

# Sustainable Agriculture & Food Systems in the United States

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Sponsored by:  
The OECD Co-operative Research Programme:  
Sustainable Agricultural and Food Systems



**Global Conference on  
Sustainability in Agriculture & Food Systems**  
Innovation, Indicators & Implementation

# USDA Sustainability Definition

- Elements of agricultural sustainability:
  - Satisfying human needs,
  - Enhancing environmental quality, the resource base, and ecosystem services, and
  - Sustaining the economic viability of agriculture
- Taken together, the intent is to enhance the quality of life for farmers, ranchers, forest managers, workers, and society as a whole.
- **This includes both perpetuating and improving (regenerative).**



# USDA Sustainability Conceptualization

1. **Sustainable Productivity Growth** – Conserving the natural resource base
  - TFP growth drives *competitiveness* in world markets
  - TFP growth drives *land use change*
  - TFP growth can reduce overall *input usage*
  - TFP growth can reduce *greenhouse gas emissions*
  - TFP growth can improve *nutrition outcomes*

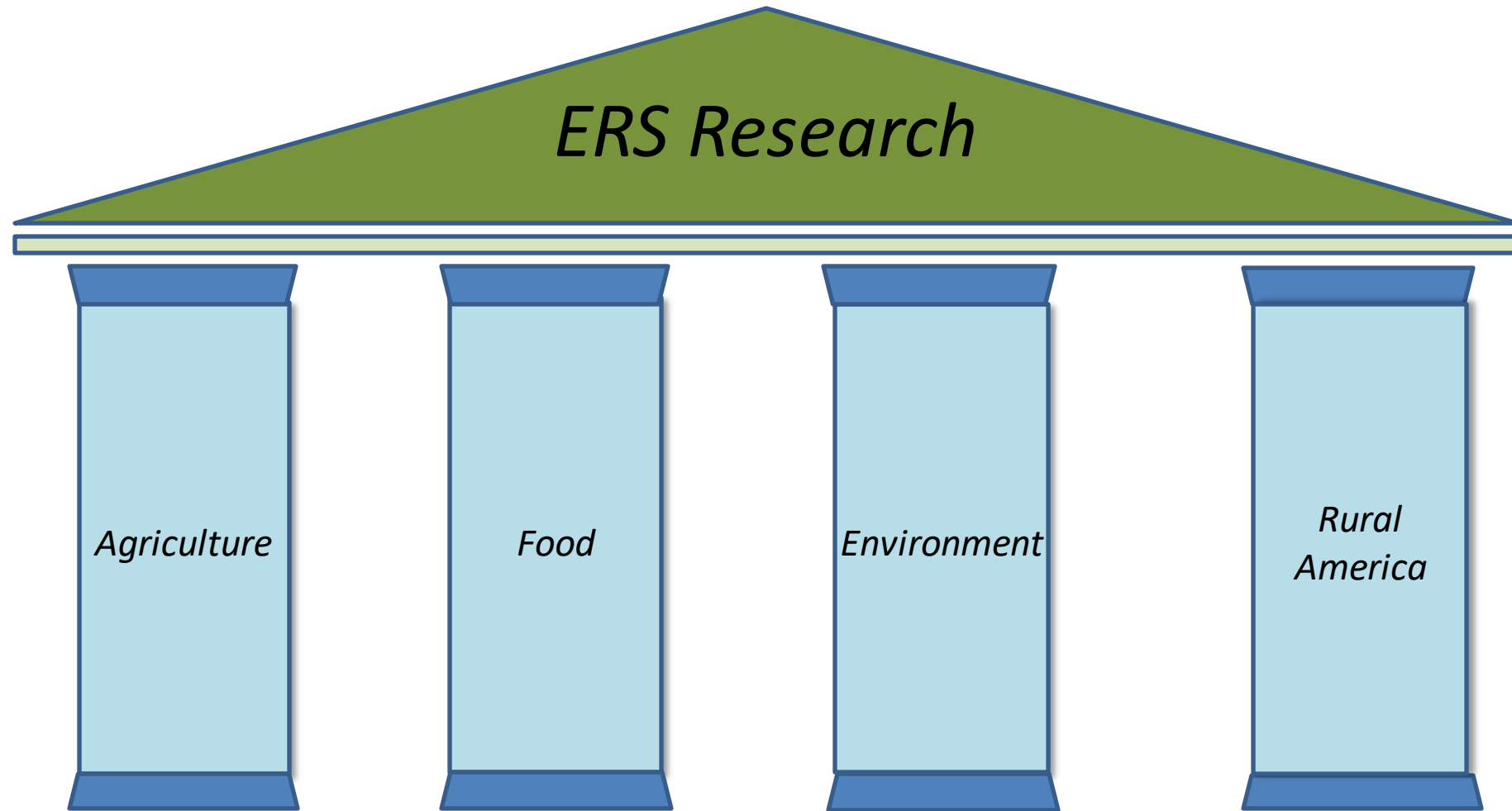


# USDA Sustainability Conceptualization

2. **Focus on the Policy Challenges** – Across countries we have common end goals and paths to get there vary.
  - Climate smart, adaption, mitigation, resilience
  - Target: To minimize the impact of agricultural production on environmental degradation at a minimum, and seek to enhance the environmental asset base
3. **Facilitating and Promoting Growth** – This does not have to be a trade-off situation between ag output vs. environmental preservation improvement (zero-sum game).
  - This can be a win-win: land-sparing/saving activity, water-use saving/water quality gaining, soil health enhancing, & GHG-reducing activity
4. **Innovation & Creative Solutions** – Lastly, clearly, there is a role for ag science innovation and a role of creative economic mechanisms (incentives, markets) to effect change.



# Pillars of ERS Research



# ERS Research Addresses Several Key Issues

- Farm Income, Labor & Policy
- Financial Risk & Tax Policy
- Rural Infrastructure
- Trade Policy/Foreign Competition
- Technology Adoption & Precision Ag
- Rural Economic Prosperity
- Healthy, Local, Organic Foods
- Income & Debt
- Water Use, Irrigation, & Resource Conservation
- Consumers & Food Assistance Policy
- Beginning Farmers
- Food Safety Rules
- Risk Management
- Bioenergy
- Land Use





