

## The facts: UC's global food activities

### SERVING THE WORLD

The University of California Global Food Initiative builds on UC's strengths as a public research university, leveraging its impact around the globe to work toward putting the world on a path to sustainably and nutritiously feed itself.

UC's 10 campuses, agricultural division and labs are equipped to tackle the food challenge across multiple disciplines through teaching, research, operations, policy and service, UC research not only has played a key part in helping California become the nation's leading agricultural state, it also has made contributions around the world.

### GLOBAL REACH

UC is a global institution, with a reach that extends to nearly every corner of the world. Many of those international partnerships focus on issues of agricultural and economic development, global health, climate change, diplomacy, human rights, and other issues that impact food security and sustainability.

For example, UC's Division of Agriculture and Natural Resources works with more than 130 countries from Afghanistan to Zimbabwe to conduct research and provide expert agricultural advice. Our Blum Centers, housed at five UC campuses – Berkeley, Davis, Los Angeles, Merced and San Diego – work toward the betterment of the global society, seeking sustainable solutions from poverty to health.

- UC Davis is leading an international effort to find and control diseases that move between wildlife and people. The PREDICT global early warning system aims to identify emerging threats and stop them early so that pandemics like HIV/AIDS and SARS are averted.
- UC Irvine's Costa Rica Program focuses on sustainability, food and diversity themes.
- UCLA's Resnick Program for Food Law and Policy studies and advances breakthrough solutions for improving the modern food system.
- UC San Diego researchers are involved with developing algae biotechnology, which could help provide a renewable source of fuel and have other applications that could play a significant role in meeting the world's food, water, energy, health care and material needs.
- UC Santa Barbara's Sustainable Fisheries Group provides scientific expertise that helps to better align economic incentives for fishermen with ocean stewardship, creating implementable changes to ensure the long-term health of coastal ecosystems.

### BROAD EXPERTISE

From teaching to research to policy, UC is a go-to source across the food spectrum. UC Davis has the world's top-ranked agricultural research and training institution; UC Riverside is a hub for citrus and invasive pest expertise; UC Santa Cruz is recognized as the original modern authority on organic and sustainable agriculture. In 2013, UC hosted a Global Food Systems Forum that convened experts from UC and around the globe to address the topic of how the world can sustainably feed itself.

- Food centers: UC Davis alone hosts 27 centers that focus on food and agriculture, including the World Food Center, UC Agricultural Issues Center and Agricultural Sustainability Institute. Others include the UC Berkeley Food Institute, UCLA Seed Institute, UC San Diego Center for Food and Fuel for the 21<sup>st</sup> Century, and UC Santa Cruz Center for Agroecology & Sustainable Food Systems. UC Riverside will open an agricultural institute this summer. ANR formed a Nutrition Policy Institute earlier this year. UC's Global Health Institute addresses problems arising from the human-water-animal-food interface.
- Patents: UC is the largest public holder of agriculture and biotech patents registered in the United States — UC holds 627 active plant licenses.
- Safe drinking water: A system for removing arsenic from groundwater, developed at Lawrence Berkeley National Laboratory, is helping to provide safe drinking water for people in India and Bangladesh.
- Fisheries: UC San Diego oceanographers have shown that a decade-long ban on fishing in a marine park in Baja California has restored the fish population and helped the economy.

## CLIMATE CHANGE

UC scientists are helping shape policy and practices by forecasting potential impacts of climate change.

- A UC Berkeley economist led the econometrics team that helped assemble a major report that projects significant economic risks from climate change in the U.S. It's the first data-driven national study to provide local estimates for economic risks to key economic sectors.
- Berkeley Lab climate scientists are experts in developing predictive models that reveal the complex processes shaping and controlling the planet. Their scientific modeling expertise includes the ability to perform multiscale simulations of abrupt and extreme climate change through development, deployment and diagnosis of new model frameworks.
- UC Merced is studying the Sierra Nevada snowpack, working to more accurately predict water availability.
- UC San Diego's Scripps Institution of Oceanography researchers are developing early warning systems for drought that will be useful for the agricultural sector across the country.

## EXPORTING KNOWLEDGE

California is the nation's top agricultural exporting state, with leading products including almonds, dairy, wine, walnuts, pistachios, rice, processed tomatoes and strawberries. UC contributions include:

- Rice: UC Davis and UC Riverside geneticists have helped developed flood-tolerant rice, benefiting rice farmers in flood-prone countries. More than 10 million farmers today have and grow Sub1 rice in their flood-prone fields. UC researchers also are making progress toward developing drought-tolerant crops.
- Strawberries: About 65 percent of the strawberries produced in California and about 40 percent of the world's strawberries are from UC-developed varieties.
- Cowpea: This is a major source of protein in Africa and an increasingly important crop in California. UC Riverside researchers have developed drought-, disease- and insect-resistant strains to increase yield.