

DAVID Y. IGE  
Governor

JOSH GREEN  
Lt. Governor



DEPT. COM. NO. 288  
PHYLLIS SHIMABUKURO-GEISER  
Chairperson, Board of Agriculture

MORRIS M. ATTA  
Deputy to the Chairperson

State of Hawaii  
DEPARTMENT OF AGRICULTURE  
1428 South King Street  
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December 29, 2020

The Honorable Ronald D. Kouchi,  
President and Members of the Senate  
Thirty-first State Legislature  
State Capitol, Room 409  
Honolulu, Hawaii 96813

The Honorable Scott K. Saiki, Speaker  
and Members of the House of  
Representatives  
Thirty-first State Legislature  
State Capitol, Room 431  
Honolulu, Hawaii 96813

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

For your information and consideration, I am transmitting a copy of the Report on Agribusiness Development Corporation as required by Act 264, SLH 1994. In accordance with Section 93-16, Hawaii Revised Statutes, I am also informing you that the report may be viewed electronically at <https://hdoa.hawaii.gov/meetings-reports/legislative-reports/>.

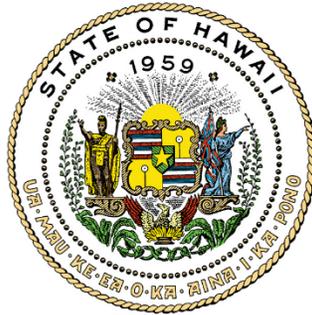
Sincerely,

A handwritten signature in cursive script, reading "Phyllis Shimabukuro-Geiser".

Phyllis Shimabukuro-Geiser  
Chairperson, Hawaii Board of Agriculture  
Hawaii Department of Agriculture

Enclosures





# Annual Report

Fiscal Year 2020

December 2020

Agribusiness Development Corporation

235 S. Beretania Street, Room 205, Honolulu, Hawaii 96813

T: (808) 586-0186 E: [hdoa.adc@hawaii.gov](mailto:hdoa.adc@hawaii.gov)

## Who is ADC?

The Agribusiness Development Corporation (“ADC”) is a state agency created by the Hawaii State Legislature in 1994 to conserve and convert arable lands and their associated infrastructure that were formerly large mono-crop plantation lands into new productive uses. Its ultimate goal is to ensure that agricultural production and agribusiness ventures will be responsive to the current food and other agricultural needs of the State. In 2005, the Hawaii 2050 Sustainability Task Force developed a broad, comprehensive plan that recognized local food production as a key element of food self-sufficiency and sustainability for the State. In his Sustainable Hawaii Initiative, Governor David Ige unveiled his 2016 roadmap, adopting the guiding principles of the Sustainability Task Force and narrowing his focus on five goals. Included among the five goals was the increase in food production as a key element in our quest to prudently utilize our natural resources and to ensure that we today and our successors in the future can enjoy the beauty and bounty of this great state.

ADC’s first major action, with the support of the Legislature, was the purchase of the nearly 100-year-old Waiahole ditch, in 1998, from the Waiahole Irrigation Company, Ltd., formerly the Waiahole Water Company, Ltd., a subsidiary of Oahu Sugar Company. Litigation over the propriety of the diversion and re-direction of water from the lush windward side of Oahu to the drier but arable lands in central and leeward Oahu began in 1995 and continued for 15 years, until its final resolution in 2010. ADC continues to operate and manage the 26-mile long ditch, which provides non-potable water to approximately 5,866 acres of agricultural lands.

In 2012, with a new administration, a new executive director, and an energetic and visionary board of directors, and again with the support and direction of the Legislature, ADC began an aggressive campaign to kick-start Hawaii’s diversified agricultural production. At the same time, Dole Foods Company and Castle and Cooke Hawaii began to divest themselves of lands that were best suited for agricultural use, keeping those lands with optimum commercial value for commercial and residential development. Through the concerted efforts, support, and confidence of the administration, the Legislature, and the private sector, ADC began and continues to acquire the best arable lands from Waialua to Wahiawa and Waipio, enabling it to fulfill its mission of conserving and converting former sugarcane and pineapple fields into diversified crop production, and guaranteeing these prime lands will never be lost to casual farming or other non-agricultural uses. Since 2012, ADC has acquired approximately 3,371 acres of former sugar and pineapple lands in the area. A breakdown of the land purchases can be found in the appendix.

With the current COVID-19 pandemic resulting in initial food shortages, the general public seems to have a better understanding and greater respect for local farmers. Local agriculture on ADC property will not only help us toward our goal of food sustainability, but diversify our local economy and help ADC safeguard Hawaii’s agricultural lands in perpetuity.

## ADC's Mission

To acquire and manage, in partnership with farmers, ranchers and aquaculture groups, selected arable lands, water systems and infrastructure for commercial agricultural use and to direct research into areas that will lead to the development of new crops, markets and lower production costs.

## What ADC Does for Hawaii

Rich agricultural lands are one of Hawaii's greatest assets. ADC's role is to protect the future of agriculture in Hawaii by facilitating its transformation from a dual crop economy of sugar and pineapple to a multi-crop industry. The breadth of ADC's responsibilities includes transitioning former plantation lands and water systems to diversified long-term agricultural use, initiating and developing diversified agriculture facilities, and finding innovative solutions for issues facing the agricultural industry today.

ADC's unique position enables it to coordinate Federal, State and private resources to optimize agribusiness opportunities. Its exemptions from Hawaii Revised Statutes Chapter 171 regarding land use, as well as Public Utilities Commission regulations and civil service laws, allow for greater flexibility in managing its programs. ADC fosters the growth of agricultural enterprises across the state by providing affordable irrigation and long-term licenses or leases to tenants, which stimulates investment in agribusiness and enhances the viability of agriculture in Hawaii.

ADC has the power to achieve these goals through diverse efforts, such as:

- Acquiring and managing select arable agricultural lands, water systems and infrastructure.
- Acquiring agricultural conservation easements to protect certain agricultural lands.
- Organizing farmers and users into cooperatives that benefit from the participants' common interests and collective efforts.
- Assisting in acquiring or constructing processing and/or treatment facilities to enhance producers' abilities to access export or value-added opportunities.
- Informing, educating or training farmers on various industry practices such as food safety, production techniques and land uses.
- Coordinating and cooperating with other government agencies, educational institutions and private organizations to advance agriculture in Hawaii.
- Conducting research and demonstrative projects to facilitate the transfer of knowledge or adoption of technology.
- Conducting economic and feasibility studies relating to agriculture.

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## Organizational Overview

The ADC is headed by a board of directors consisting of eight voting members appointed by the Governor, and three ex-officio voting members. The current members are:

Sandi Kato-Klutke, Chair  
Owner, Ti Leaf & Taro  
Kauai County Member appointed by Governor

Vacancy  
At Large Member appointed by Governor

Lloyd Haraguchi  
Retired, Executive Director, Public Land Development Corporation  
At Large Member appointed by Governor

Kevin Hopkins  
Retired, Executive Director, Pacific Aquaculture & Coastal Resources Center  
Hawaii County Member appointed by Governor

Frederick Lau  
Owner, Mari's Garden  
City & County of Honolulu Member appointed by Governor

Douglas Schenk  
Retired, Director, Maui Gold Pineapple Company  
Maui County Member appointed by Governor

Karen Seddon  
Regional Vice President, Michaels Development  
At Large Member appointed by Governor

Warren Watanabe  
Maui County Farm Bureau  
At Large Member appointed by Governor

Phyllis Shimabukuro-Geiser  
Chairperson, Board of Agriculture  
Ex-Officio, Board of Agriculture Chairperson

Mary Alice Evans  
Director, DBEDT Operations  
Ex-Officio, Department of Business, Economic Development & Tourism  
Designated Representative

