



United States
Department of
Agriculture

National Institute
of Food
and Agriculture

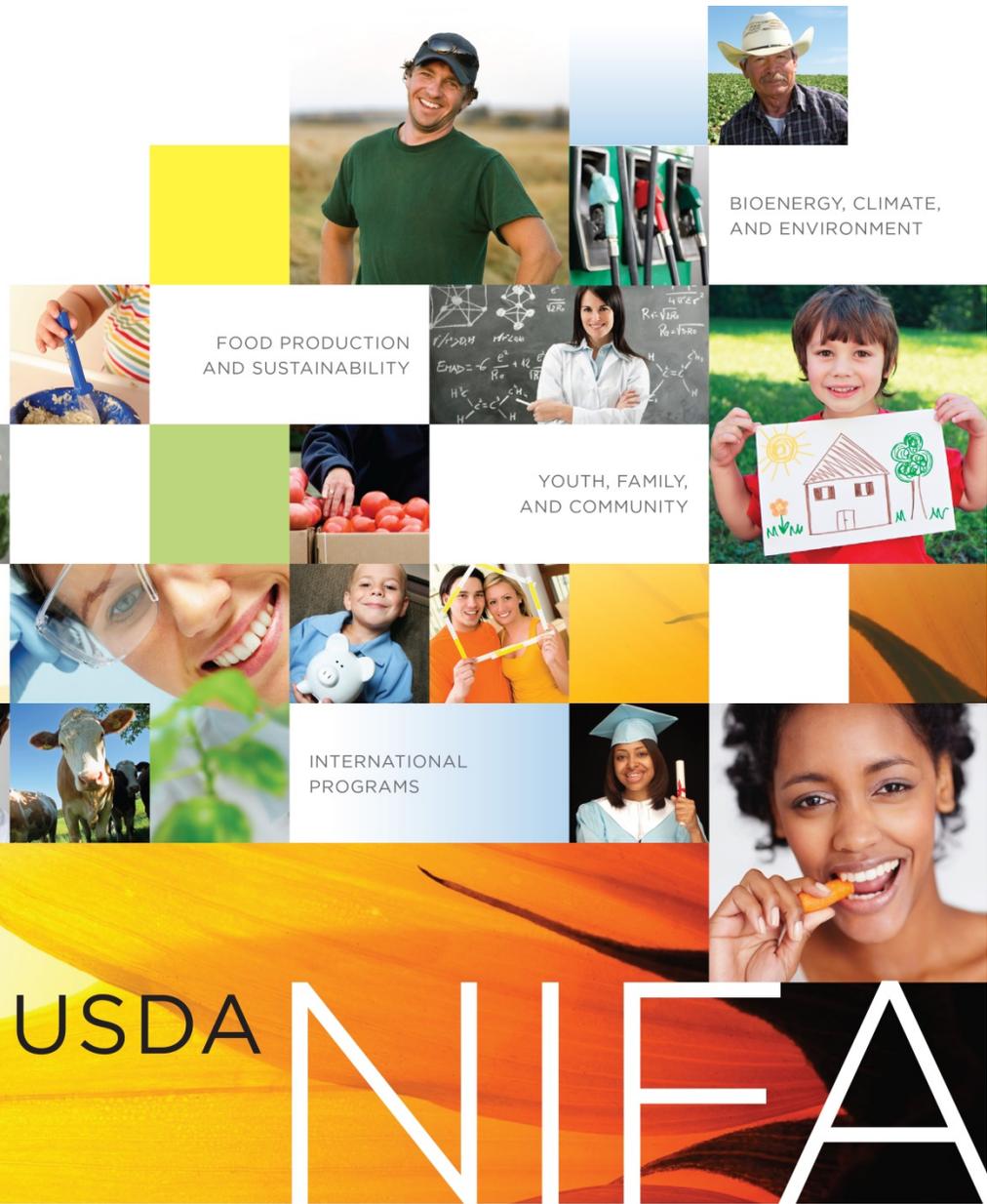
USDA EPSCoR-Like program: Food and Agricultural Science Enhancement Program (FASE) within the Agriculture and Food Research Initiative (AFRI)