**On the Horizon**

*A Focus on Interconnected Research*

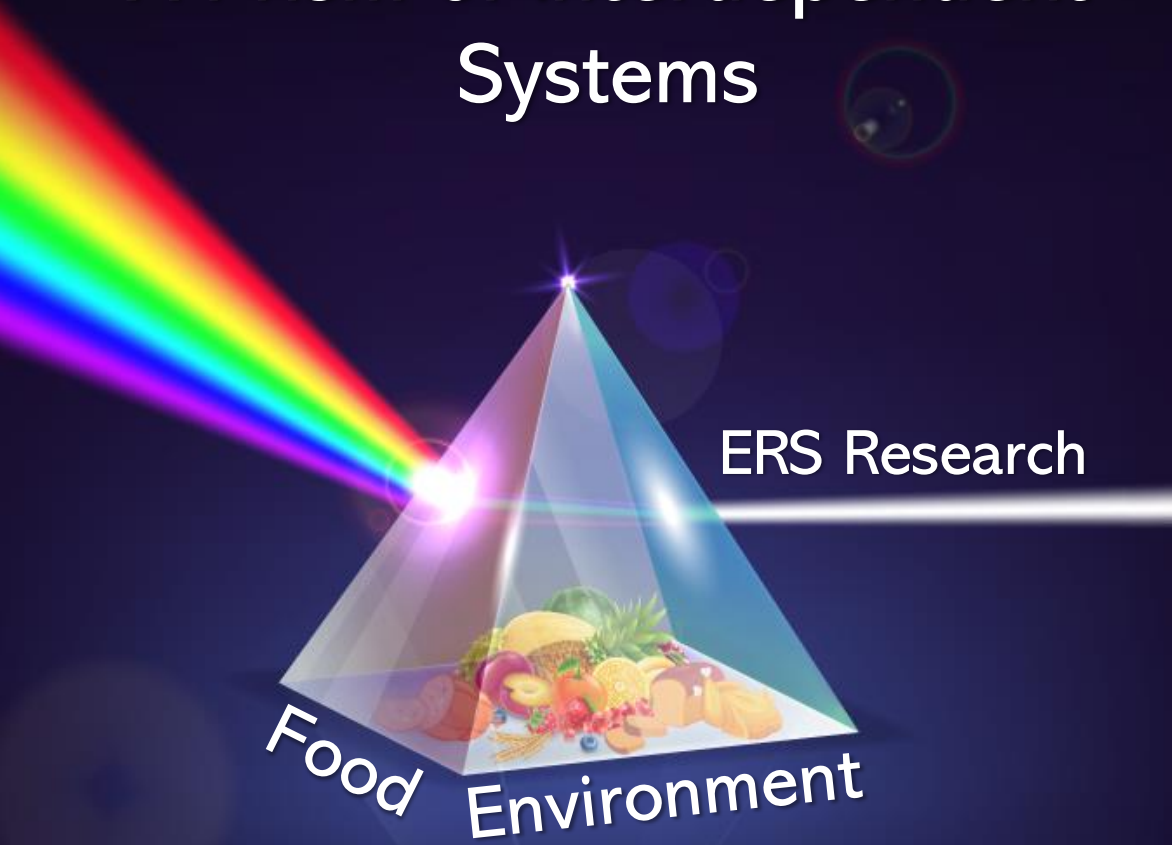
*Food is \_\_\_\_\_ ?*

Security  
Sustainable Basic  
Fun Fuel Health  
enhancing Life  
Regenerative  
Engagement  
need Sustenance Family  
Friends <sup>taco</sup> Business  
Medicine Culture  
Livelihood