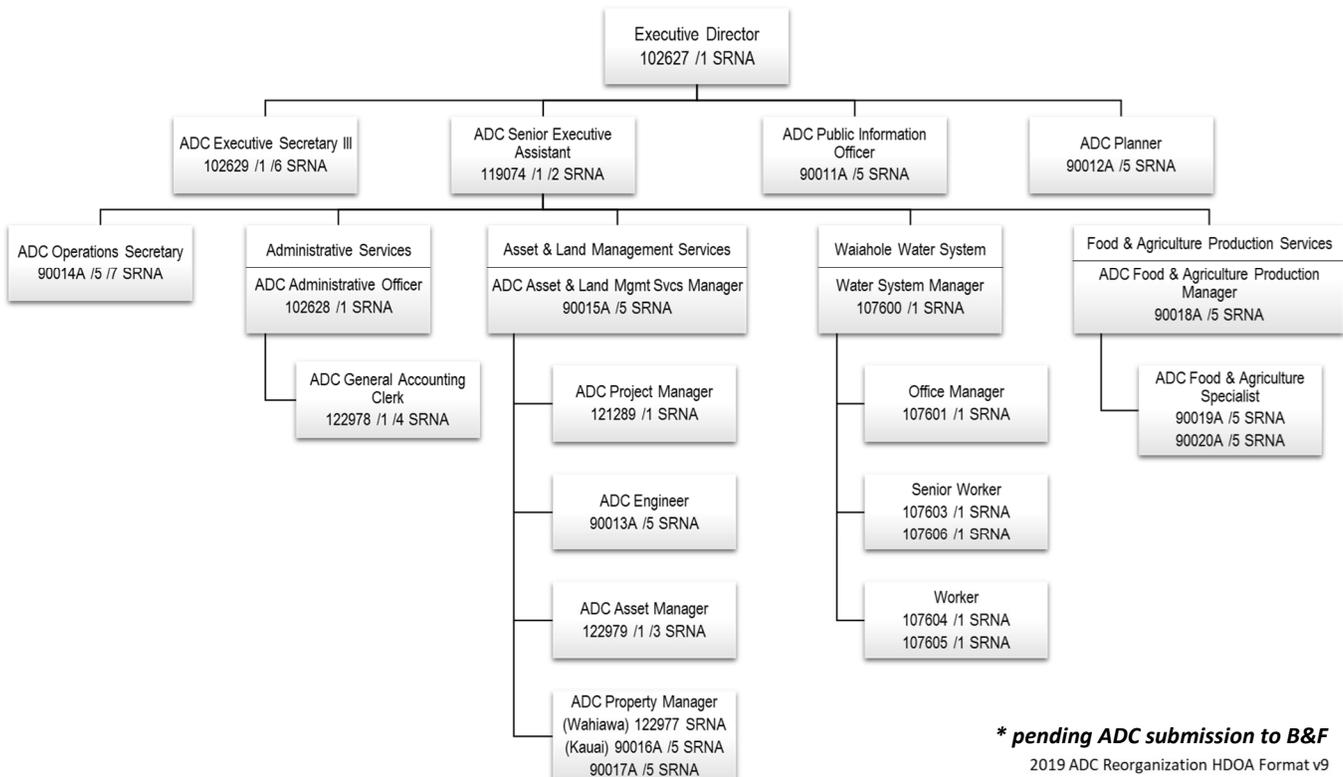
M. Kaleo Manuel  
Deputy Director, Commission on Water Resource Management, DLNR  
Ex-Officio, Department of Land & Natural Resources  
Designated Representative

## ADC Staff

The ADC Executive Director is James Nakatani.

Currently, a staff of 12 employees support agribusiness development and maintain the Waiahole Water System. Given the realities of the State’s COVID-related hiring restrictions, ADC anticipates challenges in filling open positions and replacing retiring personnel over the next four years.

1. Twelve (12) temporary positions, NTE 6/30/2021.
2. Position reclassified from Project Coordinator to Senior Executive Assistant.
3. Asset Manager position authorized effective 7/01/2016 (Act 24, SLH 2016). Subject to classification and organizational review. Placement subject to non-delegated reorganization.
4. General Accounting Clerk position authorized effective 7/01/2018 (Act 53, SLH 2018). Subject to classification and organizational review. Placement subject to non-delegated reorganization.
5. Ten (10) permanent positions authorized effective 7/01/2019 (Act 28, SLH 2019). Subject to classification and organizational review. Placement subject to non-delegated reorganization. It is further anticipated that all permanent positions will be established as temporary positions in accordance with HRS Chapter 76.
6. Position title changed.
7. Operations Secretary position. Attempts to establish and fill in 2019 were returned without action by B&F for lack of sufficient office space and funds, and because of existing vacancies at the time.



**FY2020 Financial Statement  
Agriculture Development Revolving Fund**

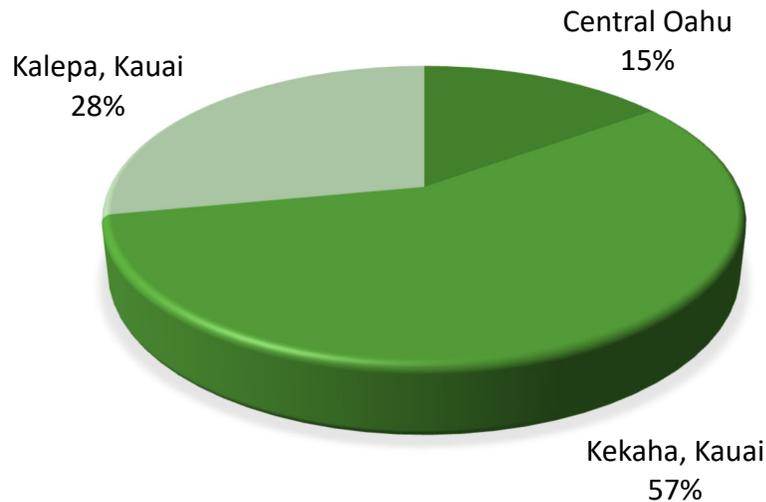
	<b>Budget</b>	<b>Actual</b>
<b>Revenue</b>		
Investment Pool	\$ 11,795	\$ 50,250
Legislative Appropriation	\$ 50,600	0
Administrative Fees WWS	\$ 120,216	0
Kekaha / Kalepa Rent	\$ 354,000	\$ 620,353
Revocable Permits & Other Land Rent	\$ 55,000	\$ 195,845
Building Rent	\$ 240,000	\$ 214,894
Galbraith Water	\$ 40,000	0
Navy PMRF Contact	\$ 827,226	\$ 594,773
Miscellaneous	0	\$ 25,416
<b>Total</b>	<b>\$ 1,698,837</b>	<b>\$ 1,701,531</b>
<b>Expenditure</b>		
Payroll & Benefits	\$ 840,215	\$ 719,652
General Administration & Office Expenses	\$ 210,000	\$ 258,990
Equipment	\$ 15,000	\$ 9,517
Kekaha	\$ 100,000	\$ 173,832
Galbraith	\$ 150,000	\$ 200,687
Zero Waste Project	\$ 25,000	\$ 424
Kalepa	\$ 10,000	\$ 4,460
Navy PMRF	\$ 480,050	\$ 257,373
Whitmore	\$ 75,000	\$ 49,346
Tamura Warehouse	\$ 20,000	\$ 15,555
Kalaelo	\$ 3,500	0
Dole 73	\$ 3,000	0
Paalaa Uka	\$ 3,000	\$ 3,451
<b>Total</b>	<b>\$ 1,934,765</b>	<b>\$ 1,693,287</b>
<b>Revenue Less Expenditure</b>	<b>\$ (235,928)</b>	<b>\$ 8,244</b>

**FY2020 Financial Statement  
Waiahole Water System Revolving Fund**

	<b>Budget</b>	<b>Actual</b>
<b>Revenue</b>		
Water Delivery	\$ 890,000	\$ 696,380
Investment Earnings	\$ 20,000	\$ 62,959
<b>Total</b>	<b>\$ 910,000</b>	<b>\$ 759,339</b>
<b>Expenditure</b>		
Payroll & Benefits	\$ 510,600	\$ 506,499
General Administration	\$ 190,000	\$ 109,315
Equipment / Vehicles (new)	\$ 50,000	\$ 2,909
Materials & Supplies	\$ 45,000	\$ 52,407
Repairs & Maintenance	\$ 25,000	\$ 24,362
Emergency	\$ 50,000	0
G.O. Bond Repayment	\$ 422,000	\$ 422,045
<b>Total</b>	<b>\$ 1,292,600</b>	<b>\$ 1,117,537</b>
 <b>Revenue Less Expenditure</b>	 <b>\$ (382,600)</b>	 <b>\$ (358,198)</b>

## Land Banking Overview

This graph illustrates the breakdown of land managed by the ADC.



