and what grew was a heart-shaped leaf: the leaf of the kalo plant. The next human born, Hāloa, was sustained by the kalo that had grown and in return he tended to the plant diligently as it fed his 'ohana or family for generations to come.
- ▶ **Kaukau:** a common Hawaiian pidgin word meaning food/to eat or drink/to drink.
- ▶ **Keiki:** this refers to children, young people, or offspring.
- ▶ **Kuleana:** often translated as "responsibility", "privilege", or "right", this complex term refers to a reciprocal relationship between humans and/or between humans and their environment. It describes the personal and unique contribution that each individual is able to (or even destined to) make to their community, and it can change over time.
- ▶ **Kūpuna:** a common, respectful term describing elders, ancestors, or grandparents.
- ▶ **Limu:** a term used to describe a range of plants living under water, and specifically often used to refer to an edible seaweed commonly used in preparation of poke and similar Polynesian dishes made with raw fish.
- ▶ **Lo'i:** an irrigated, terraced production system for growing wetland kalo.
- ▶ **Loko kuapā:** a closed-wall fishpond traditionally made with lava rock walls, this aquaculture production system was once very common in Hawai'i. Typically built in shallow areas of a reef flat, land stewards would entrap several species of fish to make them easier to catch.
- ▶ **Loko i'a:** a fish pond production system consisting of brackish water ponds with kalo interplanted (fishponds). Different from loko kuapā, these systems were typically located further inland and focused on different species of fish. Both systems, though, were integral to managing the overall ahupua'a systems.
- ▶ **Niu:** refers to coconut. A foundational crop to Hawaiian and Polynesian culture and creation stories, niu is closely associated with the Hawaiian deity Kū. Wai niu (coconut water) holds special significance and is often used in

spiritual ceremonies.

- ▶ **‘Ohana:** refers to a family group, relatives, and/or extended family. The term can be inclusive of blood relatives, close friends, and chosen family.
- ▶ **Pala‘ai:** refers to pumpkin, winter squash, or kabocha squash. While the crop is not endemic to the Hawaiian islands, it arrived there from Japanese and Filipino immigrants (who themselves came to know it after Portuguese traders brought it from the Americas to their shores). Since then, it has become a staple food and a common intercropping plant planted below tree canopies.
- ▶ **Pono:** a common term referring to the goodness, moral qualities, righteousness, purpose, or true condition of a person or their actions. The motto of the State of Hawai‘i is Ua Mau ke Ea o ka ‘Āina i ka Pono or, loosely translated, the sovereignty of the land is perpetuated in righteousness.”
- ▶ **Poi:** a common traditional staple food of Hawaiian and Polynesian diets, poi is made from pounding cooked kalo (or less often ‘ulu) with a special pestle traditionally made of stone. It is often a baby’s first food, and it is highly regarded in creation stories and serves as a cultural reminder of one’s connection to nature, to each other, and to our ancestors.
- ▶ **‘Uala:** refers to sweet potato. Similar to pala ‘ai, this crop is not endemic to Hawai‘i (rather it is of South American origin), but it has become a staple food throughout the Polynesian islands.
- ▶ **‘Ulu:** refers to the many species of breadfruit, a pivotally important crop to Hawaiian and Polynesian culture. While precise stories of the plant’s arrival in Hawai‘i are not clear, some legends trace the crop to a story of Kū, the Hawaiian deity of farming and fishing, who transformed himself into an ‘ulu tree to feed his family during a period of famine. The crop represents perseverance, plenitude, and resilience.

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5. Based on the above analysis of NASS 2022 data, and totaling value of direct-to-consumer (D2C) and wholesale food sales from farms.
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