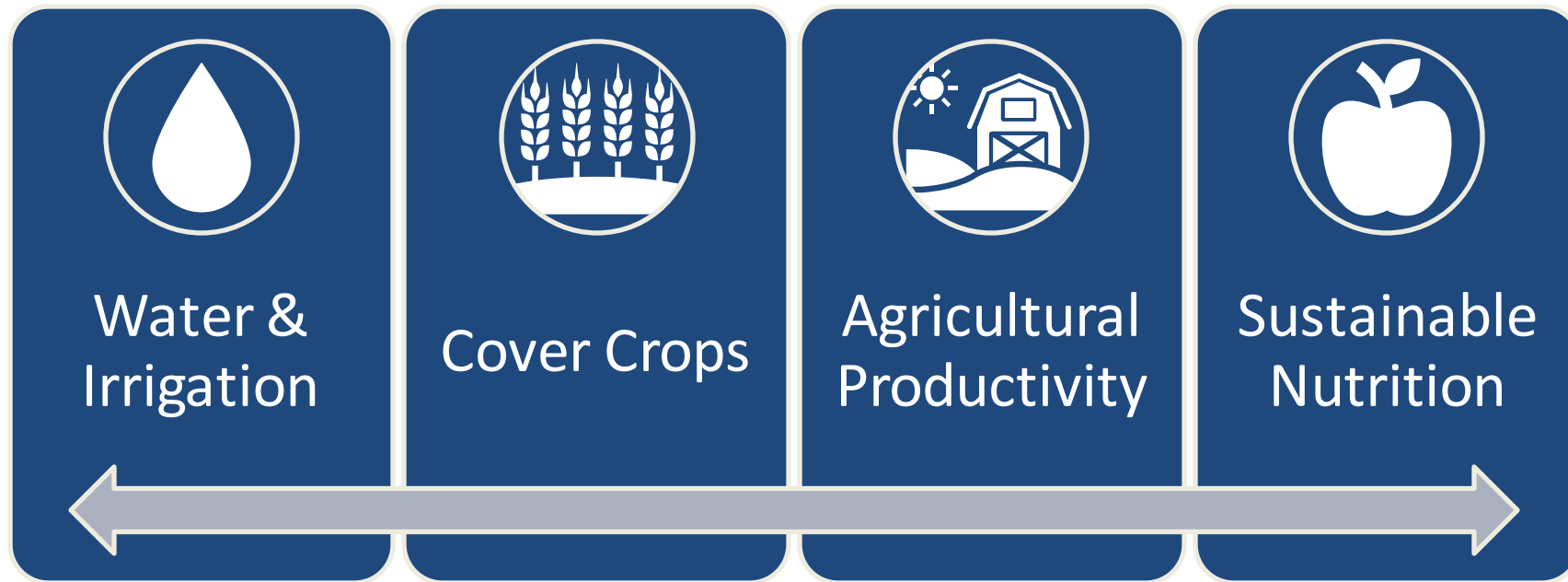




# The Food Environment: A Prism of Interdependent Systems



# ERS Research on Sustainable Agriculture



# Water & Irrigation

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**Survey of Irrigation Organizations** report series examining:

- Groundwater management
- Drought planning & response
- Water storage & delivery
- Trends in U.S. irrigated agriculture
- Efforts to increase resilience under water supply scarcity



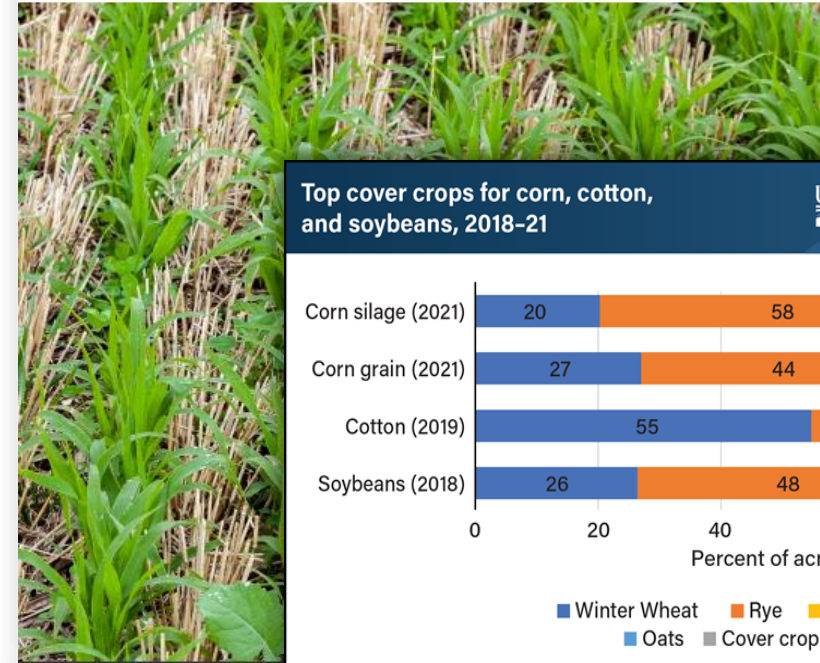
# Cover Crops

## Cover Crop Trends, Programs, & Practices in the United States

- A report exploring how cover crops are managed on corn, cotton, soybean, & wheat fields

### Key Finding

- U.S. farmers are rapidly expanding the adoption of cover crops.
- In 2017, farmers reported planting 15.4 million acres of cover crops, a 50% increase compared to the 10.3 million acres in 2012.



Note: In the 2018 Agricultural Resource Management Survey for soybeans, rye included cereal rye and ryegrass. In the 2019-21 surveys, ryegrass is reported separately and included in the other category. Cover crop mix consists of at least two species. Corn can be grown for grain (the ears) or silage (the harvesting of the entire plant for forage). Other can include a variety of cover crops such as barley, winter peas, radishes, hairy vetch, mustard, and canola.