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Co-Chair EPSCoR committee

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NATIONAL INSTITUTE OF FOOD AND AGRICULTURE



FOOD PRODUCTION
AND SUSTAINABILITY

BIOENERGY, CLIMATE,
AND ENVIRONMENT

YOUTH, FAMILY,
AND COMMUNITY

FOOD SAFETY
AND NUTRITION

INTERNATIONAL
PROGRAMS

USDA NIFA



AFRI Project Types vs. Grant Types

Project Types:

- Research
 - Education
 - Extension
 - Integrated — multi-function
- single function }
multi-function

Grant Types:

- Standard grants
- Coordinated Agricultural Projects (CAPs)
- Conference



FASE (Food and Agricultural Science Enhancement) Grants

- Limited to AFRI programs
- Strengthen science capabilities in research, education, and/or extension programs
- Help institutions develop competitive projects
- Attract new scientists into careers in high-priority areas of national need
- Limited to EPSCoR states*, small and mid-sized or minority-serving degree-granting institutions with limited institutional success

*19 least successful at total AFRI funding on rolling 3-year average (recalculated every year)



FASE Grant Types (15% set-aside)

Grant Types (FASE):

- New investigator grants
- Strengthening standard grants
- Strengthening CAP grants
- Strengthening conference grants
- Seed grants
- Equipment grants
- Sabbatical grants
- Fellowship grants



AFRI Foundational Program – Program Areas aligned with Farm Bill Priorities

- Plant health and production, plant products;
- Animal health and production, animal products;
- Food safety, nutrition, and health;
- Bioenergy, natural resources, environment;
- Agriculture systems and technology; and
- Agriculture economics and rural communities.



AFRI Foundational Program

- Project type – predominantly research
 - Predominantly fundamental research
- Grant types – Standard, FASE, Conference
- Program Area Priorities – generally very broad
 - don't change markedly from year to year



Fellowship Grants Program

- **Predocctoral Fellowships**
 - Technical and functional competence for predoctoral students
 - \$79,000 total (tuition, fees, supplies, travel, etc.)
- **Postdoctoral Fellowships**
 - The research independence and teaching credentials of postdoctoral students
 - \$150,000 total (primarily for salary support, expenditures other than salary support may not exceed \$30,000 per year)

AFRI Challenge Areas

- Predominantly integrated projects
- Predominantly applied research
- Program Area Priorities targeting a specific societal challenge
- Program Area Priorities generally change from year to year
- 6 Challenge Area Program RFAs
 - Childhood Obesity Prevention
 - Climate Variability and Change
 - Food Safety
 - Food Security
 - Sustainable Bioenergy
 - Water for Agriculture





