

Solving Problems in a Complex World: Partnerships...Priceless

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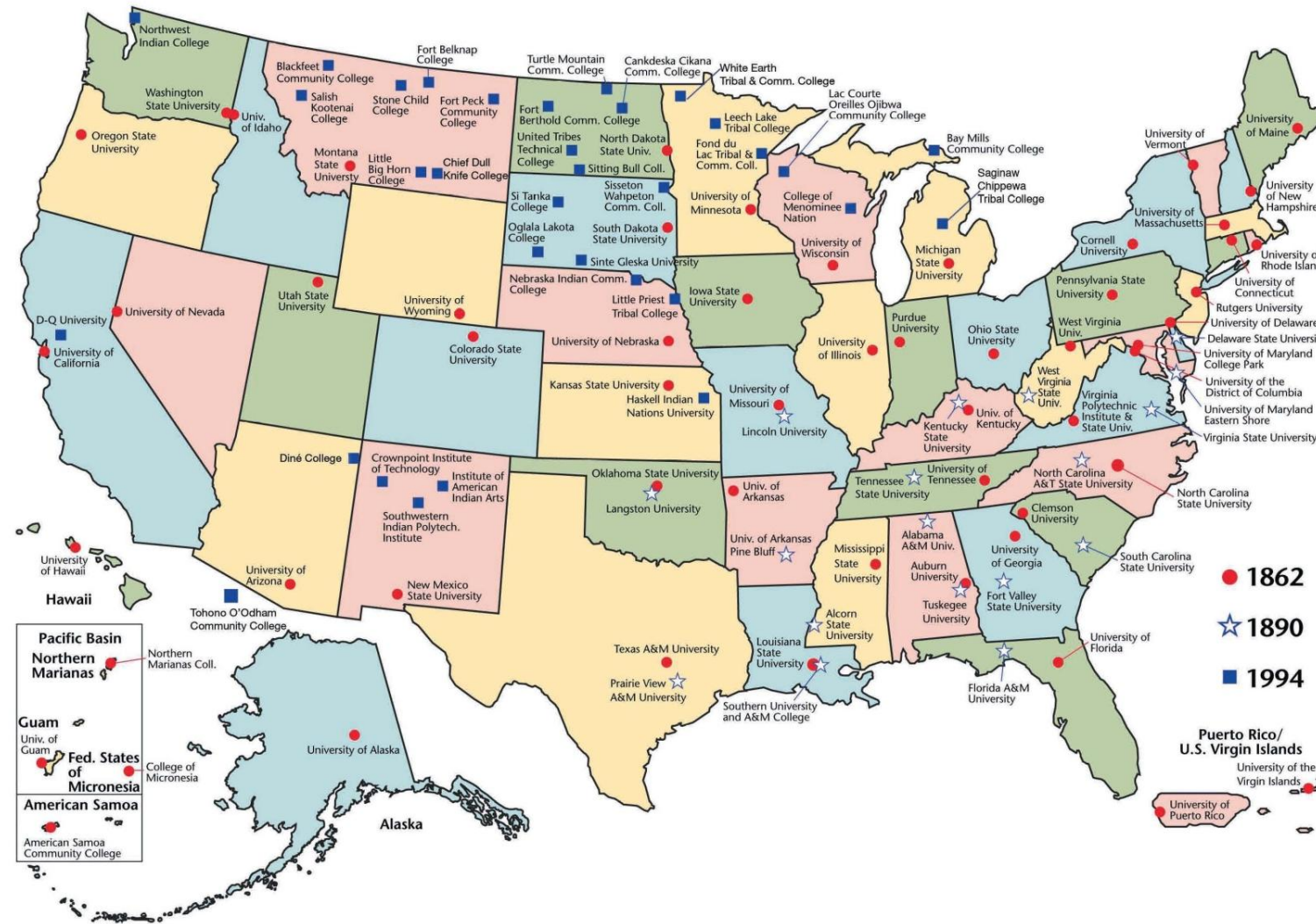
Historical Context