### Central Oahu Lands

In 2012, the Trust for Public Land purchased 1,732 acres of land from the Galbraith Estate, near Wahiawa, and transferred the land to two Hawaii public agencies. ADC received 1,200 acres and the Office of Hawaiian Affairs (OHA) received the 500 acres surrounding Kukaniloko, the royal birthing site. The properties can only be used for agriculture.

### Kalepa, Kauai Lands

In 2005, ADC gained control of 6,000 acres of former Lihue Plantation land, now referred to as Kalepa. Included in the transfer was the East Kauai Irrigation System.

### Kekaha, Kauai Lands

In 2002, with the closing of all Amfac/JMB sugar operations, ADC gained control of 12,000 acres of land in the Mana plains area of Kekaha, followed in 2009 with the transfer of the Kokee Ditch System, the Kekaha Ditch System, two pump stations, two hydro-electric power plants, and an irrigation/drainage ditch system.

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## Development and Maintenance of Physical Agriculture Infrastructure Overview

FY 2020 saw the construction and completion of two reservoirs (3 MG & 10 MG) on Galbraith Estate lands near Wahiawa. These two reservoirs will provide water to ADC tenants on these lands.

### Property Management Activities

Much of ADC's efforts focus on property management – the processes and labor required to manage the life cycle of all acquired property including acquisition, control, accountability, responsibility, restoration, maintenance, utilization, and disposition. Property management encompasses both individual properties and the infrastructure that ties the region together. Adding to this complexity is the requirement that ADC farmers submit an approved conservation plan and meet current food safety and good agriculture practices criteria. January 2020 saw the successful onboarding of ADC's new Property Manager who will have primary responsibilities for these concerns.

# Oahu Lands Highlights

## FY2020 Accomplishments

### Galbraith Area

1. Farmer selection continued with the last of the available small farmer parcels awarded to a number of applicants.
2. In conjunction with the Honolulu Police Department (HPD) and the State of Hawaii, Department of Public Safety, conducted a sweep of a 236-acre parcel resulting in eleven trespass warnings, three arrests, and the removal of 150 vehicles.
3. Began construction of two new reservoirs estimated to be completed in Fall, 2020, with a holding capacity of 13 million gallons.
4. Staff continue to push tenants to embrace GAP certification as FSMA rules come into force.



## Whitmore Area

1. Established ADC satellite office in Whitmore to facilitate timely responses to community concerns and to work more closely with local tenants.
2. Staff worked with HPD and local human service groups to address illegal trespassing and encampments on ADC lands in Whitmore.
3. Contracted local security service to provide roving patrols to monitor sensitive areas in Whitmore.
4. Removed abandoned vehicles in the area via contracted towing company.



# Kauai Lands Highlights

## FY2020 Accomplishments

### Kalepa Area

1. Weed control operations were conducted three times, including repair of potholes, for the more than six-mile Common Element Road.
2. Fallen trees were cleared following major storm and flooding which blocked Christian Crossing bridge.
3. CIP funds were appropriated for repair of Christian Crossing bridge, which provides the only alternate emergency route to the North Shore in the event the Mayor Bryan Baptiste Memorial Bridge becomes impassable.



## Kekaha Area

ADC settled the 2016 Clean Water Act lawsuit filed by EarthJustice. Under the terms of the settlement, ADC is currently implementing extensive water quality testing to identify the sources and levels of pollutants in the drainage canals and irrigation ditches in the area, and continues to utilize best management practices to reduce storm water runoff. ADC also submitted an application for a National Pollutant Discharge Elimination System permit and is awaiting approval of the permit from the State Department of Health.



1. Completed installation of security system with new high power PTZ camera on Waiaka Ridge and improved Internet connections.
2. Restored water to mauka fields after June fire.
3. Reached agreement with all Waimea Watershed Agreement stakeholders regarding acceptable testing method to ensure that the Waiahulu and Koaie stream IIFSs are met at all times by reconfiguring existing infrastructure.
4. Installed meters to measure Kokee Ditch flows.
5. Installed remote controlled gate at Mauka Hydro to control Kekaha Ditch flows to meet IIFS's.
6. Installed real-time monitoring of Hukipo gauge to help meet IIFSs.
7. Completed engineering for pressurized system from Reservoir 130 to Reservoir 117. Project on hold pending COVID-related funding issues.
8. IAL application initiated.
9. Waimea Valley Crossings repaired using in-house personnel.



## Waiahole Water System

The Waiahole Water System (“WWS”) provides a constant and stable source of irrigation water to approximately 5,866 acres of land in central and leeward Oahu. The system produces 22 to 29 million gallons per day (mgd). On average, about 5 to 7 mgd is diverted for use to system customers. The remaining water is discharged into various windward streams including Kahana, Waikane, Waianu and Waiahole streams.



The WWS is a key component in ADC’s Central Oahu Water Security Plan, which seeks to improve the efficiency of the WWS. Improvements will not only ensure the production of crops but will also address some of the goals of the Hawaii Fresh Water Initiative in their 2016-2018 Blueprint for Action, Water Security for an Uncertain Future.

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## Grant-In-Aid Projects

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### Waimea Nui Community Development Corporation

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Administered an HRS 42F grant-in-aid for \$800,000, pursuant to Act 49, SLH 2017 to develop water infrastructure for the Waimea Nui Community Agricultural Park, District of Kohala. The project continues to be administered.

## Challenges Ahead

The economic realities of COVID-19 have dramatically affected the State budget; ADC was not spared. Current budget models anticipate reduced appropriations for the next four years. Anticipated staff furloughs and a state-wide hiring freeze will make it difficult to retain current staff, fill anticipated positions due to retirement, and hire new staff, all while ADC's land and asset portfolio is expanding. Land and asset acquisitions currently in process face an uncertain future due to new budget restrictions. Further, planning, development, build-out and improvements of such initiatives as the Whitmore Food Hub risk being indefinitely deferred due to lack of funding opportunities.

Lastly, the ADC's properties on Kauai have endured a number of extreme flooding events over the past two years; the realities of climate change suggest that these events may become more frequent and more severe in the future.

## Appendix I

### Land Purchase Summary

FY2020

#### ADC Land Purchase Breakdown

<b>Seller</b>	<b>TMK</b>	<b>Acreage</b>	<b>Closing</b>
Trustee of the George Galbraith Estate	Various	1,250	2012
Castle & Cooke, Inc.	1-7-1-002-009	24	2013
Tamura Enterprises, Inc.	1-7-4-012-016	2	2014
Dole Food Company, Inc.	1-7-1-002-004 1-7-1-002-023	257	2015
W.H. Shipman, Ltd.	3-6-151-002	2	2015
Dole Food Company, Inc.	1-6-5-002-001	73	2016
Dole Food Company, Inc.	1-7-1-002-006 1-7-1-002-034	197	2016
Castle & Cooke, Inc.	1-7-1-002-032	205	2016
Dole Food Company, Inc.	1-6-4-003-016 1-6-5-001-046	386	2017
Castle & Cooke, Inc.	1-9-5-003-007	92	2017
Dole Food Company, Inc.	1-6-5-002-011	215	2017
Dole Food Company, Inc.	1-6-4-004-008 1-6-4-004-006	234	2017
Dole Food Company, Inc.	1-6-5-005-002	434	2017

