

# **A Science Roadmap for Food and Agriculture**

*Prepared by the*

**Association of Public and  
Land-grant Universities (A•P•L•U)**

**Experiment Station  
Committee on  
Organization and Policy (ESCOP)**

*Task Force on Building a  
Science Roadmap for Food and Agriculture*

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ESCOP Social Science Subcommittee  
Washington, DC  
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*November 2010*

**[http://www.nera.umd.edu/  
escopscienceroadmapnov172010.pdf](http://www.nera.umd.edu/escopscienceroadmapnov172010.pdf)**

# Goals

- **Major directions** for agricultural science – 5-10 yrs.
- Define **needs** and set **priorities**.
- **Direction to decision makers** for planning and investing resources.
- **Support advocates** of the food and agricultural research and education system.
- **Support marketing** of the SAES system.
- **Facilitate building partnerships** for a stronger coalition to solve problems.



# Using the Roadmap

- Influence research agendas (e.g., USDA, EPA, NIH).
- Create an environment for faculty will use to think of potential research opportunities.
- Help form teams to facilitate discussion around broad societal needs and problems.
- Stimulate ongoing discussion in these seven challenge areas.
- “Raw data” for marketing tools that highlight and communicate what we do to diverse audiences.

# The Roadmap Process

- Identify Challenge Areas & Priorities
  - Delphi survey (Thanks Travis!)
  - ~ 250 Scientists and administrators
  - 13 challenges
  - Cross-walk with other organizations
  - 7 grand challenges



# The Roadmap Process

- Identify How Science Can Contribute
  - Issues, capacity, priorities
  - 80 scientists - White papers
  - Peer review
  - Base document prepared
  - Peer review



# Grand Challenges – We must .....

1. Enhance the sustainability, competitiveness, and profitability of U.S. food and agricultural systems.
2. Adapt to and mitigate the impacts of climate change on food, feed, fiber, and fuel systems in the United States.
3. Support energy security and the development of the bioeconomy from renewable natural resources in the United States.
4. Play a global leadership role to ensure a safe, secure, and abundant food supply for the United States and the world.