1862 Morrill Act established land-grant universities as colleges of agriculture and mechanic arts

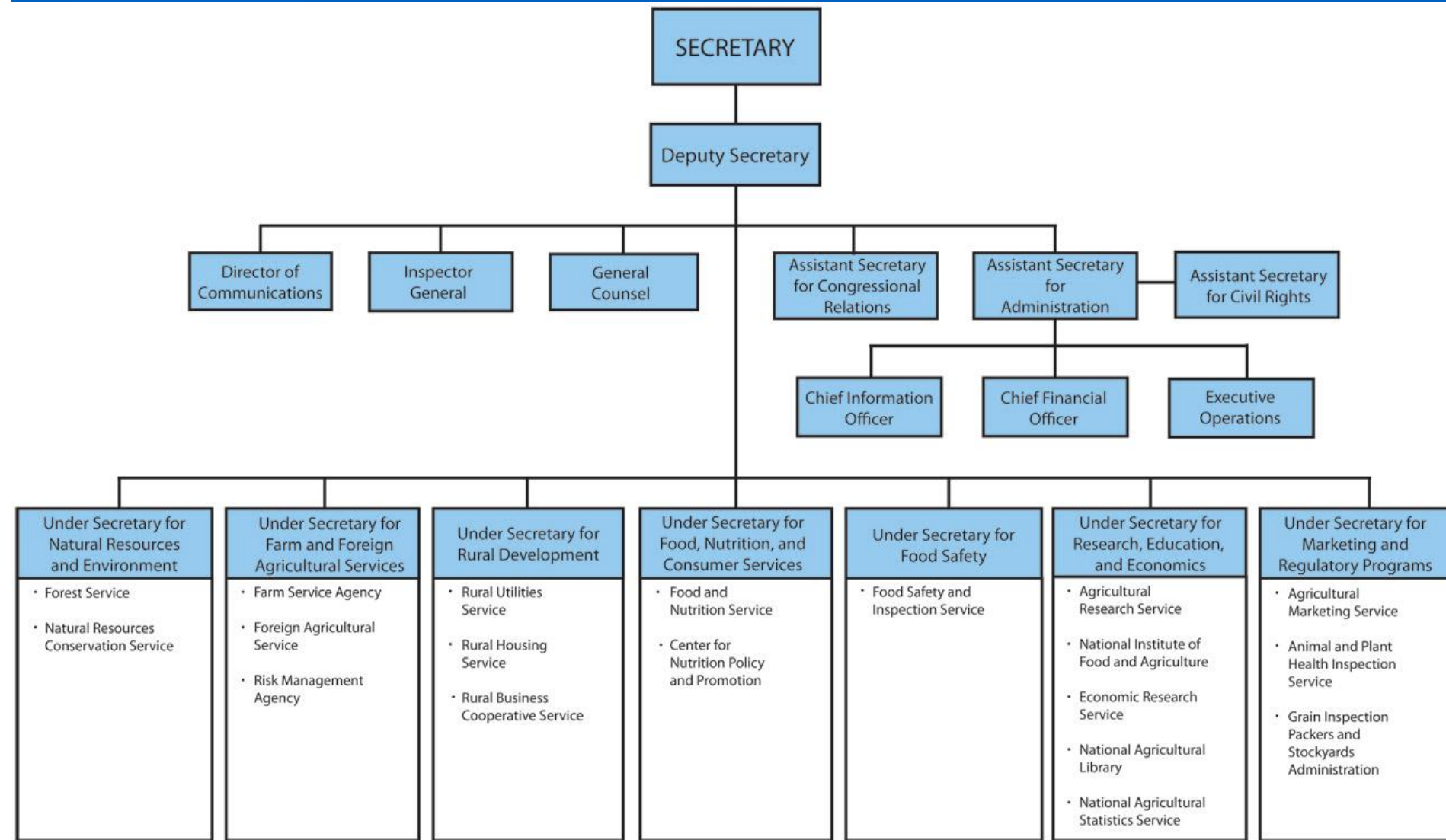
U.S. Department of Agriculture established the same year to serve as the federal partner to the LGU system (NIFA mission today)

Now, 17 agencies in USDA: land management, regulation, marketing, inspection, and R&D