## Appendix II

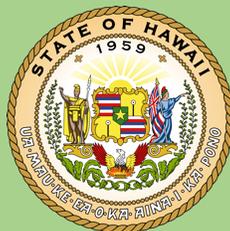
### Leasing Summary

FY2020

	Pasture	Diversified Crops	Other	Non-Tillable	Total Occupied	Total Available	% Occupied
Galbraith		917		28	945	1,250	76%
Kalaeloa			4		4	4	100%
Kalepa	2,702	432	1,415	1,365	5,914	6,200	95%
Kekaha	1	3,267	117	952	4,337	6,000	72%
Mokuleia		18			18	18	100%
Paalaa	16	424			440	450	98%
Waialua 73			35		35	73	48%
Whitmore 24		4			4	24	17%
Whitmore 257		18	30		48	257	19%
<b>Total (acres)</b>	<b>2,719</b>	<b>5,080</b>	<b>1,601</b>	<b>2,345</b>	<b>11,745</b>	<b>14,276</b>	<b>82%</b>

DECEMBER 2020

# HAWAII AGRIBUSINESS PLAN 2021



Agribusiness Development Corporation

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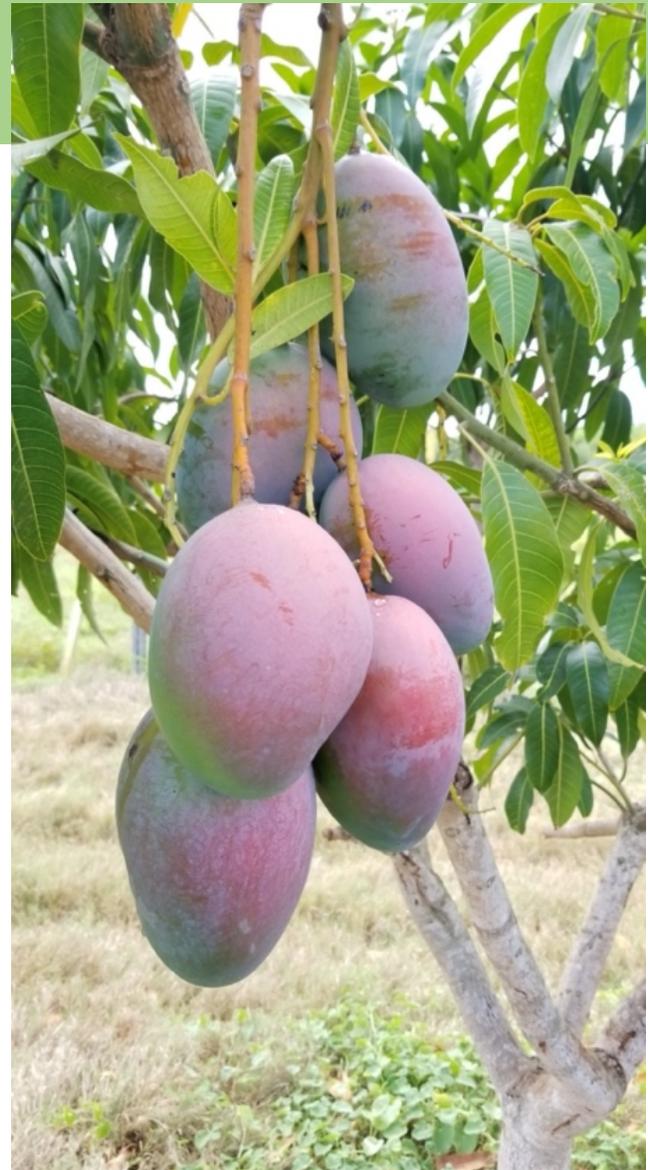
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<b>5</b>	ADC Framework for Increased Agricultural Productivity
<b>6</b>	Land Acquisition & Development
<b>8</b>	Irrigation System Development & Maintenance
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# INTRODUCTION

Before developing the Hawaii Agribusiness Plan, the Agribusiness Development Corporation (ADC) resolved to understand the numerous reports and plans prompted by the legislature and other agricultural interests; to identify the organizational, procedural, and substantive hurdles preventing the ADC from operating as effectively as anticipated; and to assimilate these reports and plans into a coherent and comprehensive plan to expand agriculture in Hawaii.

The earliest of these efforts was the 1997 Legislative Reference Bureau (“LRB” or “Bureau”) Report No. 2 [“Plan(ing) Is Not A Four-Letter Word: A Formative Evaluation of the Agribusiness Development Corporation”]. That year, the Bureau made seven recommendations, including recommendations that ADC be given more time and sufficient staffing to meet its mandates; that deadlines be imposed for the development of a strategic plan; and that the ADC mission be clarified. None of the seven recommendations were followed or acted upon.

In 2007, the LRB conducted a follow-up study (“Agribusiness Development Corporation: Revisited”), in response to Act 267, Session Laws of Hawaii 2006. The 2007 Report noted that the ADC had yet to prepare a Hawaii agribusiness plan and, as set forth in Act 267, solicited input from governmental agencies and stakeholders in the agricultural industry to identify the necessary elements of a Hawaii agribusiness plan. The Bureau identified and sent out fifty-four letters to governmental agencies and industry stakeholders asking for their input to this legislative request. The bulk of the report was a compilation and discussion of the responses that the Bureau received in response to its inquiry.



The 2007 Report found that the predominant sentiment of the stakeholders were:

- Further studies would be redundant; ADC should focus its resources on implementing existing studies
- Key elements of an agribusiness plan are already set forth in section 163D-5(a), HRS
- ADC’s role in the growth of agriculture should be redefined to avoid overlapping with the roles of other agencies and organizations

The 2007 Report pointedly stated that the Legislature should decide whether the ADC should be an all-expansive agency or whether it should be more focused on what it was then doing at the time in 2007. In 2013, the Legislature began allocating tens of millions of dollars to the ADC towards acquiring agricultural lands from private landowners such as the Galbraith Agricultural Lands, and other vacant plantation lands to transition these lands into smaller diversified farms. Since then, ADC shifted its focus to developing, remediating, improving and making these lands available to the agricultural community, the foundations that are fundamental to successfully expand diversified agriculture before it casts its wide net over other areas of agribusiness. Those foundations and therefore ADC’s goals are 1) Land

Acquisition and Development, 2) Irrigation System Development and Maintenance, and 3) Improving Components of the Food System.

<b>Land Acquisition &amp; Development</b>	<b>Irrigation System Development &amp; Maintenance</b>	<b>Improve Components of the Food System</b>
PURCHASE/ EXECUTIVE ORDER/ LAND EXCHANGE  INFRASTRUCTURE DEVELOPMENT/ MAINTENANCE	RESERVOIR DEVELOPMENT  SYSTEM DEVELOPMENT/ MAINTENANCE	GROWING HARVESTING PROCESSING PACKAGING DISTRIBUTING CONSUMING RECYCLING MARKETING

**ADC Framework for Increased Agricultural Productivity Land Acquisition & Development:**

The ADC manages 22,000 acres on the island of Kauai and Oahu. Of the 22,000 acres it manages, 13,900 acres have commercial value and are considered ideal lands for agriculture production. The remainder is comprised of gulches, ravines, ditches, and roadways. To date, the ADC issued license agreements and permits to agriculture operations for long-term use of 8,000+ acres, which represents over 60% of its total land inventory. Keeping large tracts of former plantation lands in agriculture and providing long-term licenses and leases to agricultural operations are the key elements to building the agriculture sector of the future.

**Goal:** Acquire and develop productive agricultural lands for agricultural development

**Objective(s):**

1. To maximize utilization (100% occupancy) of ADC agricultural land resources for diversified agribusiness.
2. To implement the State’s goal to double local food production and consumption.
3. To reduce food imports.
4. To acquire and make agriculture lands available for production.
5. Educate the public on the importance of local agriculture and farming to our state economy and food supply during this COVID-19 pandemic.