Source: USDA, Economic Research Service (ERS) using data from ERS and USDA, National Agricultural Statistics Service's Agricultural Resource Management Survey.

# Agricultural Productivity

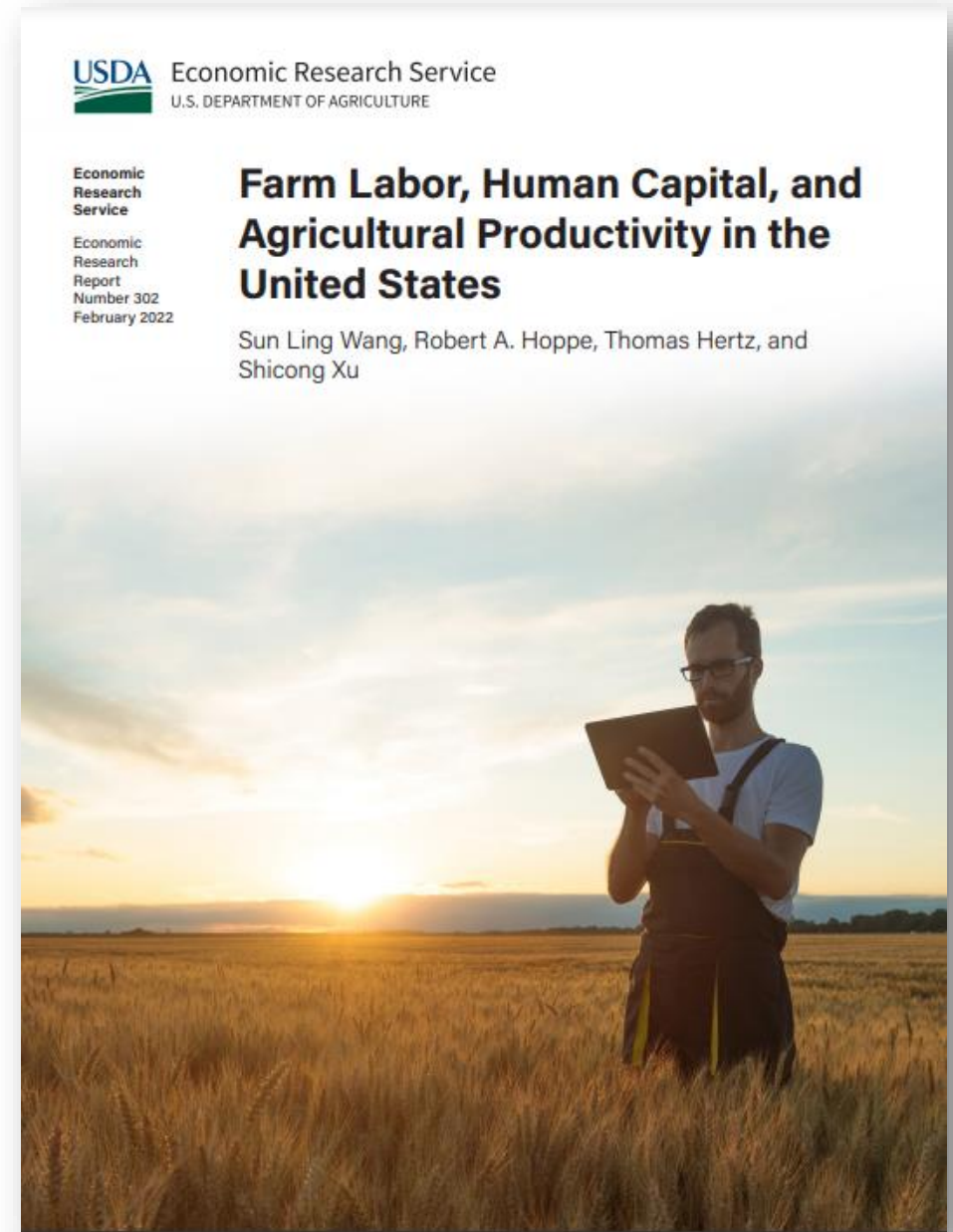
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## Farm Labor, Human Capital, and Agricultural Productivity in the United States