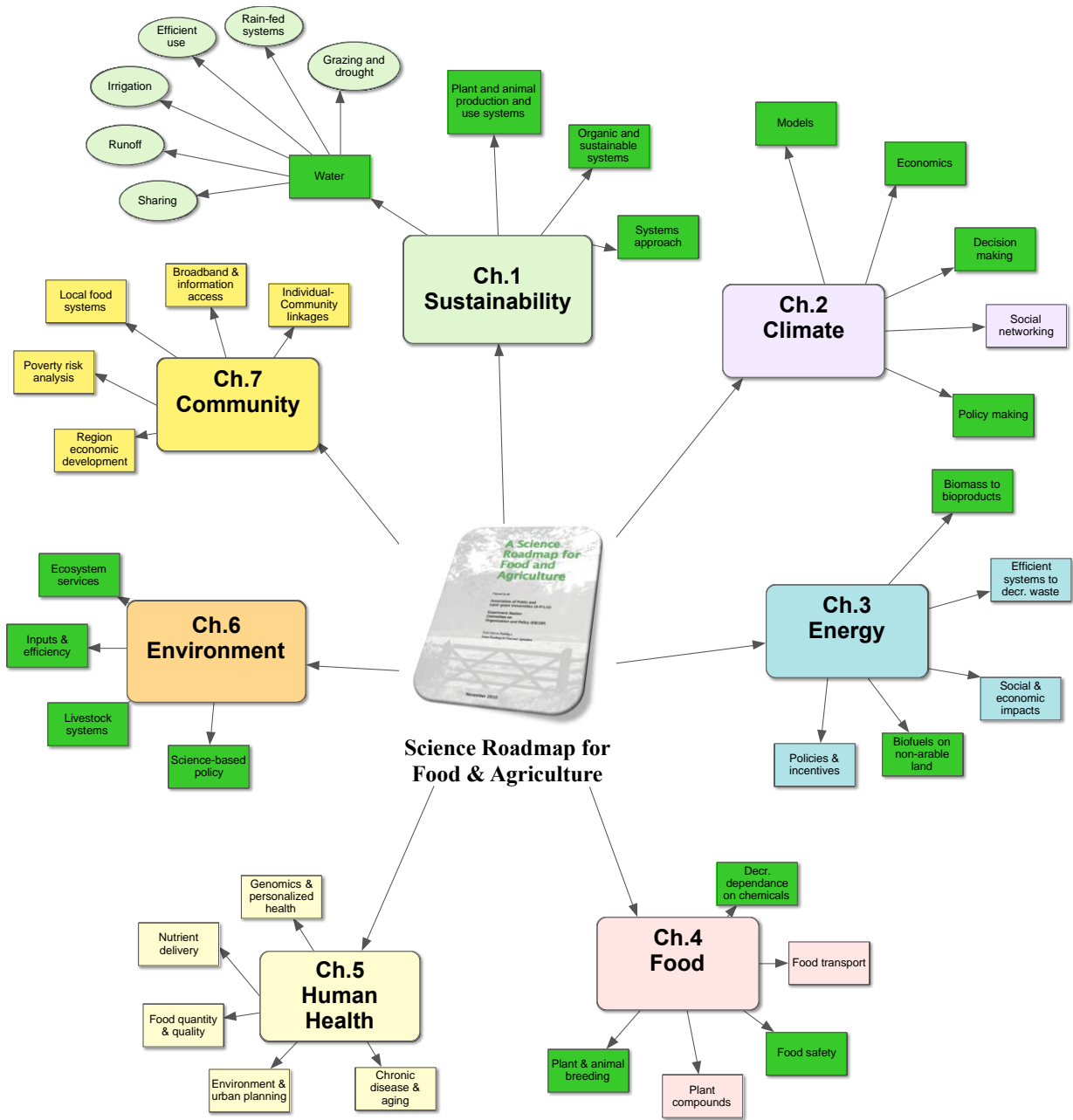


# Grand Challenges – We must .....

5. Improve human health, nutrition, and wellness of the U.S. population.
6. Heighten environmental stewardship through the development of sustainable management practices.
7. Strengthen individual, family, and community development and resilience.









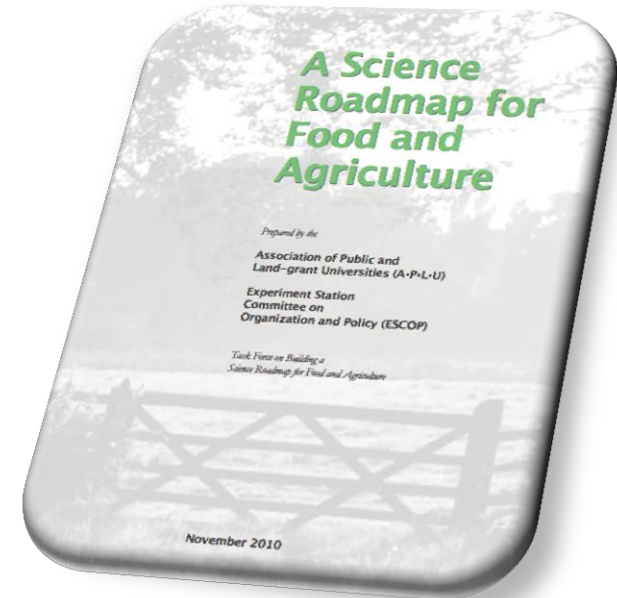
# Science Roadmap for Food and Agriculture

- **Current document**

- Seven Grand Challenges
- 35 objectives
- Distributed and available electronically

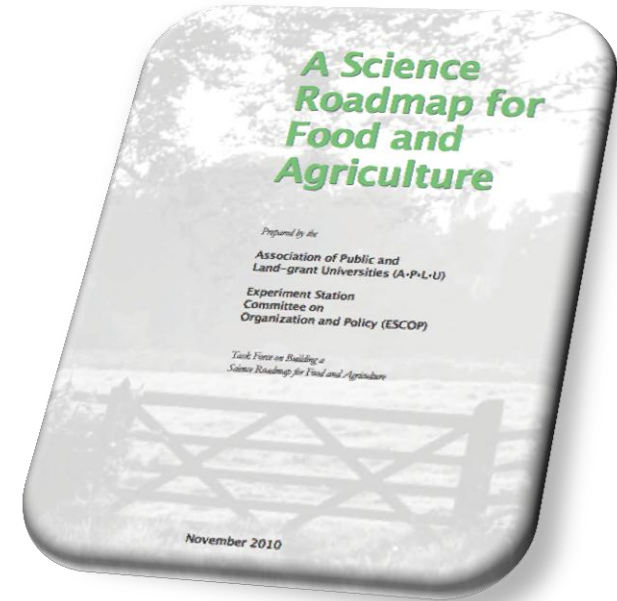
- **Needs**

- More accessible to primary audiences (legislators, sponsors, stakeholders)
- Common language
- Quickly understand direction and focus
- Prioritized objectives (linked to original 7/35)



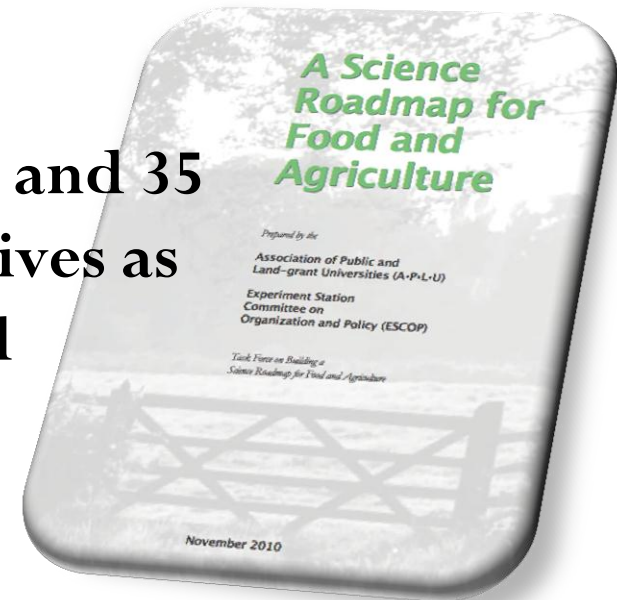
# Science Roadmap for Food and Agriculture