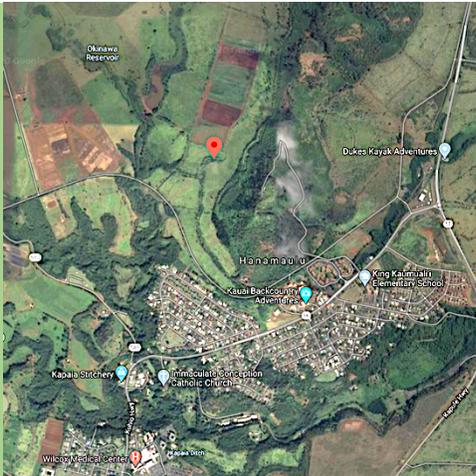


# LAND ACQUISITION & DEVELOPMENT

## ACTION ITEMS

### OAHU

- Acquire additional acres into ADC land inventory (5 to 7 years). Selected parcels will be purchased to protect agriculture status and availability.
- Convert an additional 1,000 acres of vacant land to productive diversified agriculture status (1 to 3 years). Selected parcels will be targeted for land preparation including tree clearing and amending the conditions of the soil.
- Develop and implement a crop rotation framework that includes both livestock and crops (1 to 3 years).
- Develop facilities and infrastructure to accommodate agriculture activities (harvesting, packing, processing and distribution) (5 to 7 years).



### KALEPA, KAUAI

- Convert 500 acres to productive diversified agriculture status (1 to 3 years). Selected parcels will be targeted for land preparation including tree clearing and amending the conditions of the soil.
- Implement a crop rotation program (1 to 3 years). Develop a crop rotation framework that includes both livestock and field crops.



### KEKAHA, KAUAI

Convert 1,000 acres to productive diversified agriculture status (1 to 3 years). Selected parcels will be targeted for land preparation including tree clearing and amending the conditions of the soil.

**Irrigation System Development & Maintenance:** In addition to agricultural lands on Kauai and Oahu, the ADC also manages the Waiahole Water System. The ADC continues to work with its farmers to improve and maintain critical infrastructure necessary to support agricultural operations. In addition to ongoing maintenance of existing infrastructure, the ADC is also developing new infrastructure and improving water storage capacity by constructing reservoirs and storage ponds to ensure farmers have a consistent and affordable supply of irrigation water.

**Goal:** Assure the continued availability of adequate, reasonably priced water to lands to accommodate present and future agricultural activities.

**Objective(s):**

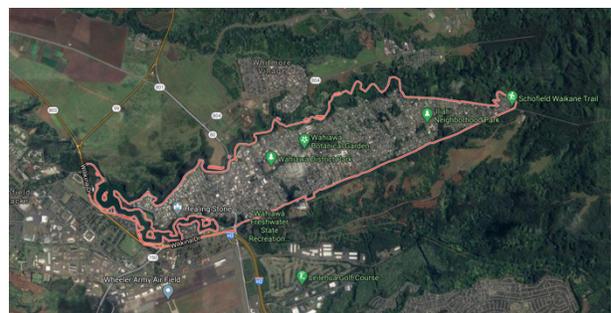
- To develop a master irrigation plan which incorporates system development, watershed management and water recycling.
- To maintain and improve the efficiency of existing irrigations systems.
- To expand agricultural water resources.



**CENTRAL OAHU**

Implement the Central Oahu Watershed Management Plan (5 to 7 years).

Rehabilitate the existing Waiahole Water System which includes constructing a reservoir, back-up well development, enclosing high-risk sections, and improving data gathering (1 to 5 years).



**WAHIAWA, OAHU**

Incorporate R-1 water from the Wahiawa Wastewater Treatment Plant into the agriculture system (5 to 10 years).

Expand system capacity by acquiring and incorporating 3 existing wells (1 to 3 years).

Develop additional reservoirs to accumulate surface water and incorporate into the agriculture system (2 to 5 years).

# IRRIGATION SYSTEM DEVELOPMENT & MAINTENANCE

## ACTION ITEMS



### **KALEPA, KAUAI**

- Work with the Department of Land and Natural Resources to rehabilitate the Hanamaulu ditch portion of the existing irrigation system (2 to 5 years).
- Improve the Christian Crossing Bridge which provides access for standard trucks and heavy equipment (1 to 3 years).

### **KEKAHA, KAUAI**

- Pressurize the existing irrigation system (1 to 5 years).
- Rehabilitate the existing irrigation system including repair of the hydro-electric plant (2 to 5 years).
- Work with the Kekaha Agriculture Association to improve the Kekaha Bridge which provides access for standard trucks and heavy equipment (1 to 3 years).

**Improve Components of the Food System:** A food system includes all processes and infrastructure involved in feeding a population: growing, harvesting, processing, packaging, transporting, marketing, consumption, and disposal of food and food-related items. It also includes the inputs needed and outputs generated at each of these steps. A food system operates within and is influenced by social, political, economic and environmental contexts. It also requires human resources that provide labor, research and education.

**Goal:** To improve the productivity of agriculture operations by providing brick and mortar facilities, as needed, and to promote efficient profitability by enticing the development of applied research and innovation on State lands and in State facilities.

**Objective:** Identify and deploy viable new techniques and tools to improve crop and livestock yield and marketability.

## ACTION ITEMS

### **Research & Development:**

- Greenhouse development to lower costs and implement new technology
- Plant breeding to develop new varietal and cultivar annually
- Improve the handling and processing of papaya
- Increase the 'ulu industry to productive scale

### **Marketing:**

- Increase exposure of emerging crops that include, but are not limited to, tilapia and 'ulu for local, as well as export markets such as papaya.
- Provide available space to producers who can afford to construct their own food hub facility.

### **Kekaha, Kauai:**

- Develop a central food hub to accommodate processing, packing, storage and distribution
- Develop a workforce housing solution with private partner

**HRS 163D-5(a) Requirements:** Over the past 25 years, all of the plantations have closed and many of the 9 items listed in 163D are obsolete or duplicate the function of the Hawaii Department of Agriculture. ADC will refocus its efforts on current and relevant priorities.

[1994] HRS 163D-5(a) The corporation shall prepare the Hawaii agribusiness plan which shall define and establish goals, objectives, policies, and priority guidelines for its agribusiness development strategy. The plan shall include but not be limited to the below.

<b>1994 REPORT REQUIREMENT</b>	<b>2020 ADC COMMENTS</b>
An inventory of agricultural lands with suitable adequate water resources that are or will become available due to the downsizing of the sugar and pineapple industries that can be used to meet present and future agricultural production needs.	Information provided by HDOA "Statewide Agricultural Land Use Baseline 2015" report.
An inventory of agricultural infrastructure that will be abandoned by sugar and pineapple industries such as irrigation systems, drainage systems, processing facilities, and other accessory facilities.	Useful inventory has been accounted for over the past 25 years.
An analysis of imported agricultural products and the potential for increasing local production to replace imported products in a manner that complements existing local producers and increases Hawaii's agricultural self-sufficiency.	Support provided by HDOA Agricultural Development Division.
Alternatives in the establishment of sound financial programs to promote the development of diversified agriculture.	Support provided by HDOA Agricultural Loan Division, DBEDT and the private sector.
Feasible strategies for the promotion, marketing, and distribution of Hawaii agricultural products in local, national, and international markets.	Support provided by HDOA Agricultural Development Division. ADC will focus on production development.

1994 REPORT REQUIREMENT	2020 ADC COMMENTS
<p>Programs to promote and facilitate the absorbing of displaced agricultural workers into alternative agricultural enterprises.</p>	<p>Current issue is the lack of farm labor.</p>
<p>Strategies to insure the provision of adequate air and surface transportation services and supporting facilities to support the agricultural industry in meeting local, national, and international market needs.</p>	<p>Information provided in “The Demand for Interisland Shipping and the Impact of Shipping Costs on Hawaii Agricultural Production 2008” report.</p>
<p>Proposals to improve the gathering of data and the timely presentation of information on market demands and trends that can be used to plan future harvests and production.</p>	<p>Support provided by HDOA Agricultural Development Division.</p>
<p>Strategies for federal and state legislative actions that will promote the development and enhancement of Hawaii's agricultural industries.</p>	<p>Collaborate with Federal, State, County and Stakeholder organizations to support agriculture initiatives.</p>



# APPENDIX 1

## PAST AGRICULTURE STRATEGIC PLANS

### **LRB Report: No Further Study Needed; Implementation Needed:**

Perhaps the most emphatic comment in this regard came from Ms. Stephanie Whalen, President and Director of HARC:

With respect to the preparation of a Hawaii agribusiness plan I would like to bring to your attention if you haven't already discovered it that there have been at least 8 such plans without implementation since 1966. These were either called State Agricultural Plans or State Agricultural Functional Plans or similar titles. None of these plans have been implemented nor is there much difference among them. The issues have been recognized for decades; solutions have been suggested; little implementation has occurred.

