

Agricultural Development and Resource Conservation
Lihue, HI; Aiea, HI; Wailuku, HI; Hilo, HI; Hoolehua, HI
\$1.4 million

**U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS),
Resource Conservation and Development (RC&D) Program, Hawaii Councils**

The intent of this request is to continue a program to stimulate agricultural development in Hawaii by providing training, management and funding assistance to effectively utilize the resources released by the closure of sugarcane and plantation agriculture. Sustainable development and utilization of natural resources are unique and specific to individual rural communities. The RC&D Councils provide community based leadership to address community specific issues, by ensuring decisions reflect relevant community needs and values. Also, the Hawaii Plant Material Center has developed propagation and establishment methods of native plant species to control erosion and reintroduce such species to critical coastal marine habitat especially on the island of Kahoolawe. This activity is essential for enhancing and sustaining native ecosystems.

Agricultural Development in the American Pacific
Honolulu, HI
\$750,000

University of Hawaii, College of Tropical Agriculture and Human Resources

The Land Grant institutions in the Pacific have joined forces to create solutions that are specific to Hawaii and Alaska, as well as the Pacific Basin. This project addresses agriculture and rural problems in these regions. These regional-efforts are necessary because the results of temperate zone agriculture research or the use of extension and teaching materials developed on the U.S. mainland is often inappropriate for these Pacific areas.

Agricultural Diversification – Tropical Fruits
Honolulu, HI
\$200,000

University of Hawaii, College of Tropical Agriculture and Human Resources

Even with the recent USDA rules permitting the importation of irradiated tropical specialty fruit into the U.S. from Thailand, tropical specialty fruit is an emerging sector for Hawaii diversified agriculture. It is imperative that high quality, Hawaii-branded fruits be available in the market place to maintain Hawaii's market share. The competitiveness of the U.S. tropical fruit industry depends on sound science-based information that currently does not exist in the continental United States. As such, federal support is necessary to support tropical fruit research in Hawaii.

Agricultural Postharvest, Value-added Products and Processing Program

Hilo, HI and Honolulu, HI

\$1.057 million

Pacific Basin Agricultural Research Center (PBARC)

This project is a cooperative agreement involving USDA ARS (PBARC) and agricultural scientists from the University of Hawaii at Manoa and the University of Hawaii at Hilo that seeks to develop new products for Hawaii growers, gain a better understanding of Hawaii's markets, and establish priorities based upon stakeholder input on the needs of Hawaii farmers and ranchers. A unique characteristic of tropical agricultural systems is year-round production that is offset by year-round hosts for pests. As such, pest and disease management is a prominent problem. These efforts are not being duplicated anywhere in the United States and will provide farmers and other members of the community with new post harvest methods and technology training to increase product value, demonstrate value-added possibilities for by-product usage, reduce post harvest or market losses, improve product marketability, and decrease processing, handling, storage, shipping, or market costs.

Alaska Native/Native Hawaiian Serving Institutions

Hilo, HI

\$3.2 million

University of Hawaii System

Alaska Native and Native Hawaiian Serving Institution students and communities tend to be underserved when compared to other segments of Americans. This program provides needed resources for institutions in the region to reach out to Native Hawaiians and Alaska Natives. This project is being implemented with a collaborative effort between nine UH campuses and their associated Cooperative Extension Services, and the Agricultural Incubator Program. This project will focus on building capacity and ownership among Hawaii's rural agriculture communities, including a large number of Native Hawaiian and other traditionally underserved minority populations.

APHIS Interline

Honolulu, HI

\$3 million

Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine (PPQ)

This initiative provides for preclearance passenger baggage inspection for those interisland passengers departing Lihue, Kauai; Kahului, Maui; Kapalua-West Maui; Lanai City, Lanai; Hilo, Hawaii; Kailua-Kona, Hawaii; and, Molokai with subsequent connections to the U.S. Mainland. Without the funds, there will be major disruptions or lapses in the inspection of passengers and cargo destined for the U.S. mainland; or, the State of Hawaii will need to pay the cost for a federally mandated quarantine to minimize inconvenience to mainland bound passengers. Further, these inspections prevent the spread of agricultural pests and diseases from infesting agriculture in the continental United States, a federal responsibility.