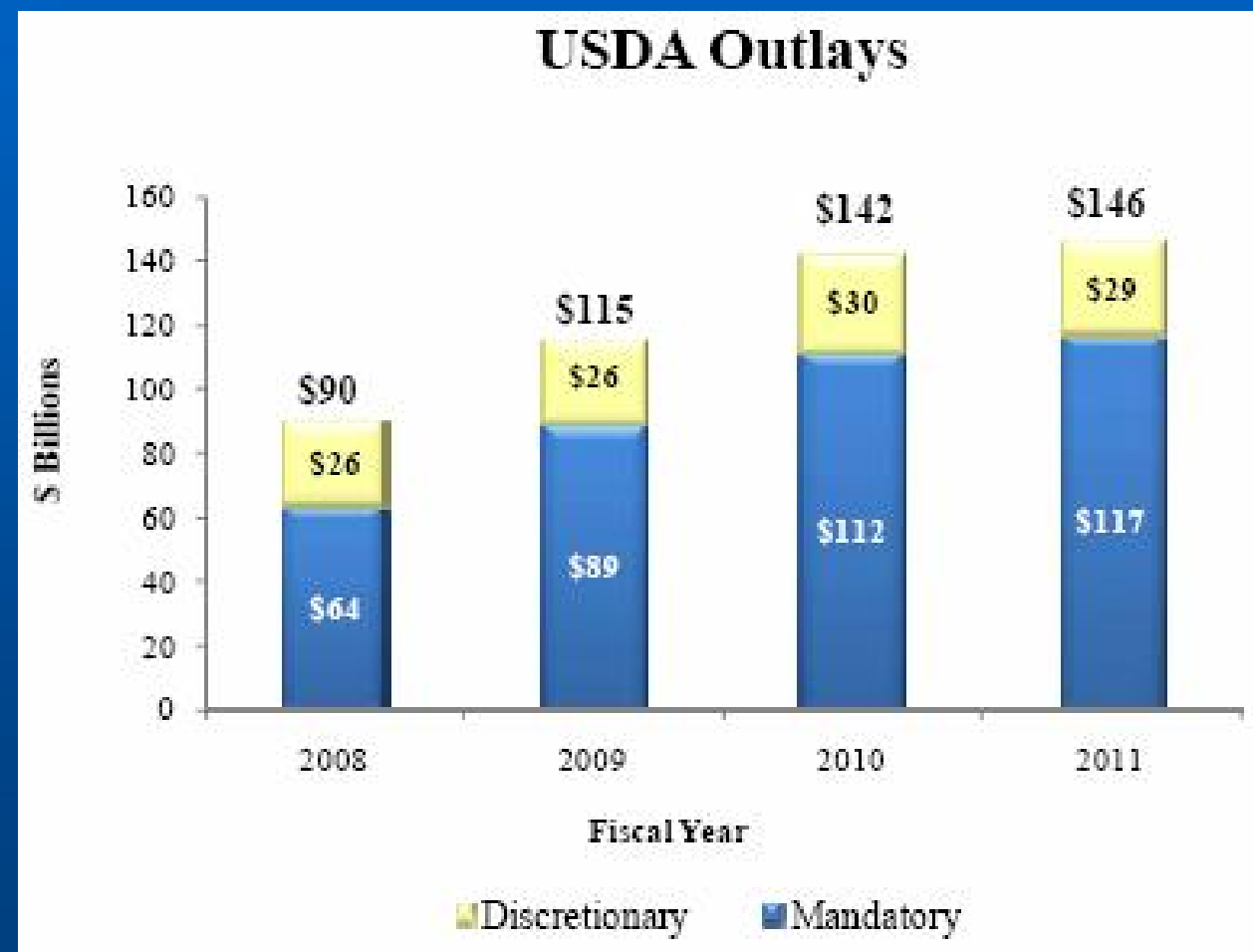
Land-Grant Colleges and Universities



USDA Today...sort of

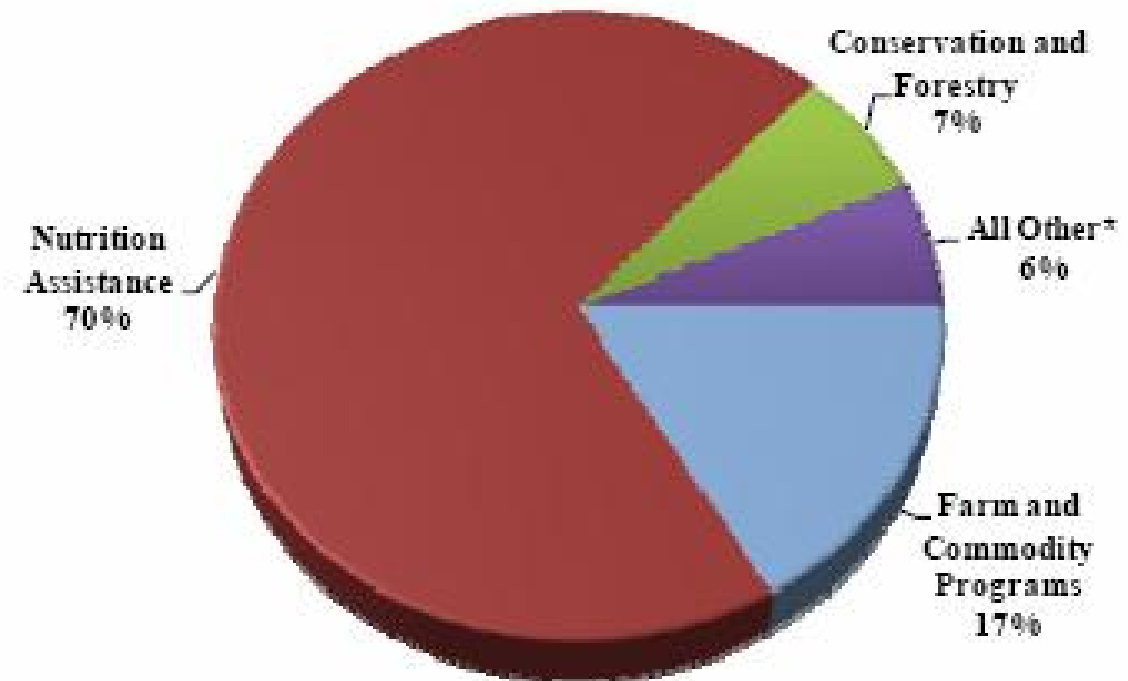


USDA Expenditures



Another View

2011 Outlays