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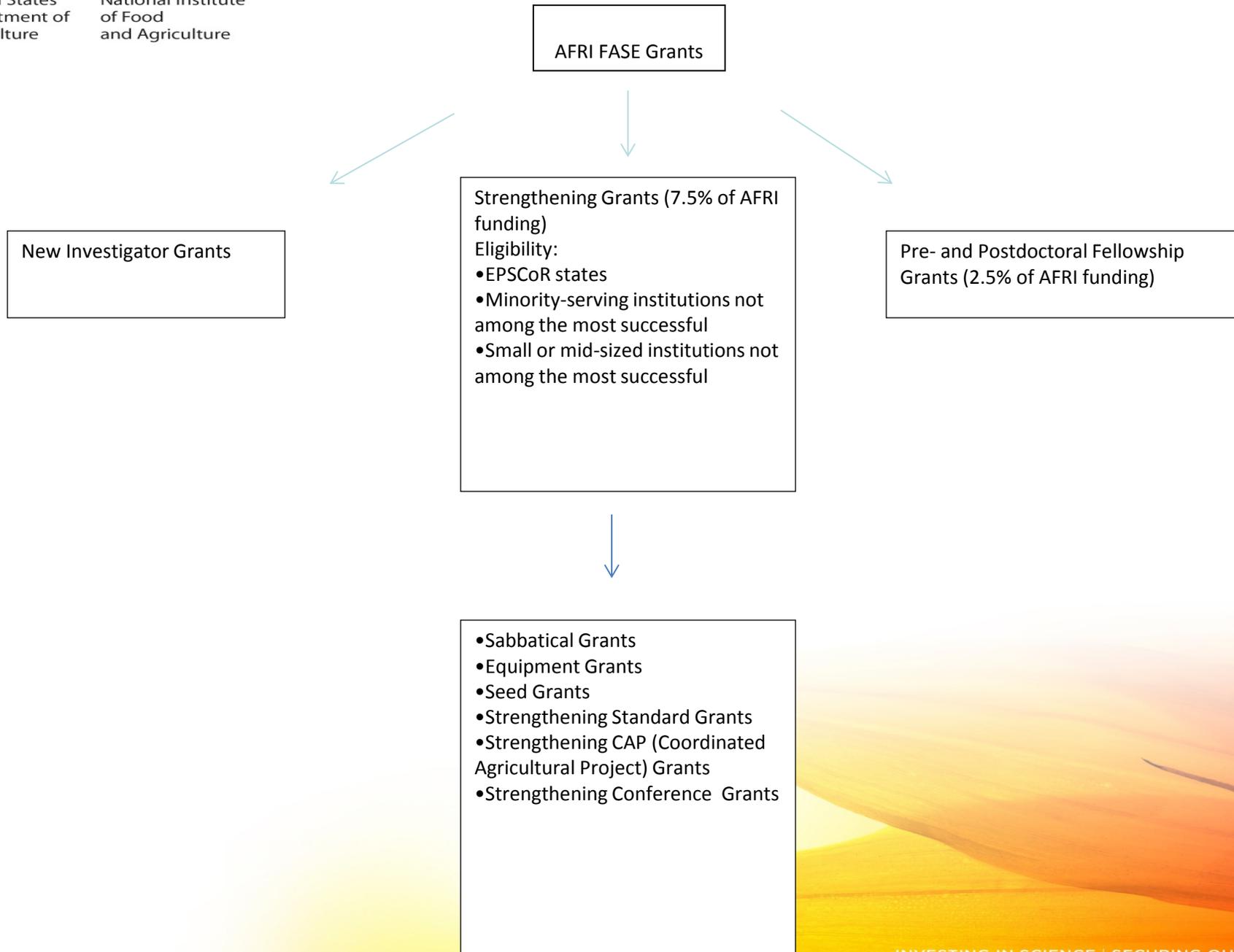
FY 2015 USDA EPSCoR States

Alabama	Montana	Utah
Alaska	Nevada	Vermont
Arizona	New Hampshire	Wyoming
Connecticut	New Mexico	DC, US territories, etc.
Idaho	North Dakota	
Kentucky	Rhode Island	
Maine	South Carolina	
Mississippi	South Dakota	



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Some example projects related to Food- Water-Energy



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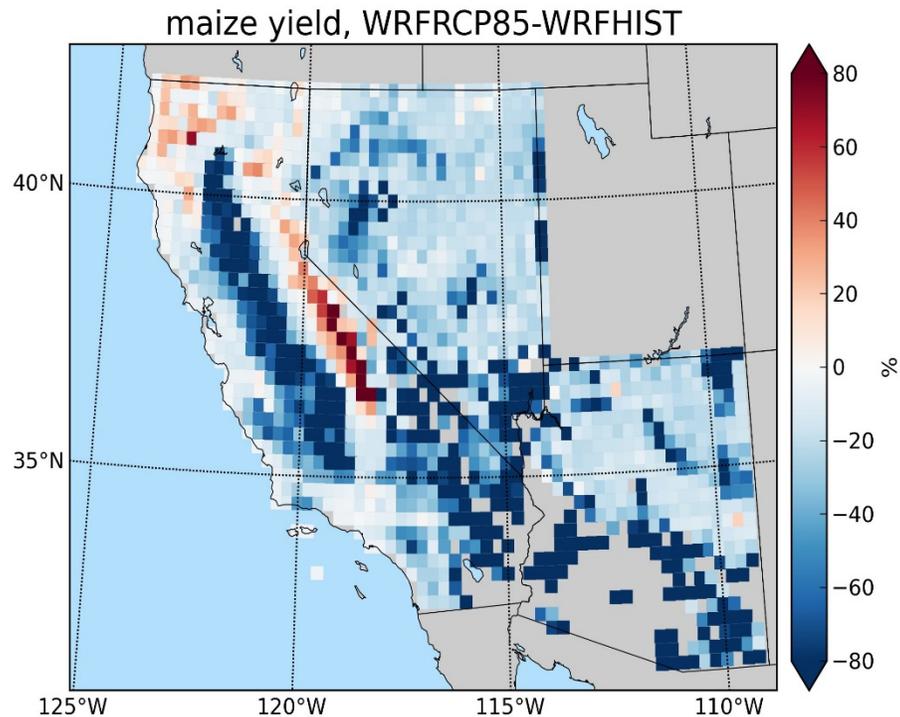