- A report on farm labor contributions to U.S. agricultural growth & the changing composition of the U.S. farm labor force

### ERS Data Products

- U.S. Agricultural Productivity
- International Agricultural Productivity



# Sustainable Nutrition

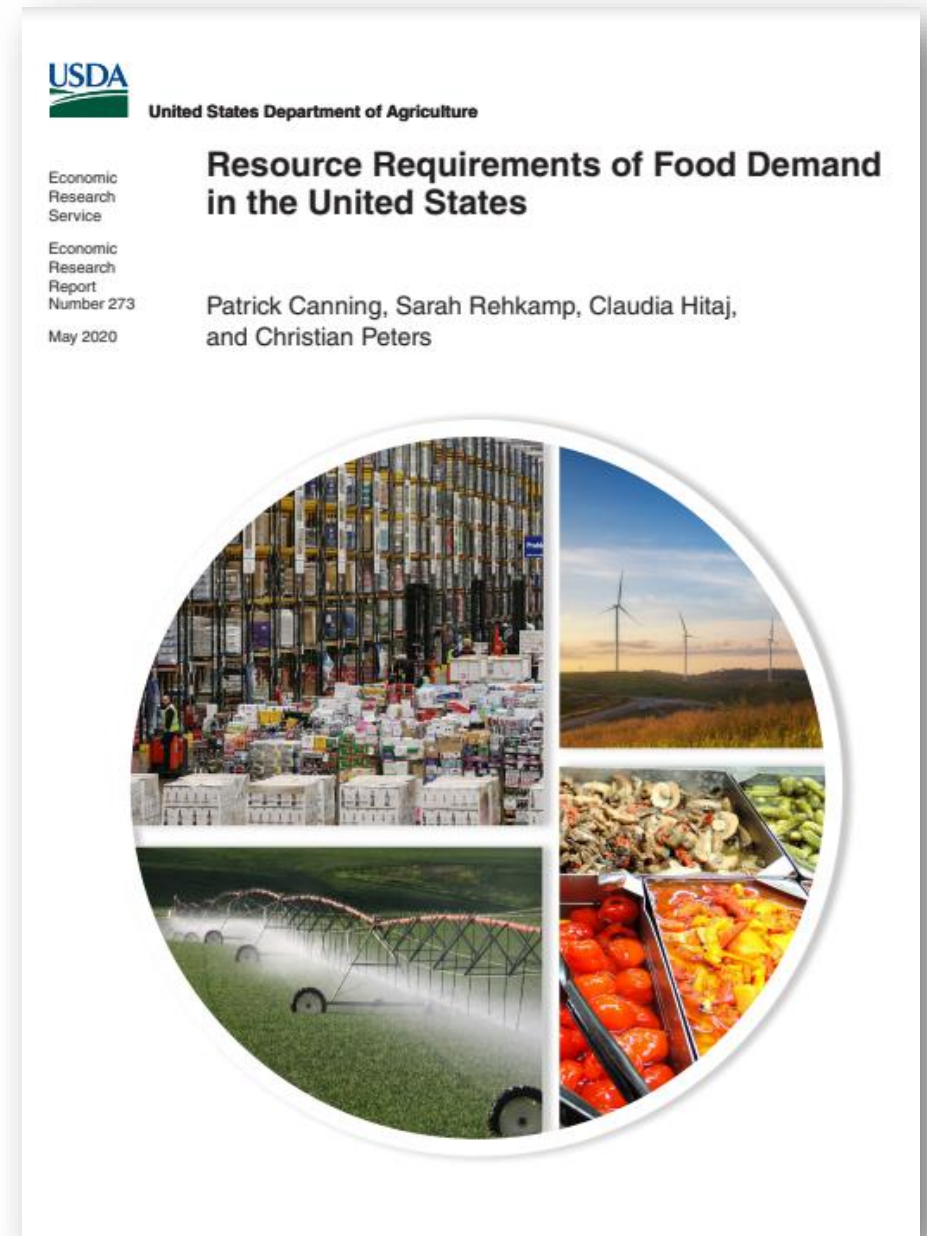
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## Tracking the U.S. Domestic Supply Chains Freshwater Use Over Time