APHIS Wildlife Services Hawaii
Honolulu, HI and Hilo, HI
\$2.23 million
Hawaii, Guam, and Pacific Islands Wildlife Services

The Wildlife Services program in Hawaii, Guam, and the Pacific Islands focuses on the protection of Agriculture. This agency fills a void in the Pacific Island area where there is limited expertise available to deal with vertebrate pest problems over large geographical areas. A key part of the operations program of this federal agency is to prevent movement of Brown Tree Snakes from Guam to Hawaii. The establishment of invasive species such as the Brown Tree Snake would serve as a major ecological disaster in Hawaii given the unique biodiversity. Protecting this biodiversity for future generations is a national interest.

Collaborative Fruit Fly Program in Hawaii Feasibility
Honolulu, HI
\$100,000
Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine (PPQ)

This initiative is a feasibility analysis of a programmatic center for effective management of fruit flies that is fully transferable to other parts of the United States. A comprehensive program is needed to effectively manage fruit flies to minimize introductions to areas free of this invasive pest and to control infestations should they occur. Hawaii is an ideal venue to maintain and further develop this knowledge base. Further, Hawaii is the only state with established populations of the trephritid fruit flies and has a substantial concentration of fruit fly researchers and regulators.

Geographically Disadvantaged Farmers and Ranchers
Honolulu, HI
\$15 million
Hawaii Farm Bureau Federation

This initiative improves the ability of geographically disadvantaged farmers and ranchers to compete in interstate and foreign commerce by providing direct assistance to U.S. farmers and ranchers in Alaska, Hawaii, and the Caribbean and Pacific Basins. For many years and especially since the era of rising fuel costs, farmers and ranchers outside of the 48 contiguous states have operated a competitive disadvantage. This initiative is one way the federal government can enhance competitiveness of disadvantaged farmers and ranchers.

Hawaii Agriculture Research Center
Aiea, HI
\$592,000
Hawaii Agriculture Research Center

The Hawaii Agriculture Research Center (HARC) uses its sugarcane research capacity to enhance the competitiveness of sugarcane growers in the United States and to support the diversification of Hawaii's agriculture. This work will focus on studying the mechanisms of disease resistance to important pathogens attacking tropical plants with biotechnology approaches and modern molecular technologies, including proteomics and molecular genomics approaches. Further these efforts are critical in maintaining U.S. production of sugarcane and other non-sugar byproducts from the sugar cane plant.

Hawaii Floriculture Development
Honolulu, HI
\$400,000
University of Hawaii, College of Tropical Agriculture and Human Resources

More than 930 farmers in Hawaii are producing crops for the nursery and floriculture. These crops have a farm gate value of \$105 million in 2007. While the industry is a significant part of Hawaii's diversified agriculture, individual farmers face significant challenges. The funds will provide research and development to provide new and unique cultivars and efficient practices to control grower costs is critical to the continued success of Hawaii's floral and nursery industries. Through the development of new varieties this project enables the United States to compete in global floriculture markets.

Project Name: Minor Crop Pest Control
\$265,000
University of Hawaii, College of Tropical Agriculture and Human Resources

This research program focuses on Hawaii's important horticultural crops, all of which are classified as minor crops. The main goal of this project is to develop economical and environmentally friendly pest and disease management strategies for Hawaii's economically important and potentially important crops, all classified as minor crops. Crop pests and diseases are limiting factors in the production of minor crops in Hawaii. Biologically-based pest management technologies must be developed to protect our crops as we phase out synthetic pesticides. The work of this project has valuable applications to other warm weather states in the southern United States.

