

IdahoCAFE

Center for Agriculture, Food and the Environment



University of Idaho
College of Agricultural
and Life Sciences

IDAHO IDA
dairymen's association



IdahoCAFE



Executive Summary

The Idaho Center for Agriculture, Food and the Environment (CAFE) will be the country's largest and most advanced research center targeting the dairy and allied industries. It will support a **sustainable dairy production system** located in a semi-arid environment in the third largest dairy producing state. Idaho CAFE will support **workforce development, education, and community engagement** in the state and region.



CAFE Will be Unique in the U.S.

The dairy will have a herd size of **2,000 animals** (average size of a herd in Idaho) and will be located in the heart of the state's dairy producing region. While research data generated at CAFE will have broad implications across the U.S., the **semi-arid environment** where most of Idaho's dairies are located will make CAFE's research indispensable in the water-constrained West. CAFE's **location, herd size and research scope** make it uniquely positioned to address real-world issues facing the dairy and food processing industries.



Through applied **research, outreach and teaching**, the Idaho Center for Agriculture, Food and the Environment will be a sustainable agriculture system focused on providing global solutions to ongoing issues facing agriculture, food, the environment and society now and for years to come.

A Regional Model for CAFE: Three Locations



Research Dairy and a Water & Soil Health Demonstration Farm: Located in **Rupert – Minidoka County**, the core of CAFE is a 2,000-cow commercial scale dairy. The site also consists of 1,200 additional acres for complementary agronomic research, feed production, and nutrient management. This location will allow CAFE to engage stakeholders who want to better understand the interactions between dairy and water and soil health.

Outreach and Education Center at Crossroad Point: Located in **Jerome – Jerome County** at the interchange of I-84 and Highway 93, the Outreach and Education Center will sit at the second busiest intersection in Idaho where 40,000 cars pass through daily. This location provides the potential for the center to become a destination location for tourists and the general public while reinforcing the University of Idaho's land grant mission.



The Outreach and Education Center will provide a window into agriculture, food production, water, power and energy, and provide an opportunity for the public to learn from ongoing research. It will include an interactive discovery space, conference rooms, labs and offices for faculty, classrooms, student dorms, and an animal pavilion.



Food Processing Pilot Plant: Located in **Twin Falls – Twin Falls County** on the College of Southern Idaho (CSI) campus, the Food Processing Pilot Plant will enhance CSI's existing workforce development and educational programs and serve as the location for food processing and safety research.



CAFE's Five Programmatic Areas

1. Animal Related and Environmental Research

The sustainability of the dairy industry relies on the ability to address concerns regarding the health and welfare of animals in commercial dairies and tackle issues related to a dairy's "footprint" or environmental impact. These efforts will require a balanced approach between increasing productivity and efficiency while maintaining a sustainable ecosystem. Research involving multiple disciplines will:

- Determine best practices ensuring animal health and welfare with high-quality milk production;
- Evaluate feed ingredients to meet requirements for good health and productivity;
- Implement robotic systems into herd management and milking and evaluate long-term use;
- Assess alternative housing systems to improve cow comfort and longevity;
- Examine low-stress handling and transportation;
- Evaluate systems to efficiently deliver irrigation water and nutrient management;
- Create value-added byproducts from waste materials.

2. Agronomic Research

The Magic Valley region produces some of the highest quality crops in the country. To sustain this standard in production, CAFE will explore the relationships between animal and crop agriculture – an interdependent connection in the Magic Valley. Agronomic research will:

- Find economical approaches to promote water and soil quality;
- Assess alternative feeds which may require less use of chemicals and water in production of feed ingredients;
- Improve feed production through use of integrated pest management, and better management of soil health, irrigation practices and use of renewable energy technologies;
- Evaluate approaches to reduce greenhouse gas emissions from dairies;
- Analyze policy and legal approaches promoting environmental protections.

3. Food Science Research

Research in multiple disciplines can contribute to innovations in food safety and quality to:

- Improve dairy management to ensure safe production, transport and handling of milk;
- Identify processing and production innovation to reduce food safety risks;
- Innovate new products with functional food and other healthful attributes;
- Improve engineering in food processing to maximize food quality and safety;
- Reduce the environmental impact of food processing;
- Train current and future employees for the food processing industry.



CAFE's Five Programmatic Areas - *continued*

4. Outreach and Education

Facilitated through the Outreach and Education Center at Crossroads Point in Jerome, CAFE will provide extensive opportunities to engage with the community. Some of these efforts will:

- Expand vocational training programs for the community;
- Increase awareness and knowledge of the industry for the local community;
- Provide continuing education for producers and farmworkers through on-site workshops, on-line activities and professional meetings;
- Encourage dialogue among ethicists, behaviorists, dairy scientists and veterinarians to communicate findings to the public.

5. Workforce Development

A strong partnership with the College of Southern Idaho and many of their faculty involved in agricultural programming and workforce development will allow CAFE to address industry employment needs across the spectrum. A partnership between the U of I and CSI will:

- Expand educational offerings for place bound students;
- Increase the shared degree options between U of I and CSI;
- Offer continuing education opportunities for those already in the workforce;
- Enhance worker safety training
- Build a pipeline of educated students prepared to enter the workforce.

Research at CAFE

Agricultural production associated with dairy in Idaho impacts Idahoans' quality of life in many ways. CAFE research will improve sustainability in the industry by enabling producers, dairies and food processors to adopt practices and policies to meet the sustainability requirements of their customers.

CAFE research will also address the economic, social and cultural sustainability of rural communities and diverse populations as well as the quality and sustainability of air, land and water resources of the rural communities impacted by the dairy industry.

Additionally, research through CAFE will support the economic vitality of agricultural and food production by expanding markets and food products to increase Idaho's GDP. CAFE will encourage the development of innovative new food products and product attributes, along with identifying new market opportunities nationally and internationally.

Major grant activity is currently taking place to support these efforts including a \$10 million grant proposal to the Centers of Biomedical Research Excellence (COBRE).

The dairy itself will be overseen by five herd and operations staff members, and the University of Idaho plans to locate 12 to 14 existing and new faculty and staff positions at CAFE to conduct studies and outreach activities.



Research at CAFE - *continued*

Faculty expertise will address issues in the following disciplines:

Animal Science

- Reproductive Physiology
- Herd Health
- Ruminant Nutrition
- Dairy Product
- Veterinary Entomology

Social Science

- Agricultural Economy
- Rural Sociology
- Science Communication
- Agricultural Education
- Extension Education

Food Science

- Sensory Food Processing
- Food Safety Microbiology

Environmental Science

- Water Systems Management
- Data Management/Visualization
- Bioenergy Production
- Civil/Mechanical Engineering
- Air Quality
- Crop/Water Modeling

Plant Science

- Cropping Systems Agronomy
- Soil Science
- Biogeochemistry
- Forage Crop Agronomy

What is Next for CAFE?

The Idaho Center for Agriculture, Food and the Environment is at the beginning stages of property ownership, design and construction for all three locations included in the project.

Immediate Efforts:

- March 2019 – Land for the dairy purchased in partnership with the Idaho Dairymen’s Association
- August 2019 – Land to be purchased for the outreach and education center

Ongoing Efforts:

- Design work for both the research dairy and the outreach and education center
- Fundraising efforts to support the development of the project
- Discussions with CSI to develop the food processing pilot plant and shared educational offerings, first classes in Fall ‘19

Future Efforts:

- 2023 – Outreach and education center welcomes first visitors
- 2024 – First cows milked at the dairy