*Includes Rural Development, Research, Food Safety, and Marketing and Regulatory functions

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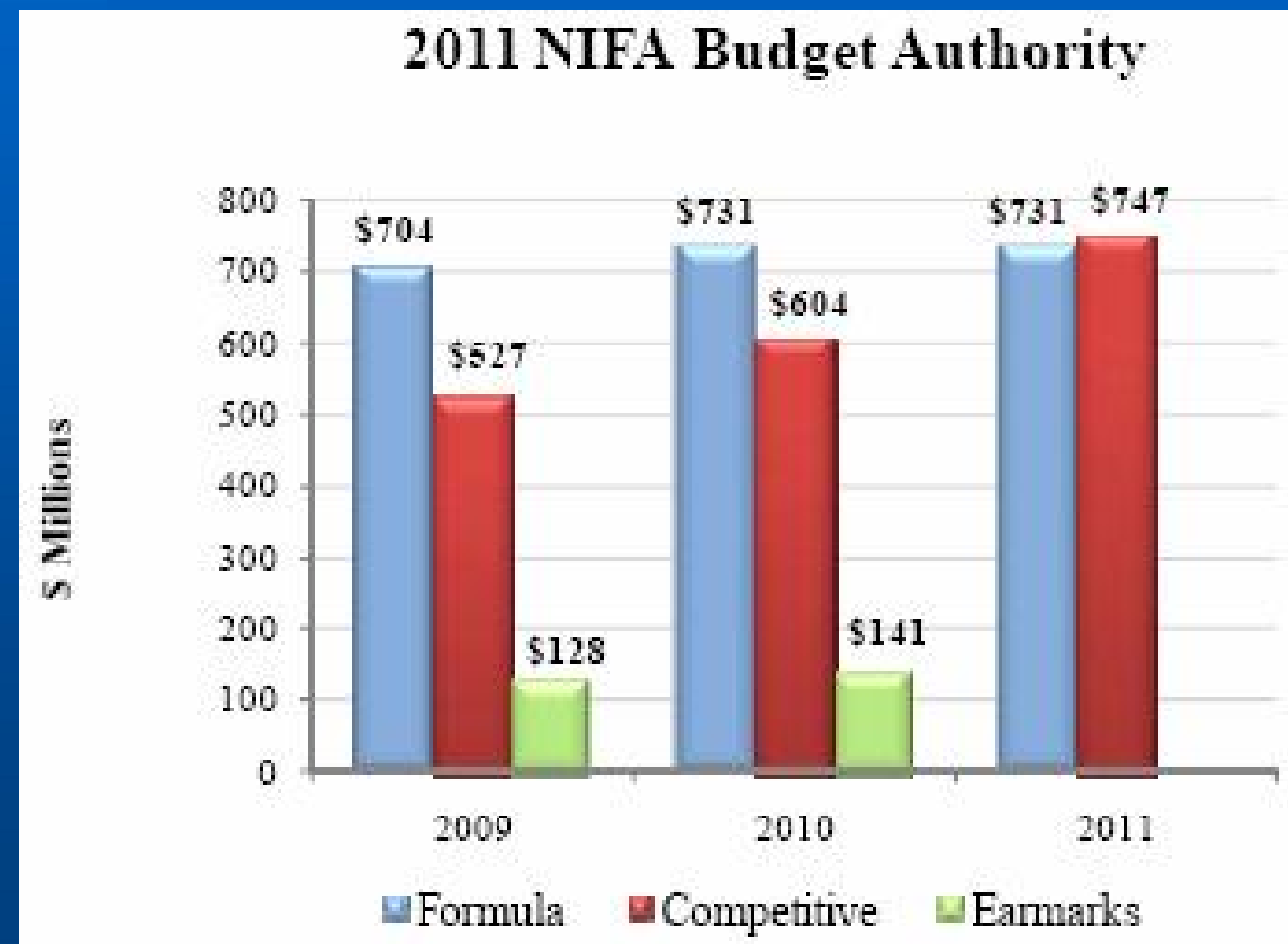