Multi-species Fruit Fly Facility**Honolulu, HI****\$2.6 million****Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine (PPQ)**

The goal of this project is to design a multi-species sterile fruit fly production facility to provide emergency preparedness for SIT programs as prescribed in the National Incident Management System (NIMS) and to support fruit fly exclusion programs. The key to emergency preparedness is swift response, frequently driven by physical resources. Supplies of sterile fruit flies are particularly susceptible to the presence/absence of production facilities. These large facilities take years to design and build, and many more months to amplify production to release quantities. Conversely, facilities already in existence can respond to sudden demands for sterile flies in just weeks. A multi-species fruit fly facility could provide sterile flies necessary to manage fruit fly pests in warm weather states that benefit the U.S. agriculture industry

Non-toxic Fruit Fly Control**Honolulu, HI****\$200,000****University of Hawaii, College of Tropical Agriculture and Human Resources**

The fruit fly program was re-directed a few years ago from the long-standing goal of eradication, to improved Integrated Pest Management (IPM) for Hawaii's crops and focusing on area wide pest control through trapping. The research funded through this project provides new and baseline information that can be applied directly to the HAW-FLYPM program, enhancing its effectiveness. The objective of this project continues to be development and evaluation of non-toxic, environmentally suitable, and, publicly acceptable technologies and processes for fruit fly control to reduce pest impacts in Hawaii to allow the interstate and international movement of Hawaii agricultural products.

Pacific Basin Agricultural Research Center (PBARC) Construction**Hilo, HI****\$15,059,479****Pacific Basin Agricultural Research Center**

This ARS Center is the only federal facility conducting research on the tropical agriculture in Hawaii and the American affiliates in the Pacific Basin. While the region is sparsely populated, it is huge – comparable in size to the contiguous 48 States. In addition, the agricultural systems are uniquely tropical and as such cannot benefit from the vast temperate agricultural knowledge base of the continental United States. The requested funds will complete construction of the Pacific Basin Agricultural Research Center in Hilo, Hawaii.

Pacific Basin Agricultural Research Center (PBARC) Staffing

Hilo, HI

\$700,000

Pacific Basin Agricultural Research Center

This request is for staffing the completed portion of the PBARC laboratory. With the completion of Phase I construction, it is essential that additional funds be provided to PBARC to begin execution of staffing plans for this new laboratory facility. More specifically, the two priority areas on the staffing plan are a scientist focused on sustainable and organic agriculture; and, a scientist to develop new value added products, especially as they relate to crops that can be used for feeds and that may be used for biofuels. There is significant need for sound information and data on growing organic crops in Hawaii in sustainable ways. Similarly, Hawaii has become a major focal point on activities for becoming more energy self-sustainable. Many crops such as grasses, algae, and other crops that are adaptable to Hawaii's climate will be investigated as sources for biofuels.

Papaya Ringspot Virus

Honolulu, HI

\$233,000

University of Hawaii, College of Tropical Agriculture and Human Resources

The Hawaii papaya industry continues to be unstable. Due to irregular weather, especially heavy rainfall during certain periods and drought during other times of the year, and ongoing disease and insect problems, trees produced less fruit and smaller harvests. The Papaya Ringspot virus-resistant transgenic papaya, i.e. Rainbow and SunUp are well accepted by both consumers, locally and on the U.S. mainland, and by Hawaii producers. There is a need for research to support both the expansion of the ringspot virus resistance and to address new threats continues.

Pineapple Nematode Control

Hilo, HI

\$282,000

Pacific Basin Agricultural Research Center

Pineapple is the most important fruit crop grown in Hawaii and has long been the 'signature' crop of Hawaii. In the last 15 years, the pineapple industry has been faced with two important problems that threaten to limit the production of the crop and perhaps its very existence as an industry in Hawaii. A crucial problem is the precocious flowering of 'fresh' pineapple cultivars in certain times of the year, which results in over production in a relatively short time period of time followed by periods of low production. A second problem is the chronic impact of nematodes in pineapple production. The main objective of this project is to use the genetic engineering approach to develop commercial fresh market pineapple with more uniform flowering over time, and a secondary objective is the development of resistance or tolerance to nematodes. Success in obtaining these objectives would ensure the longevity and perhaps expansion of the pineapple industry in Hawaii.