CHAPMAN
UNIVERSITY

CENTER OF EXCELLENCE IN
EARTH SYSTEMS MODELING
& OBSERVATIONS

Multi-Model Regional Simulation of Climate Change Impacts on Agriculture and Ecosystems in the Southwestern United States

M. Kafatos, S.H. Stacki, B. Myoung, J Kim, H.M. El-Askary, A.K Prasad, C. Tremback, D. Medvigys, S. Jeong, R. Walkos, and G. Asrar



- **Future projections based on RCP85 scenario shows significant decrease of maize yields, especially over the warmer climate region in the SW US**
- **Increased temperatures may be beneficial in a few cooler regions**

Migration of Agricultural Production Back to the Southeast as a Climate Change Adaptation Strategy



Richard McNider ¹, Gerrit Hoogenboom², Richard Marcus ³,
Grover Ward⁴, Amelia Ward⁴, Lee Ellenburg¹,
John Christy ¹, Jeff Mullen⁵, James Cruise ¹, Cameron
Handyside ¹

in collaboration with
Steve McNulty, Gee Sun and Peter Caldwell
U.S. Forest Service

University of Alabama in Huntsville¹, Washington State
University², California State University Long Beach³, University of
Alabama⁴, University of Georgia⁵

Agriculture
Southeastern Irrigation

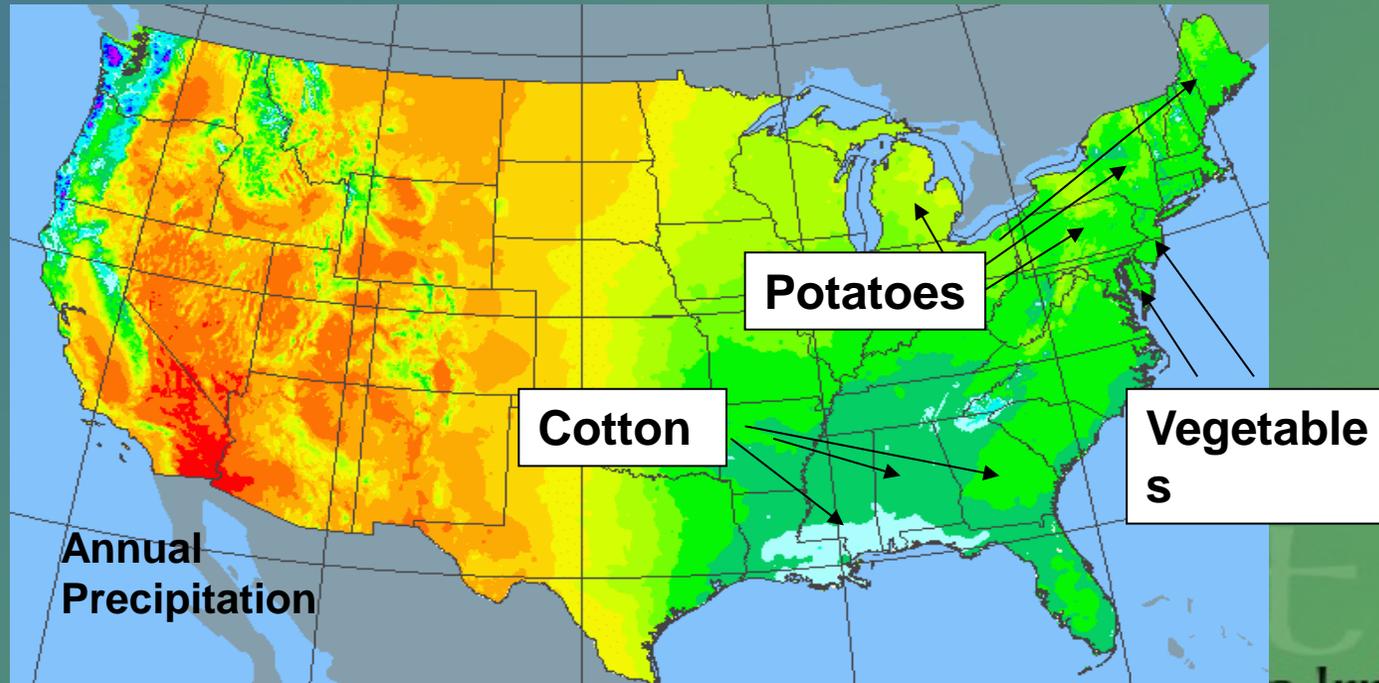
Since 1940 there has been a major migration of agricultural production in this country driven by water and transportation