Ms. Whalen goes on to note, as do other respondents, that "The Hawaii Farm Bureau Federation, an organization representing the farming community, has the most recently developed A Strategic Plan for Hawaii's Agriculture.... As all the state plans before it, it identifies what needs to be done. What is needed is for all the support organizations to work with this 'plan' and develop and support action items within their expertise for implementation." Further in her response she states: "If the goal of this is to support agricultural (sic), then another plan is not needed. What is needed is a recognition that the necessary elements have been identified over and over again in the past 4 decades in at least 9 plans already."

In a similar note, Ms. Teena Rasmussen, Chairperson of ADC states: "The Hawaii Farm Bureau Federation completed a very comprehensive plan titled 'Strategic Plan for Hawaii's Agriculture.'...We urge the LRB to look at these plans and studies in detail and avoid a duplication of effort." Also, the Maui County Farm Bureau stated: "The Hawaii Farm Bureau Federation has prepared and regularly updates a Strategic Vision and Implementation Actions for Agriculture in Hawaii. ...We strongly recommend that this Vision and Plan be used as the basis a (sic) Hawaii Agribusiness Plan. Duplication of effort is counterproductive. Rather, time would be better spent further developing the implementation actions."

Similarly, HFBF notes: "ADC should expound on the existing general agricultural plans and move into the implementation state with annual review of performance and measurement standards." Further in its response, HFBF states: "The Bureau should use existing agricultural plans such as the Farm Bureaus' (sic) strategic plan and the DOA's general agricultural plan. This will reduce duplication of resources and efforts to start a

whole new plan. At this point, we should be updating or implementing sections within these plans." Finally, HC&S (?) states: "Preparing a new Plan may not be needed ... rather implementation of an existing plan."

Due to the prominence with which the HFBF's plan is mentioned in many responses, a quick review of that plan is warranted. The plan opens with an introduction and vision followed by a stated purpose.

The purpose of this plan is to evaluate the production, financial, marketing, and distribution problems and opportunities facing Hawaii's agriculture. The plan provides a roadmap to formulate a strategy to address issues hindering Hawaii's agriculture and to fully realize its potential. By identifying each issue, attention can be focused on reaching new or different solutions. This third version begins to identify some of the actions that have taken place and sets into the implementation phase of the Plan.

Private sector motivation must be the driver to move these goals and objectives forward. Agriculture should not rely on government or others to determine its future. Government's role must be limited to providing the political, regulatory, and infrastructural support needed to enhance agriculture.

### **Previous Agriculture Plans Summary | Section 1 (identified by Paul Schwind 2000)**

#### *Hawaii State Plan*

Next to the Constitution in importance, the State Plan (first enacted in 1978) contains legislatively adopted agricultural and agriculture-related objectives, policies and priority guidelines. The three primary objectives of the State Plan for agriculture are (1) viability of Hawaii's sugar and pineapple industries, (2) growth and development of diversified agriculture throughout the State, and (3) an agriculture industry that continues to constitute a dynamic and essential component of Hawaii's strategic economic and social well-being. These broad objectives are fleshed out by policies (long-range courses of action to be carried out to achieve the objectives), and priority guidelines (focus for public and private actions to address major statewide problems requiring more immediate attention). The State Plan Policy Council, which had been the core of the statewide planning coordination and implementation system for the State Plan, was abolished by the Legislature in 1991.

The State Plan distinguishes policies and priority guidelines in the sense that a guideline “may be deviated from without penalty or sanction.” implying that there might be some legal penalty or sanction for deviating from a policy. But priority guidelines are further defined as those which “shall take precedence when addressing areas of statewide concern.” The State Plan policies and priority guidelines for agriculture are stated in full in Appendix A and are cited as appropriate in the following sections.

#### *Hawaii State Constitution*

The most fundamental direction for agricultural planning is contained in the State Constitution, as amended by the Constitutional Convention of 1978:

The State shall conserve and protect agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency and assure the availability of agriculturally suitable lands. The legislature shall provide standards and criteria to accomplish the foregoing.

Lands identified by the State as important agricultural lands needed to fulfill the purposes above shall not be reclassified by the State or rezoned by its political subdivisions without meeting the standards and criteria established by the legislature and approved by a two-thirds vote of the body responsible for the reclassification or rezoning action.

Notwithstanding the explicit direction adopted by the electorate more than twenty years ago. The Legislature has to date failed to enact the standards and criteria for conservation and protection of important agricultural lands. (The identification and inventory of such lands is discussed below.)

#### *DOA State Agriculture Functional Plan*

This is the only plan specifically for agriculture to have achieved a measure of official acceptance. As such, the Functional Plan (prepared by the Department of Agriculture (DOA) with advice from an Advisory Committee appointed by the Governor) identifies priority issues in agriculture and contains objectives, policies. Also identified is implementing actions including legislative proposals: initiatives for organization, management programs, and services; and development of facilities or physical infrastructure.

As originally conceived, the Functional Plans were intended to be adopted by concurrent resolution of the Legislature upon the findings and recommendations of the State Plan Policy Council, and the Plan for agriculture was adopted in this manner in 1985. Subsequently, Functional Plans were to be submitted to the Legislature by the Governor for information only, along with the Policy Council's findings and recommendations; it is in this form that the last Agriculture Functional Plan was completed and approved by Governor John Waihee on May 22, 1991. After the abolition of the Policy Council, Functional Plans were to be prepared in accordance with guidelines developed by the Department of Budget and Finance; but inasmuch as such guidelines were not forthcoming, preparation of Functional Plans effectively ceased after 1991.

Implementation of the State Agriculture Functional Plan has also met evolving purposes over the years as the Hawaii State Plan underwent amendments. Initially, Functional Plans were not to be used as statements or interpretations of State policy without legislative approval. Later, the Plans were to be used as guidelines to implement State policies adopted by the Legislature. Most recently, Functional Plans are to be used "to guide the allocation of resources" for the implementation of legislatively adopted policies. The issue areas and a selection of the objectives, policies, and actions for which the DOA was the lead agency for implementation in its last Functional Plan are stated in Appendix B, and are cited as appropriate in the following sections.

#### *OSP Transformation of Hawaii's Agriculture*

The former Office of State Planning (OSP) produced a document in 1994 which proposed a comprehensive, coordinated mechanism to guide the transformation from the dominance of the sugar and pineapple industries to market-driven, fully diversified agribusiness. The OSP document proposed that the former Governor's Agriculture Coordinating Committee (GACC) be the lead agency ("the voice of the Governor") for implementation of a "transformed agriculture" through the mechanism of commodity industry "Action Groups." These Action Groups would consist of partnerships of public and private interests ("statespersons and stakeholders") empowered by their linkages to achieve specific goals and objectives.

The former OSP saw itself as the logical focus for a leadership role in a "Transformation Action Group" involved with the advocacy of agriculture in the context of broad, "transcommodity" issues. However, OSP also foresaw an important role for the ADC as a semi-government corporation to facilitate the transformation of agricultural infrastructure from plantation operations into other agricultural enterprises by means of projects self-funded by their own beneficiaries. The general bottleneck areas identified in agriculture by OSP, and examples of the kinds of actions envisioned for ADC, are

summarized in Appendix C; these and additional materials from the "Transformation" document are also referred to as appropriate in the following sections.