Mission: To advance knowledge for agriculture, the environment, human health and well being, and communities

Program leadership to identify, develop, and manage programs to support university-based and other institutional research, education, and extension activities

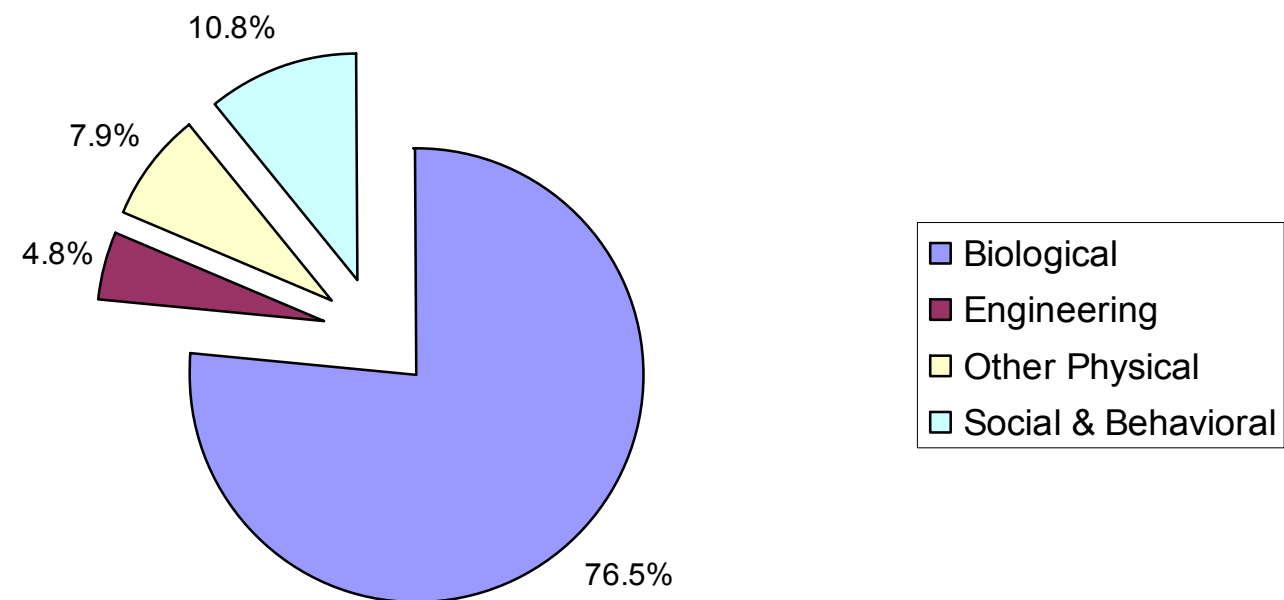
Fair, effective, and efficient administration of Federal assistance implementing research, education, and extension awards and agreements

NIFA Budget



NIFA Outlays: Fields of Science

Total Expenditures (00-06) by Field of Science



Agriculture & Food Research Initiative

\$262M appropriation in FY 2010

Funds basic and applied research, education, and extension

FY 2010: Commit \$800M to projects in five USDA challenge areas

- Keep American agriculture competitive while ending world hunger
- Improve nutrition and end child obesity
- Improve food safety for all Americans
- Secure America's energy future through renewable biofuels
- Mitigate and adapt agriculture to variations in climate

Agriculture & Food Research Initiative

**Release of
the first RFAs
are
anticipated
this week**

**Grant awards
up to \$25M
per project in
some cases,
and up to five
years
duration**

**Encourages
consortia of
institutions,
disciplines,
and
organizations**

**Integrate
basic and
applied
research with
deliberate
education or
extension
programs**

Biomass Research & Development Initiative

Joint USDA/DOE Program

\$28M in 2010 (USDA)