Prior to 1940 Maine ,Pennsylvania and New York led the nation in potato production

Cotton was King in the Southeast

New Jersey/Del Marva Peninsula provided vegetables for urban areas

Corn was grown in almost every State for local use

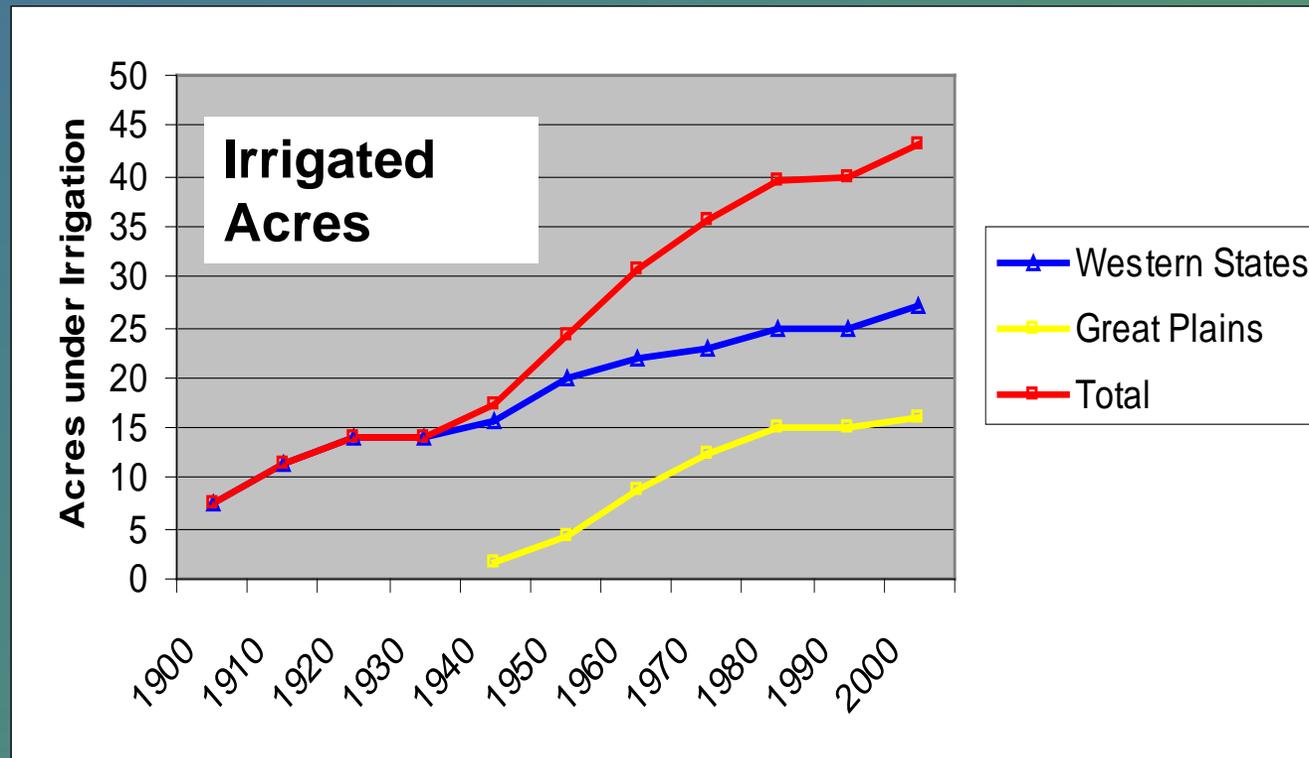


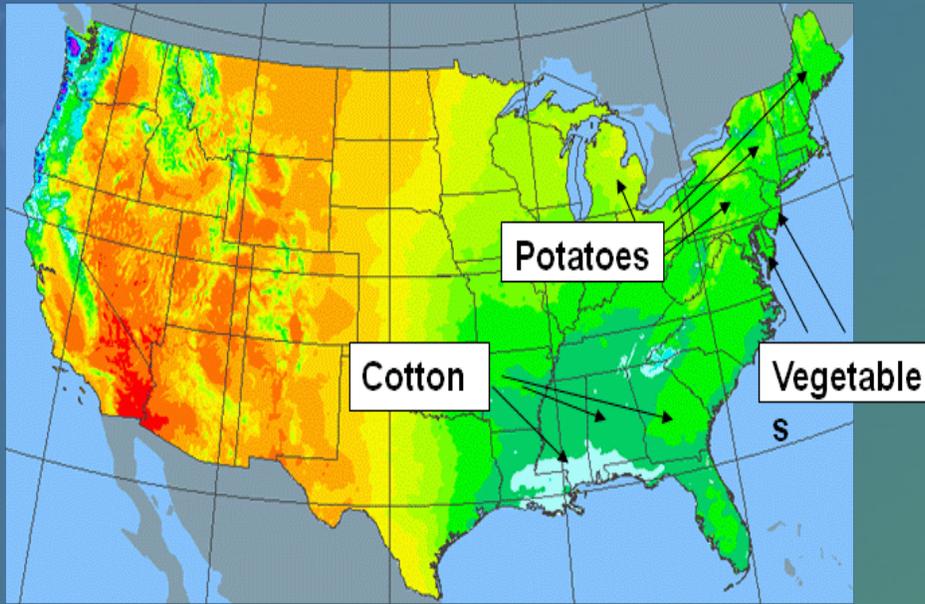
ture
southeastern Irrigation