#### *DOA New Opportunities for Agriculture in Hawaii*

Independently of the OSP's "Transformation" document as well as the strictures of the Functional Plan process, the Department of Agriculture (DOA) prepared its own assessment of the need for an empowered "champion" or advocate and leader for agriculture in Hawaii. In the "Blueprint Plan," the DOA envisioned a future in which prime agricultural lands were fully utilized by a diversified, intensive, and technologically sophisticated agricultural industry developed in a dynamic public/private partnership. The "Blueprint" was approved by the Board of Agriculture [for the purpose of review and comment] in December, 1994, and presented to a conference at the College of Tropical Agriculture and Human Resources (CTAHR) at the University of Hawaii in April 1995.

Not surprisingly, the "Blueprint" foresaw DOA as the "torch bearer" and catalyst for planning with implementation supported primarily by the agricultural development plans, projects, and facility programs of the ADC and the agricultural research, development and extension activities of the Hawaii Agriculture Research Center (HARC) [former Hawaiian Sugar Planters' Association]. However, in a departmental restructuring which accompanied a more than twenty percent reduction in workforce, the DOA's Planning and Development Office was eliminated in September 1996 and its functions were placed within the Chairperson's office with reduced staffing.



### *DOA Hawaii's Agriculture: 2000 and Beyond*

The DOA established a more commodity specific vision in 1996 with short-term "benchmark" goals by crop and livestock categories. The vision foresees Hawaii as an agricultural center for production, marketing, and technology transfer -- a "Holland of the Pacific" for potted plants and cut flowers -- and looks to agriculture as a growth opportunity in which Hawaii can be competitive and reduce its dependency on tourism. In its "Agriculture 2000" document, the Department sought a 15 to 30 percent increase in farm production value, or a dollar increase of from \$50 to \$100 million, between 1994 and the year 2000. Examples of means by which these production goals could be achieved include creation of a hog breeding operation; overcoming Japanese quarantine restrictions against potted foliage plants; preservation of irrigation resources (ditch systems) throughout the State; encouraging local production of livestock feed; control of papaya ringspot virus; test marketing of tropical specialty fruits treated by irradiation to prevent fruit fly infestation; development of a center for biological control; support of "eco" or "green" tourism; and use of vacant lands for agroforestry (production of high-value hardwoods).

### *ADC Progress Report Draft Outline*

The ADC reorganized internally during 1997 to become more project focused: this focus is reflected in the Draft Outline of the Hawaii Agribusiness Plan included in the Progress Report incorporated in the ADC Annual Report for that year. The report notes that 103,400 acres and 193 million gallons per day (MGD) of irrigation water have become available since 1990 due to closure of sugar plantations, with only modest gains in acreage planted and infrastructure utilized in other types of crops. The ADC has seen itself as playing a complementary role to DOA in achieving the goal of transforming Hawaii's agricultural industry into one of farmers empowered by an entrepreneurial, market-driven philosophy. In the past, ADC fulfilled this role by assisting dislocated agricultural workers make the transition into their own farming operations. In the future, ADC expects to focus more on projects with the greatest effect on the entire industry, in particular preserving and making available critical land, roadways, and water delivery infrastructure.

The projects prioritized in the Draft Outline of the Hawaii Agribusiness Plan are (1) purchase of the Waiahole Water System, (2) restoration of Lower Hamakua Ditch, (3) profitable agricultural reuse of Waipio Peninsula, (4) feasibility investigation of a Hawaii Freight Consolidation Center along with West Coast Redistribution Centers, and (5) new subdivision standards for Reparcelsation of Agriculturally Zoned Lands. To these five projects, a sixth was added in 1998, (6) a Marketing Inventory of Former Sugarcane Lands and Water Systems, to publicize the availability and suitability of these resources for a variety of new crops.

### *RETA-H Marketing Inventory*

This is the second example of a concept proposal submitted by the ADC for federal funds through the Rural Economic Transition Assistance Hawaii (RETA-H) program. In the first example, the concept proposal for the Waipio Peninsula project was approved, and ADC was invited to submit a full proposal for \$100,000 in matching funds for engineering and feasibility studies of off-site water source development and on-site infrastructure layout and costs on 600 arable acres of former sugarcane land (and 52 acres requiring fill and stabilization), which may be used for seed corn, silage, and soybean production. In the second example, ADC is seeking \$400,000 to inventory 60 to 80 sugarcane water systems and adjacent lands in detail as to their sources of water, ownership, capacity, average flow, condition, personnel, operating costs, and location of agricultural lands served. This information is essential to the State's efforts to attract small diversified family farms with financing to start up and expand operations on lands formerly utilized in sugarcane production.

### *DOA Agricultural Water Use and Development Plan*

As part of the Hawaii Water Plan required under the State Water Code, each County shall prepare a Water Use and Development Plan, and the appropriate agency (Department of Land and Natural Resources (DLNR) shall prepare a State Water Projects Plan. To this was added in 1998 the Agricultural Water Use and Development Plan, to be prepared by DOA and submitted to the Legislature before the Regular Session of 2000. The Agricultural Water Plan is to include a master inventory of irrigation water systems, identifying the extent of rehabilitation needed, subsidy required for the cost of repair and maintenance, and criteria to prioritize the rehabilitation of systems. The Plan shall develop a five-year program to repair the irrigation systems and set up a long-range plan for their management.

### *CTAHR Strategic Plan*

The College of Tropical Agriculture and Human Resources (CTAHR) at the University of Hawaii recently issued an undated five-year Strategic Plan to guide it through the aftermath of a period of severe budget restrictions in which the College experienced a 15 percent increase in student enrollment and a net loss of 49 professional positions. The vision of CTAHR is that it will be "the premier resource for tropical agricultural systems and resource management in the Asia-Pacific region." In its mission, CTAHR is committed to "the preparation of students and all citizens of Hawaii for life in the global community through research and educational programs supporting tropical agricultural systems that foster viable communities, a diversified economy, and a healthy environment." The two centerpieces of the Strategic Plan are (I) a comprehensive

reorganization of CTAHR's staff and resources into six departments from eleven; and (2) rejuvenation of outreach and Extension programs to make the College's new academic programs and its research results more accessible to the citizens of Hawaii. New faculty, staff, and capital improvement funds are needed for all of these efforts.



#### *USDA/HACC Action Plan Statement*

A document prepared by the "USDA/Hawaii Agricultural Coordinating Committee" suggests a joint Federal/State effort at outlining the essential content of a new plan for agriculture in Hawaii. The action statements are organized into eleven categories, consisting of Market Development, Pest Management, Quarantine Treatment, Biotechnology Development, Forestry Development, Reuse of Agricultural Lands, Rural Infrastructure Development, Agricultural Financial Assistance, Conservation and Resource Management, Transportation, and Other Issues. The statements are a response by the Office of the Governor to a request from Senator Daniel K. Inouye that the State of Hawaii develop a Memorandum of Understanding with the U.S. Department of Agriculture. The document is distinguished by reference to a number of Federal agencies which may be role players in the agricultural development process in Hawaii. These agencies include the Foreign Agricultural Service, Agricultural Research Service and Rural Business Cooperative Service of the U.S. Department of Agriculture (USDA).

*Hawaii Agriculture Research Center*

No survey of agribusiness development efforts in Hawaii would be complete without specific reference to the programs of the Hawaii Agriculture Research Center (HARC), which during 1997 completed its transformation from its predecessor organization, the Hawaiian Sugar Planters' Association (HSPA). The historical focus of HARC (HSPA) has been on plant breeding and selection for sugarcane, more recently augmented by related research in diversified crops such as acacia koa and eucalyptus (commercial forest products), coffee, papaya, pineapple, banana, asparagus, and taro. The administrative structure of HARC reflects its blend of old and new emphases, with its Board of Directors consisting of representatives from sugar producing companies, assisted by an Advisory Council of representatives from the Hawaii Farm Bureau Federation, the forestry, coffee, papaya, macadamia nut, seed com, and pineapple industries, and DOA and CTAHR. HARC supports the Farm Bureau's Commodity Advisory Group in helping export + industries solve problems related to land, water, transportation, marketing, and the environment. HARC also works cooperatively with DOA, CTAHR and USDA to share expertise, facilities, and other resources. HARC's budget is symptomatic of its eclectic nature with 60 percent of its funding coming from the private sector, 21 percent from the State, and 19 percent from the Federal Government.