RFA release anticipated in early April

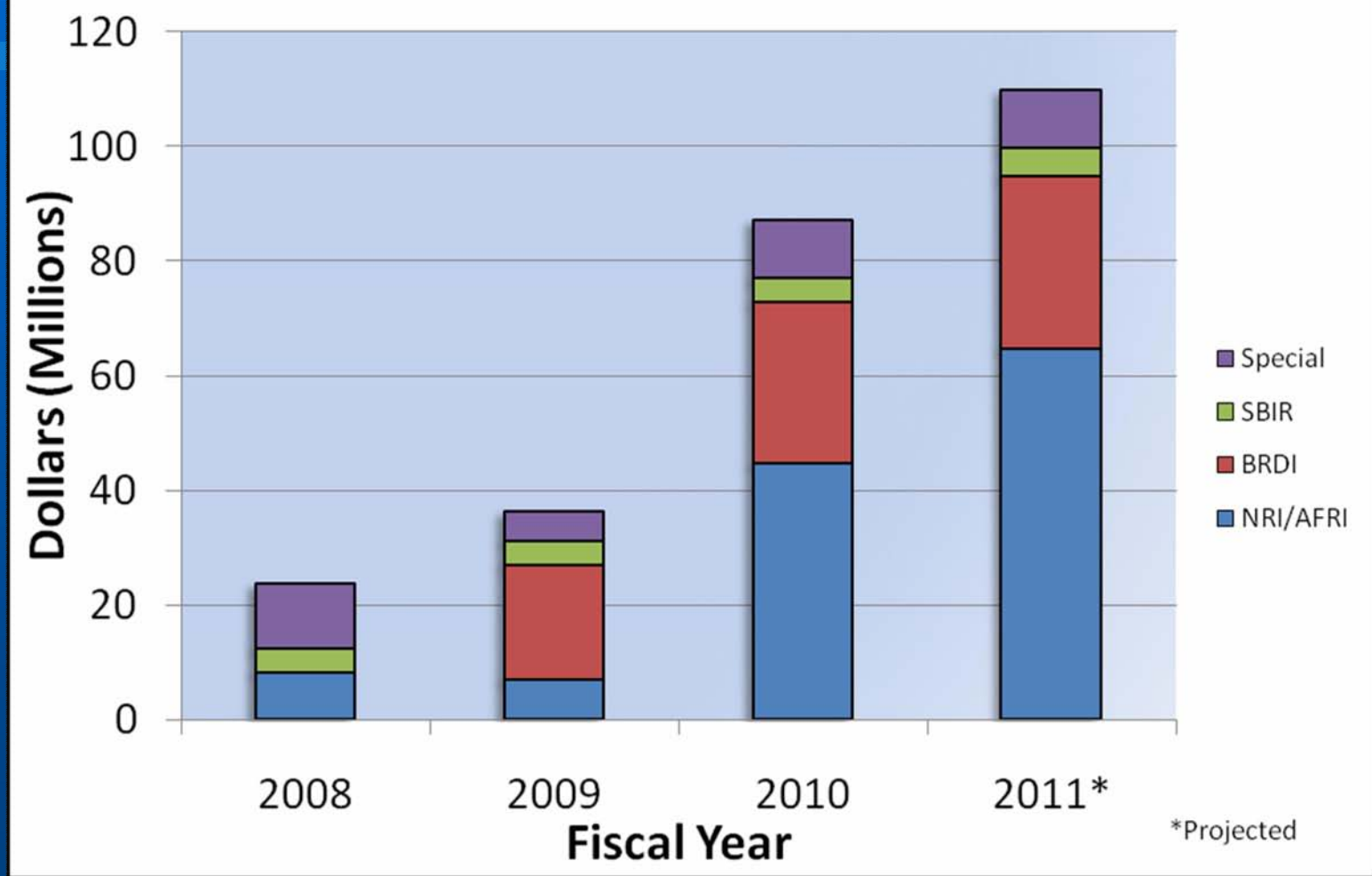
Three technical areas

- Feedstock development
- Biofuels and biobased products
- Biofuels development analysis

Emphasis on demonstration projects

Applications must involve consortia of institutions, disciplines, and technologies