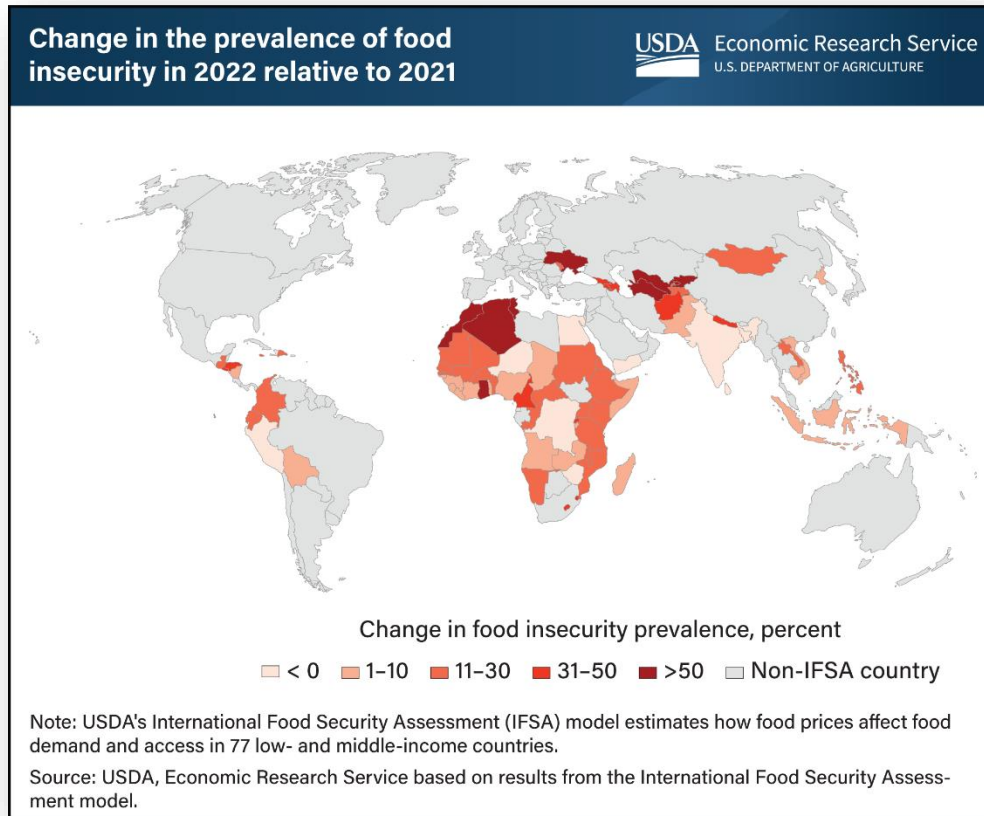
- A study on freshwater use in U.S. food & beverage production

## Resource Requirements of Food Demand in the United States

- A report on resource use linked to American food demand and framework for research to find sustainable pathways to producing an adequate, healthy food supply



# Food Security Research at a Glance



**International Food Security Assessment** – gives information on domestic prices and consumer responsiveness to changes in prices and incomes for 76 low- and middle-income countries.

**Household Food Security in the U.S.** – presents statistics from a survey that covers household food security, food expenditures, & use of Federal nutrition assistance programs.



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# Questions?

ERS research & data publicly available at:

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