## **Section 2: Recent Agriculture Plans**

The Hawaii 2050 Sustainability Plan was published in 2008 in accordance with Act 8, Special Session Laws of 2005. Act 8, Special Session Laws of 2005 requires the State Auditor, with the assistance of the Office of Planning, to update this plan every ten years; due to a lack of funding for the update of this plan, the Office of Planning, through the State's Sustainability Coordinator, conducted an evaluation of the metrics and indicators established by the 2008 Hawaii 2050 Sustainability Plan. This evaluation and measurement was the first of its kind over the past decade. This report reviews the data collected over the course of this ten-year measurement of Hawaii's progress toward sustainability according to the Hawaii 2050 Sustainability Plan's 5 goals, 9 "2020 benchmarks", 22 strategic actions, and 55 indicators.

### *Hawaii Farm Bureau Federation: A Strategic Plan for Hawaii's Agriculture 2004*

The Hawaii Farm Bureau is a grassroots non-profit organization founded by Hawaii farmers and ranchers and working with organizations, communities and individuals involved in all aspects of the Agricultural Industry in Hawaii. The purpose of the plan is to evaluate the production, financial, marketing, and distribution problems and opportunities facing Hawaii's agriculture. The plan provides a roadmap to formulate a strategy to address issues hindering Hawaii's agriculture and to fully realize its potential. By identifying each issue, attention can be focused on reaching new or different solutions. This third version begins to identify some of the actions that have taken place and sets into the implementation phase of the Plan. Private sector motivation must be

the driver to move these goals and objectives forward. Agriculture should not rely on government or others to determine its future. Government's role must be limited to providing the political, regulatory, and infrastructural support needed to enhance agriculture.

*DBEDT Office of Planning: Increased Food Security and Food Self-Sufficiency Strategy 2012*

The “Increased Food Security and Food Self-Sufficiency Strategy” sets forth objectives, policies and actions to increase the amount of locally grown food consumed by Hawaii’s residents. The economic impact of food import replacement is significant. Replacing just 10% of the food Hawaii currently imports would amount to approximately \$313 million dollars which would remain in the State. The Strategy recommends actions to market “Buy Local/It Matters” and to brand and label local food products. The Strategy emphasizes increasing production by strengthening agricultural infrastructure i.e. agricultural parks, irrigation systems and distribution systems/facilities. It also recommends actions to provide for food safety, pest prevention and control, workforce training, research and extension services, and policy and organizational support. A critical factor towards successful implementation will be building partnerships with the increasing number of organizations involved in food self-sufficiency/ food security.

*Agriculture Strategy Working Group: A Strategic Direction for Agriculture in Hawaii 2017*  
Focused on addressing the following issues: 1) Identify regions to develop economies of scale for the purposes of cost control and price competitiveness; 2) Identify commodities that can replace imports and commodities that will increase exports (i.e., value-added products) based on private distributors; 3) Match commodities with regional pilot project areas to see growth potential; and 4) Create a comprehensive approach to address problems of housing, workforce training, and research.

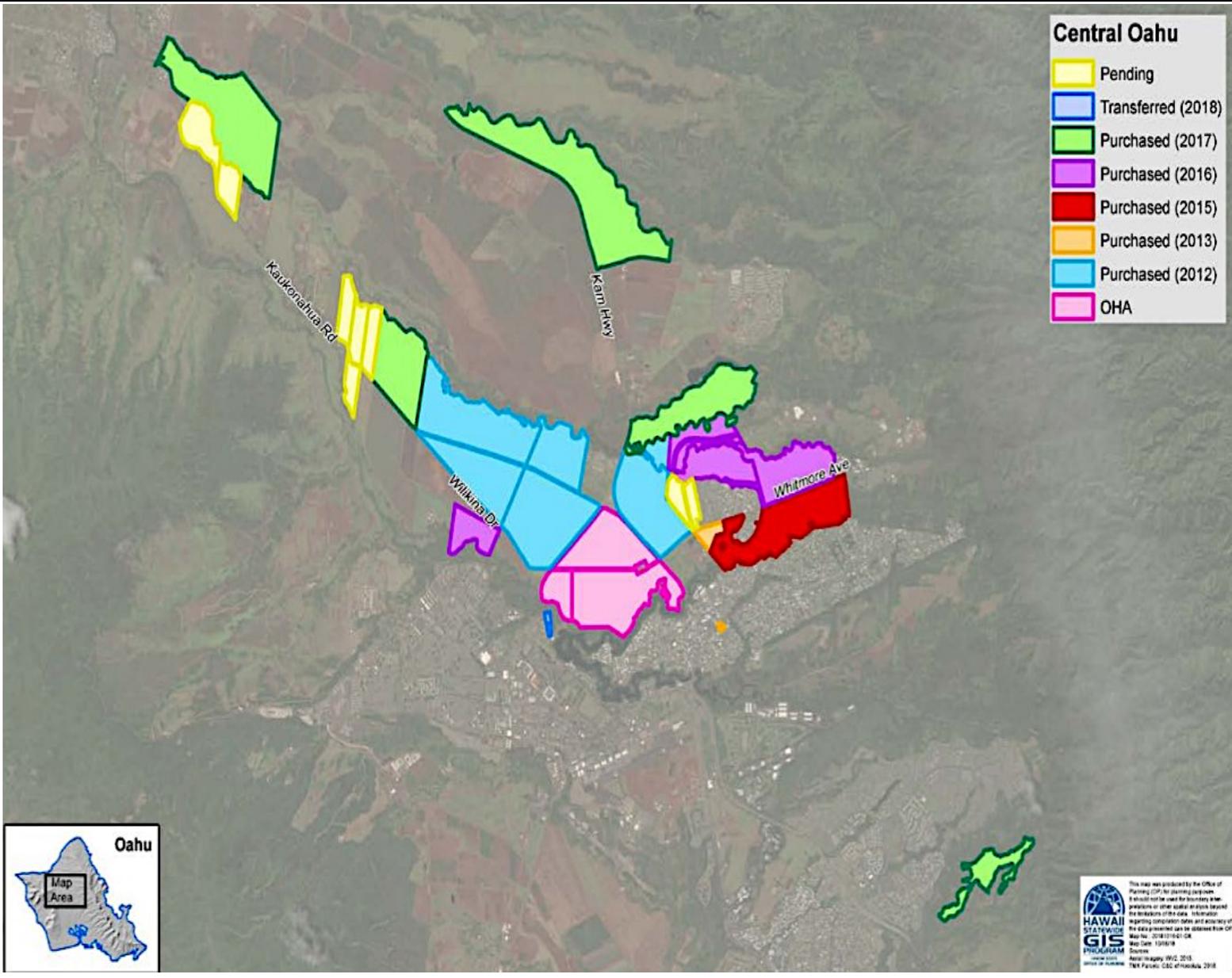
*DBEDT Office of Planning: Hawaii 2050 Sustainability Plan Ten Year Measurement Update (2008-2017) 2018*

The Hawaii 2050 Sustainability Plan was published in 2008 in accordance with Act 8, Special Session Laws of 2005. Act 8, Special Session Laws of 2005 requires the State Auditor, with the assistance of the Office of Planning, to update this plan every ten years; due to a lack of funding for the update of this plan, the Office of Planning, through the State’s Sustainability Coordinator, conducted an evaluation of the metrics and indicators established by the 2008 Hawaii 2050 Sustainability Plan. This evaluation and measurement was the first of its kind over the past decade. This report reviews the data collected over the course of this ten-year measurement of Hawaii’s progress toward sustainability according to the Hawaii 2050 Sustainability Plan’s 5 goals, 9 “2020 benchmarks”, 22 strategic actions, and 55 indicators.

# APPENDIX 2

# MAPS

CENTRAL OAHU



# KALEPA, KAUAI

## MAP OF THE LIHUE PLANTATION LIHUE - KAWAIHAU, KAUAI

SCALE - 1 INCH = 2000 FEET  
APRIL, 1939  
REVISED FEB 1965

- State Diversion
- State Ditch
- Private Ditches