NIFA Energy Programs



Small Business Innovation Research

Research for the development of a profit-making technology, product, or service

Two-phase program - feasibility and development	\$90,000 (Phase I); \$400,000 (Phase II)	Small businesses of 500 employees or less	2.5% set-aside of USDA extramural funding for research
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Specialty Crop Research Initiative

\$230 million in mandatory funding 2008-2012

Research and extension

Priority given to multi-state and multi-institutional projects

100% non-federal match requirement

Address the critical needs of the specialty crop industries by developing and disseminating science-based tools to address needs of specific crops and their regions

SCRI Legislation

**Five
focus
areas
(10% of
funds in
each
area)**

- Research in plant breeding, genetics, and genomics to improve crop characteristics
- Efforts to identify and address threats from pests and diseases, including threats to specialty crop pollinators
- Efforts to improve production efficiency, productivity, and profitability over the long term (including specialty crop policy and marketing)
- **New innovations and technology, including improved mechanization and technologies that delay or inhibit ripening**
- **Methods to prevent, detect, monitor, control, and respond to potential food safety hazards in the production and processing of specialty crops, including fresh produce**

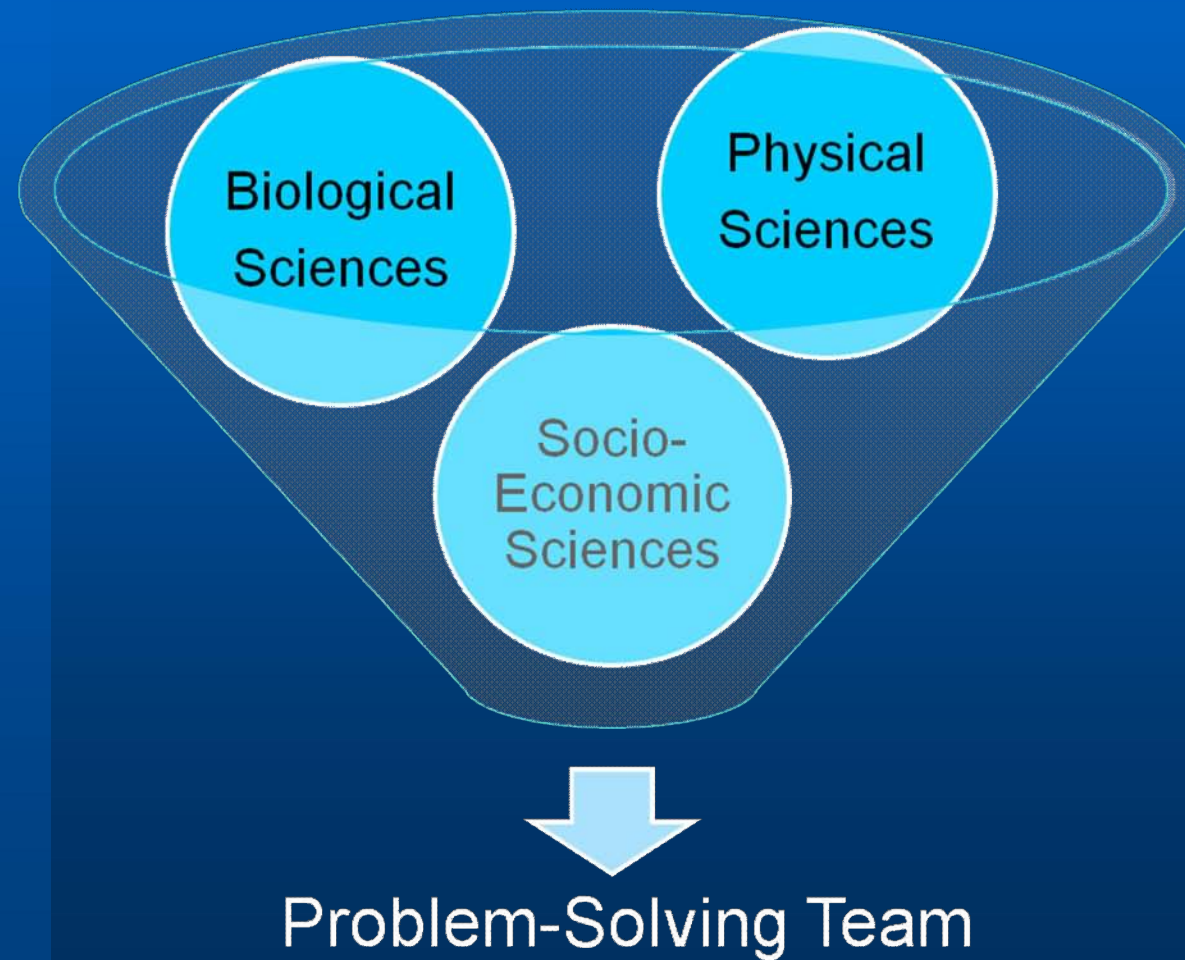
Specialty Crops

Specialty crops are defined in law as fruits and vegetables, tree nuts, dried fruits, and horticulture and nursery crops, including floriculture.