Prevention and Control of Invasive Termite Species in Hawaii

Honolulu, HI

\$200,000

University of Hawaii, College of Tropical Agriculture and Human Resources--Plant & Environmental Protection Sciences

Termites are the most economically important insect pests in the State of Hawaii with estimated annual damages in excess of \$150 million on state, federal and private property. This project uses the tools of entomology, biotechnology, and education to (1) assess and improve methods of termite control in Hawaii and the Pacific region, (2) understand the biology and behavior of invasive termites in Hawaii to prevent them from spreading further, and (3) promote safe and effective termite control in Hawaii's communities. This is the only research program dedicated to controlling this destructive pest in the State. Further control methods are often transferred to benefit other parts of the United States with termite issues.

Tropical Aquaculture Feeds

Waimanalo, HI

\$1.438 million

Hawaii Pacific University, Oceanic Institute

This program falls under the Pacific Basin Agricultural Research Center (PBARC) as a component of its aquaculture research mission. The program is dedicated to determining the nutritional requirements of promising tropical species and feed processing methods, and, importantly, with PBARC, finding alternative local ingredients to replace diminishing supplies of fishmeal, most commonly used in feeds for aquatic species. This program supports the expansion of US aquaculture and the aquatic feeds industry working in cooperation with U.S. feed manufacturers, ingredient processors and suppliers, and aquaculture companies.

Tropical and Subtropical Agricultural Research (TSTAR)

Honolulu, HI

\$9 million

University of Hawaii, College of Tropical Agriculture and Human Resources

The tropical and subtropical regions of the U.S. have unique agricultural challenges and opportunities with limited local resources and limited transferability of temperate zone agricultural research. Collaborative regional agricultural research is critical to meeting the increasing challenges and opportunities in tropical island environments. This project provides research that maintains and enhances production of tropical and subtropical agricultural products, while encouraging agricultural practices that are environmentally acceptable.

Varroa Mite Suppression to Ensure National/Global Pollination Capacity

Honolulu, HI

\$1.8 million

Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine (PPQ)

It is imperative that funds be provided to continue comprehensive activities to suppress and limit the varroa mite population on Oahu Island and eradicate populations on the Big Island. The varroa mite was first detected in Hawaii on Oahu in April of 2007. The infestation of varroa mites in hives of bee keepers on Hawaii Island would have serious economic consequences to the multi-billion dollar agriculture industry on the U.S. mainland because it would significantly reduce the supply of mite-free queen bees for mainland bee keepers. As Hawaii is the only domestic supplier of varroa-free queen bees for honey producers and pollinators, preservation of this national resource is essential.

Watershed and Flood Prevention Operations

Honolulu, HI

\$3.175 million

Natural Resources Conservation Service (NRCS), Pacific Island Area

Water is Hawaii's most limiting natural resource and every effort must be made to complete approved watershed projects to increase water storage capacity, efficiency of delivery systems, and water conservation in Hawaii. This initiative seeks completion of approved projects designed to increase water storage capacity, efficiency of delivery systems, and water conservation in Hawaii. In addition, funds to complete the Kagman Watershed project in the Commonwealth of the Northern Marianas (CNMI) are also requested. The goal of this initiative is completion of approved and initiated watershed projects in Hawaii and the CNMI.

Watershed Planning Staff

Honolulu, HI

\$500,000

Natural Resources Conservation Service (NRCS), Pacific Island Area

The planning workload for Natural Resource Conservation Science (NRCS) Hawaii is increasing as land previously managed by sugarcane and pineapple plantations are being released to smaller scale diversified agricultural operations. Further, recently enacted provisions in the conservation title of the farm bill to substantially expand conservation activities places new demands on the limited planning staff even as there are efforts to use third-party consultants. The project would target efforts to better manage watersheds and their resources.

Women in Technology

Kihei, HI

\$141,000

Maui Economic Development Board, Inc.

This initiative recruits and facilitates more girls/women and under represented groups into science, technology, engineering and math (STEM) education and careers by addressing rural and cultural barriers that have historically precluded girls/women and under represented groups from entering technology based fields. This is done through maximizing program and training delivery through electronic platforms and distance learning; working in concert with/and building upon existing programs to increase outreach and participation for rural/isolated community participants; tapping youth serving organization; increasing business and education partnerships through industry mentor recruitment and facilitated matches with student protégés; and building STEM career awareness through job shadowing and hands-on project based learning programs. Lessons learned in Hawaii will be transferrable to other parts of rural America.