Irrigation also drove the migration of agriculture

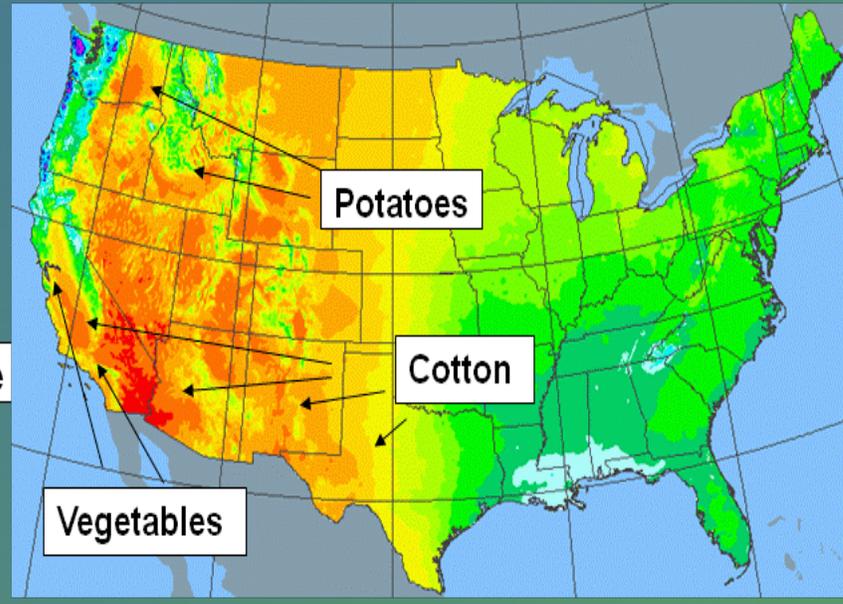
Potato production became concentrated in the Snake River Valley so that Maine, New York and Pennsylvania lost their production.

Irrigated cotton in California, New Mexico and Arizona drove Southern Cotton farmers out of business.





1930



2013

The underlying map shows precipitation.

