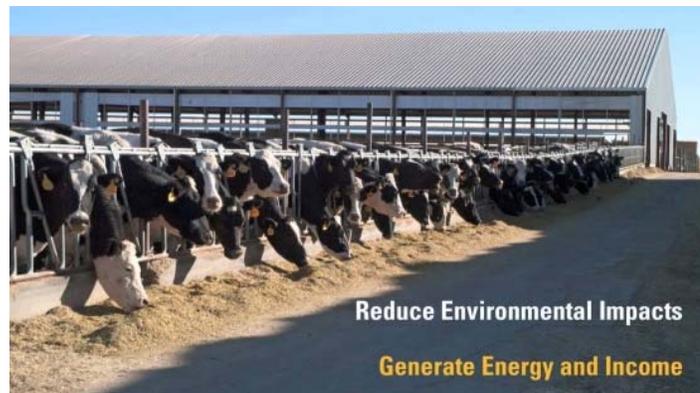


## A Sustainable Dairy Industry and Food System in a Water-Limited, Western Environment

Providing a safe and secure food supply for an increasing population is a major global issue. Animal protein is important to human nutrition, and dairy products will need to provide a greater proportion of total protein-based food supply given the negative effects of ocean acidification and fishery depletion.

The dairy industry can expand to meet these growing needs through innovation and the adoption of sustainable practices. A sustainable dairy industry and food system must simultaneously address goals for profitability, community vitality, and environmental quality.

The state of Idaho's dairy industry ranks number three in the United States behind California and Wisconsin in total dairy production, having grown from a \$73 million industry in 1970 to a \$2.43 billion industry in 2012. Continued growth must be within the framework of a sustainable dairy industry and food system. A sustainable industry and system will minimize fresh water depletion and methane emissions, generate new energy, preserve soil and ground and surface-water resources, generate new income through energy production and bio-refining for secondary products, and enhance communities by addressing societal issues such as the availability, education, and compensation of a skilled workforce.



### A Research Institute to Position Idaho's Dairy Industry for Long-Term Success

Research, studies, and education, organized and prioritized in a long-term sustainability framework, will provide the data and knowledge that the dairy industry and surrounding communities need to increase profitability, foster community vitality, generate new energy and value added products, and ensure stewardship of natural resources. A *Western Dairy Industry and Food Systems Institute* (WDIFSI) will conduct an ongoing research and education agenda to support a developing industry over time, with priorities identified in a sustainability framework to address issues in a complex working environment. Modeling and research will test and compare different scenarios, illuminating the interactions between social, economic, and environmental variables and testing the consequences, outputs, and impacts of potential natural perturbations and intentional management interventions.



Research priorities for a *Western Dairy Industry and Food Systems Institute* will focus on many issues, including: a) water conservation and efficient use and tradeoffs with other uses; b) water soil and air quality; c) bio-refining, anaerobic digestion, energy production, recycling, and reuse; d) value-added products like pathogen-free fiber, recovered chemicals, bio-plastics, and petrochemical precursor substitutes; e) workforce and community vitality issues related to food systems; and f) business and animal care practices that impact industry profitability. This systematic and integrated approach is the key to achieving and sustaining a profitable and environmentally sound dairy and food industry for the long term.

## Partnerships for Success

A sustainable future will require strategic partnerships among leaders and organizations that bring knowledge and support from various parts of the social, economic, and environmental fabric of Idaho's dairy industry and food system. Partnership activities already underway include:

- A steering team made up of scientists, engineers and administrators at the University of Idaho and Idaho National Laboratory (Center for Advanced Energy Studies, CAES) formulating and launching a plan for the establishment of the the *Western Dairy Industry and Food Systems Institute*.
- A statewide Partnership Group to guide the design and implementation of a *Western Dairy Industry and Food Systems Institute*.
- A modeling team working on conceptual maps and models describing the complex dairy industry and food system in the water-limited environments of Idaho and the Inland Northwest.
- A consortium of universities from dairy industry states partnering to implement research and education priorities identified by the *Western Dairy Industry and Food Systems Institute*.
- A Memorandum of Understanding between the University of Idaho, the Idaho National Laboratory (CAES), and the Innovation Center for US Dairy (a national dairy trade association), fostering discussions about the establishment of a *Western Dairy Industry and Food Systems Institute* in Idaho and a national dairy research program.



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