The Problem-Solving Enterprise: Systems Approach

A systems approach is any process of estimating or inferring how local policies, actions, or changes influence the state of the neighboring universe. It is a framework that is based on the belief that the component parts of a system can best be understood in the context of relationships with each other and with other systems, rather than in isolation. The only way to fully understand why a problem or element occurs and persists is to understand the part in relation to the whole.

The Problem-Solving Enterprise: Transdisciplinary Teams



SCRI Program

Sustainability
is the
foundation of
the program

Whole
systems
approaches
required

Trans-
disciplinary
teams
(biological,
physical, and
socio-
economic
disciplines)

Stakeholder
driven
objectives,
and
involvement
throughout
the life of the
project
(including
advisory
boards)

Include
specific
mechanisms
to
communicate
results
(outreach
plan)

SCRI 2008-2010 Results

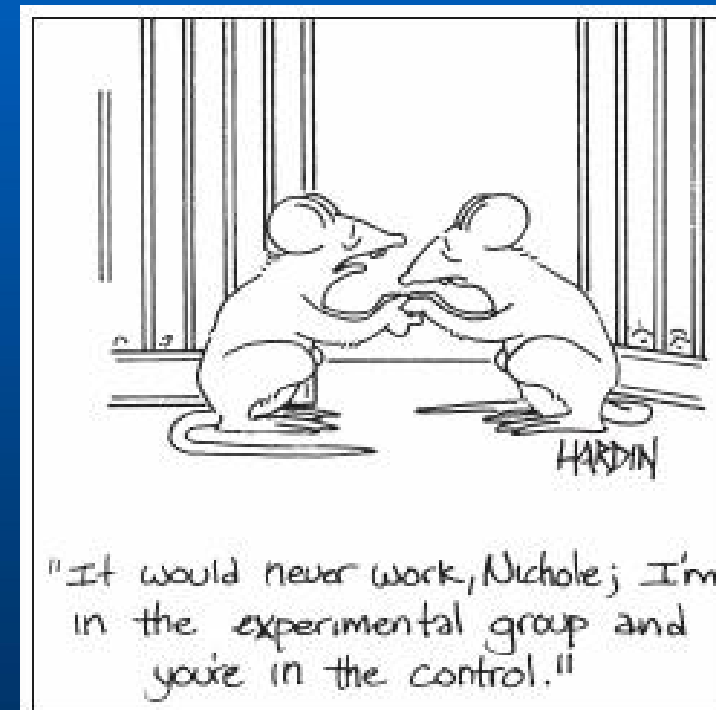
	2008	2009	2010
Applications paneled	231	209	144
Total funds requested	\$266M	\$317M	\$235M
Panels	3	5	4
Awards	27 (9)	35 (11)	30-40??
Success rate	12% (9/31)	17% (13/40)	20-30%??
Range	\$350K – \$6M	\$423K – \$5.2M	??

SCRI 2008-2009 Results

Total Funds Awarded	PB&G	PM	PP&PE	Tech	Food Safety
\$28,365,000	\$3,786,571	\$4,836,260	\$10,438,688	\$6,128,772	\$3,174,709
\$46,653,354	\$8,470,733	\$11,976,052	\$14,019,209	\$7,225,477	\$4,961,881
\$75,018,354	\$12,257,304	\$16,8123,12	\$24,457,897	\$13,354,249	\$8,136,590

Observations on Partnerships

- Not unlike other human/social partnerships: marriage, family, friendship, professional, team/club
- Many levels of engagement: administrative, programmatic, and business processes
- Notable differences in cultures and processes
- Partnerships must be crafted with meaning and intent



Summary

USDA R&D is a pico-portion of overall departmental expenditures

Within NIFA R&D, engineering has traditionally received the smallest piece of the pie

A problem-solving enterprise (vis-a-vis, a knowledge discovery enterprise) suggests a systems approach

Partnerships (collaborators, disciplines, functions, resources) are essential when applying a systems approach

A growing number of NIFA grant programs are supporting large, collaborative projects