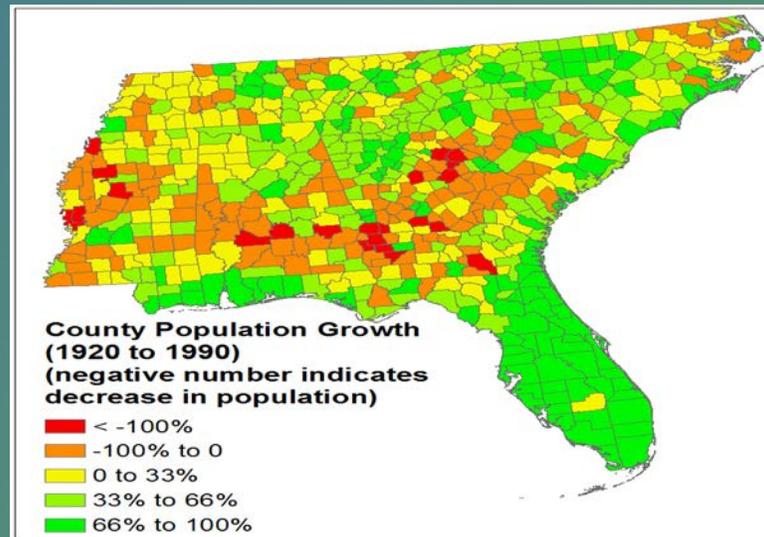
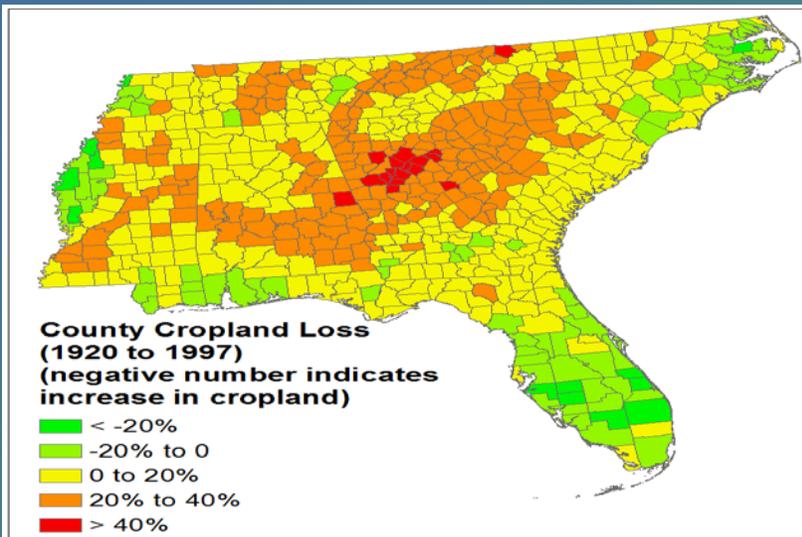
We have moved production away from the Nation's water



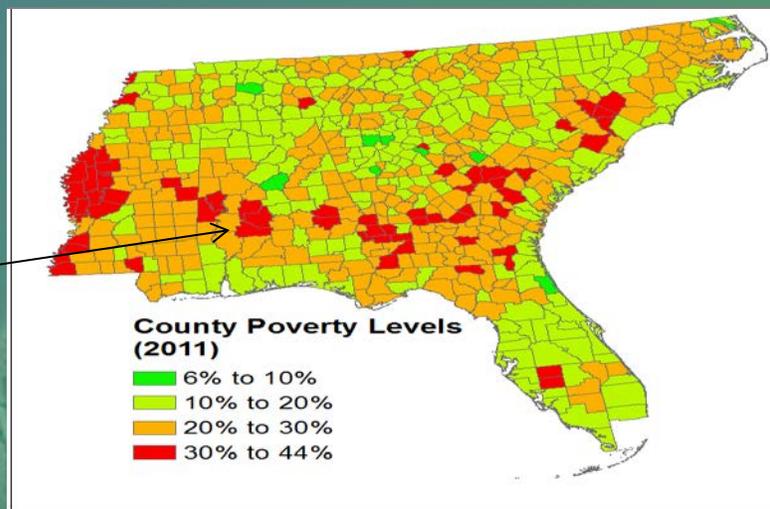
Agriculture
Southeastern Irrigation

Social Costs

These old agricultural areas of the South –
once the richest are now the poorest



Poorest
County in the
U.S.



The concentration of grain production in the Midwest and dependence on agricultural production in the arid West leaves the country's food and fiber production vulnerable to climate change.

Solution we propose is to migrate agriculture back to the East and Southeast under an irrigation-assisted rain-fed system for a more distributed production.





