

IMPACT

CA&ES DEAN'S OFFICE • UNIVERSITY OF CALIFORNIA • ONE SHIELDS AVENUE, DAVIS, CA 95616

IMPACT is a series of publications highlighting how UC Davis' College of Agricultural and Environmental Sciences makes a difference in the lives of Californians. Through research, teaching, and outreach programs, UC Davis research touches almost all aspects of Californian life. Today, millions of people eat safer foods, breathe cleaner air, and drink healthier water with the help of our researchers. We're making discovery work – for California and the world.

SUSTAINABILITY FOR FARMS AND FOOD

THE ISSUE

At the turn of this new century, farmers, ranchers, and communities in California face important challenges. The agriculture sector of California's economy is valued at close to \$32 billion annually and is known worldwide for its productivity, variety, and quality. But it faces pressures such as population growth and competition for land and water, rising fuel costs, increasing regulations, and competition from overseas markets—all of which make it difficult for producers to stay profitable. In 50 years, will California agriculture be vibrant and sustainable?

WHAT WE'RE DOING

The UC Davis College of Agricultural and Environmental Sciences is addressing the challenge to keep our agriculture sustainable through research and engagement on many levels. At the forefront of these efforts is the Agricultural Sustainability Institute (ASI). The institute was established in 2005 at UC Davis, in part, with a \$1.5 million gift from the W.K. Kellogg Foundation, which created an endowed chair in Sustainable Food Systems.

The ASI joins together several campus and UC Cooperative Extension (UCCE) programs with a long history of addressing sustainable agriculture in California. The Russell Ranch Sustainable Agriculture Facility is home to the sustainable agriculture farming systems project, begun in 1988, and the Long-Term Research on Agricultural



KENT BRITTAN / UC COOPERATIVE EXTENSION

Systems Project, begun in 1991. The institute is also a partner with the statewide UC Sustainable Agriculture Research and Education Program (SAREP), which since 1986 has helped farmers and ranchers develop biologically integrated farming practices, and linked growers and consumers more closely in community food systems like farmers markets. The UC Davis Student Farm, begun in 1977, has also joined ASI to encourage student knowledge and leadership in sustainable agriculture.

ASI programs are making a difference in three principal areas:

Agriculture, Resources, and the Environment

Since 1988 a team of more than 50 UC researchers and California growers has been experimenting with alternative cropping systems to reduce costly inputs while ensuring profitability and environmental

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quality, according to Will Horwath, professor of biogeochemistry in the Department of Land, Air and Water Resources. The project is showing growers how to reduce synthetic fertilizers; manage cover crops, crop residue, and soil organic matter; and manage weeds and other pests with fewer pesticides.

“Now we’re comparing the effects of conservation tillage and cover cropping on the way sediment, nutrients, and pesticides are transported in runoff from conventional, cover-cropped, and organic farming systems,” Horwath says.

Food Systems and Society

Sustainable food systems also address production practices, marketing and distribution, farm labor, consumer education, and policies that make farming in California economically viable, environmentally sound, and socially responsible over the long-term, according to Gail Feenstra, ASI food systems analyst.

Projects linking local farmers with institutions like schools, hospitals, prisons, farmers markets, and community supported agriculture projects (subscriber farms) are ways communities are making connections with and increasing sales for area farmers.

“We’re seeing school children increase their consumption of fresh, local fruits and vegetables in schools participating in farm-to-school programs,” Feenstra says.

Education and Leadership

A commitment to innovative agriculture means instruction from pre-kindergarten through post-graduate education. The UC Davis Student Farm has provided field training for undergraduates for more than 30 years. Current activities include the development of an undergraduate major in sustainable agriculture—the first in the UC system—and the continuation of the successful Children’s Garden Program and its garden-based learning model.

“Thousands of elementary-school children visit our working farm and garden site each spring to learn about garden ecology and growing food,” says Carol Hillhouse, Children’s Garden Program director. “We offer hands-on training for college students, teachers, parents, and volunteers who work with school gardens.”

A SHARED VISION

Collaborative projects within the Agricultural Sustainability Institute are discovering how to make production practices more sustainable, innovative, adaptive, and profitable. Food-systems research and education is building awareness and understanding of where our food comes from and how good health and a healthy environment are joint efforts of universities, consumers, farmers, policymakers, and industry.

That’s impact—cutting-edge science and an engaged public creating healthy farms and food systems.

CONTACTS

Tom Tomich, *director*
ASI/SAREP
(530) 574-2503
tptomich@ucdavis.edu

William Horwath, *professor*
Department of Land, Air
and Water Resources
(530) 754-6029
wrhorwath@ucdavis.edu

Gail Feenstra, *food systems analyst*
ASI/SAREP
(530) 752-8408
gwfeenstra@ucdavis.edu

Carol Hillhouse, *director*
Student Farm Children’s Garden
Program
(530) 752-7033
jchillhouse@ucdavis.edu

College of Agricultural and Environmental Sciences

Neal Van Alfen, *dean*
(530) 752-1605
nkvanalfen@ucdavis.edu

Lyra Halprin, *sr. public information representative*
ASI/SAREP
(530) 752-8664
lhalprin@ucdavis.edu

www.caes.ucdavis.edu