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Water for the Seasons:

Water Sustainability & Climate Resiliency in Snow-Fed Arid Lands

(Team: University of Nevada, Reno, Desert Research Institute, Ohio University,

Tribal Partners: Washoe,
Pyramid Lake Paiute, Fallon Paiute-Shoshone



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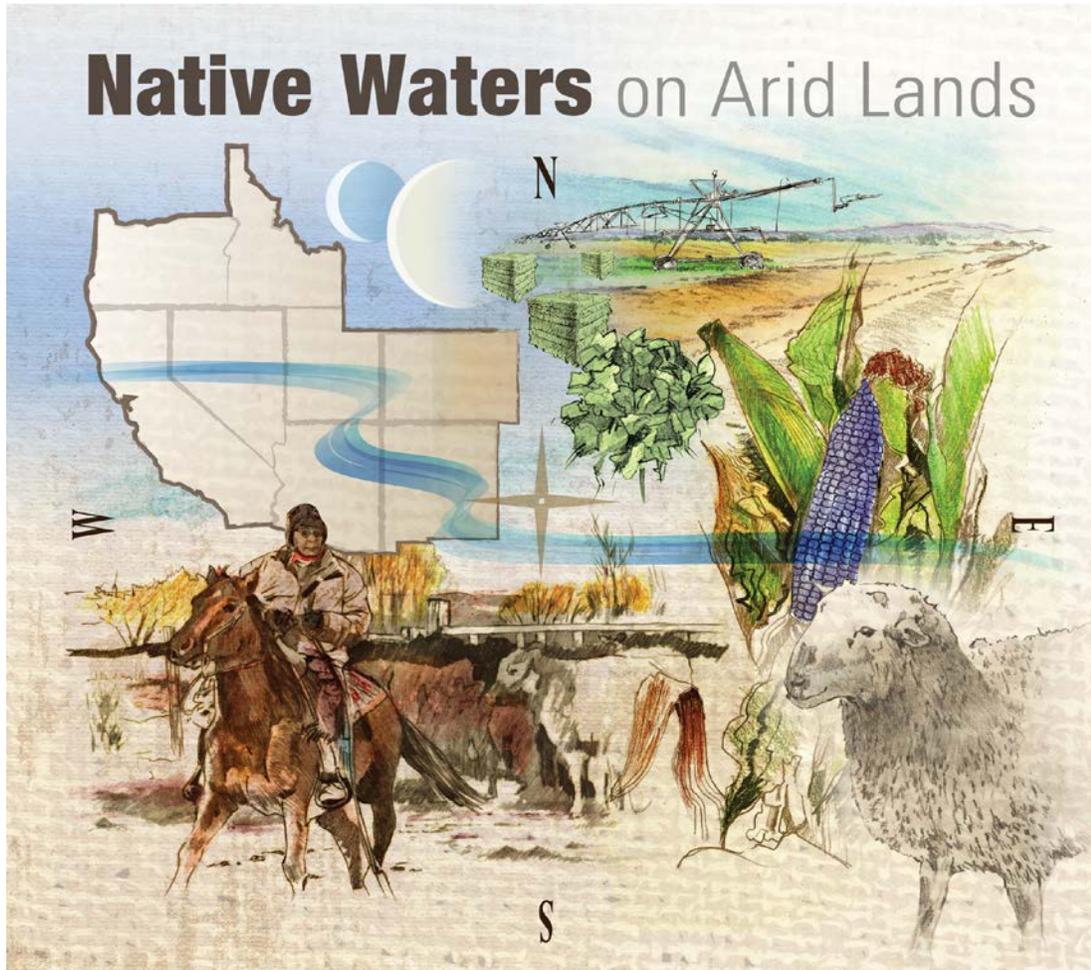
WATER For The SEASONS

A Program for Sustaining Water Resources in a Changing Climate

- Proactively collaborating to prepare the Truckee-Carson River System to meet future water management challenges.
- Integrating science and water policy research with community outreach to tribal and agricultural communities, municipalities and tribal, federal, state and local water managers.
- Assessing impacts from droughts and extremes, modeling development of water supplies and demands and creating policy options to help stakeholders evaluate and meet challenges posed by warming temperatures and unpredictable water supplies.
- Developing tools for sustainable, adaptable solutions to a changing climate.

Sponsored by:
National Science Foundation and USDA

Native Waters on Arid Lands:
Water & Agriculture on Tribal Lands
(*Team: UNR, DRI, U. Arizona, Utah State, Ohio U., USGS*)



Ron Oden/UNCE

Tribal Partners:

***Tribal Member
Researchers, AIHEC/FALCON,
NV/AZ FRTEP,***

***Tribal communities
located in:
NV, AZ, NM, UT***