- **Final products**
  - Original Roadmap
  - Synthesis paper - shorter and more accessible
  - Brochure or card that can be easily carried and disseminated
  - Web sites



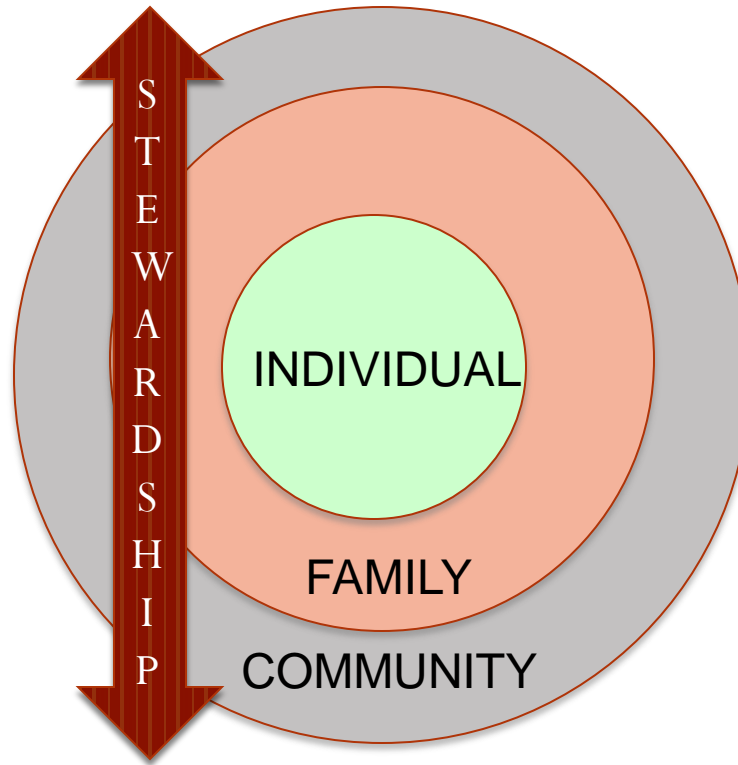
# Science Roadmap for Food and Agriculture

- Synthesis paper takes 7 challenges and 35 objectives to 12 prioritized objectives as a result of system-wide survey and creates 3 overarching focus areas
- Overarching areas
  - Food Security and Human Health
  - Economic Growth and Job Creation
  - Sustainable Environment and Natural Resources
- National and global focus and real and political imperatives associated with these areas



# Grand Challenges Revisited

FOOD - ENERGY - ENVIRONMENT



RESILIENCE - SUSTAINABILITY

# The social sciences overlay each of the grand challenges

- How do all of the Challenges interact and affect one another esp. as they relate to social science?
- How can the social sciences impact technology development?
- How can the social sciences impact commercialization (i.e., bring technology and products to market and create jobs)?
- What are the elements of a “social life cycle analysis” (i.e., social impacts) associated with the Grand Challenges?
- How is social science impact defined relative to the Roadmap?
- Is there the appetite to transition a larger part of the social science portfolio to augment the technical/biological aspects of challenges/themes?

# Active System Engagement

- Databases
- Review panels
- Responding to stakeholder input opportunities
- Review the USDA and ESCOP Grand Challenges for ways to fit into all of the areas
- Active role to engage existing and newly forming teams
- Active role in forming new teams
- Actively engage APLU structure
- Impact statements that relate social science that affect rural AND urban. What's the return on investment?

# USDA Strategic & Action Plans

## Goal 1. Local and Global Food Supply and Security

Subgoal 1A. Crop and Animal Production

Subgoal 1B. Crop and Animal Health

Subgoal 1C. Crop and Animal Genetics, Genomics, Genetic Resources, and Biotechnology

Subgoal 1D. Consumer and Industry Outreach, Policy, Markets, and Trade

## Goal 2. Responding to Climate and Energy Needs

Subgoal 2A. Responding to Climate Variability

Subgoal 2B. Bioenergy/Biofuels and Biobased Products

## Goal 3. Sustainable Use of Natural Resources

Subgoal 3A. Water Availability: Quality and Quantity

Subgoal 3B. Landscape-Scale Conservation and Management

## Goal 4. Nutrition and Childhood Obesity

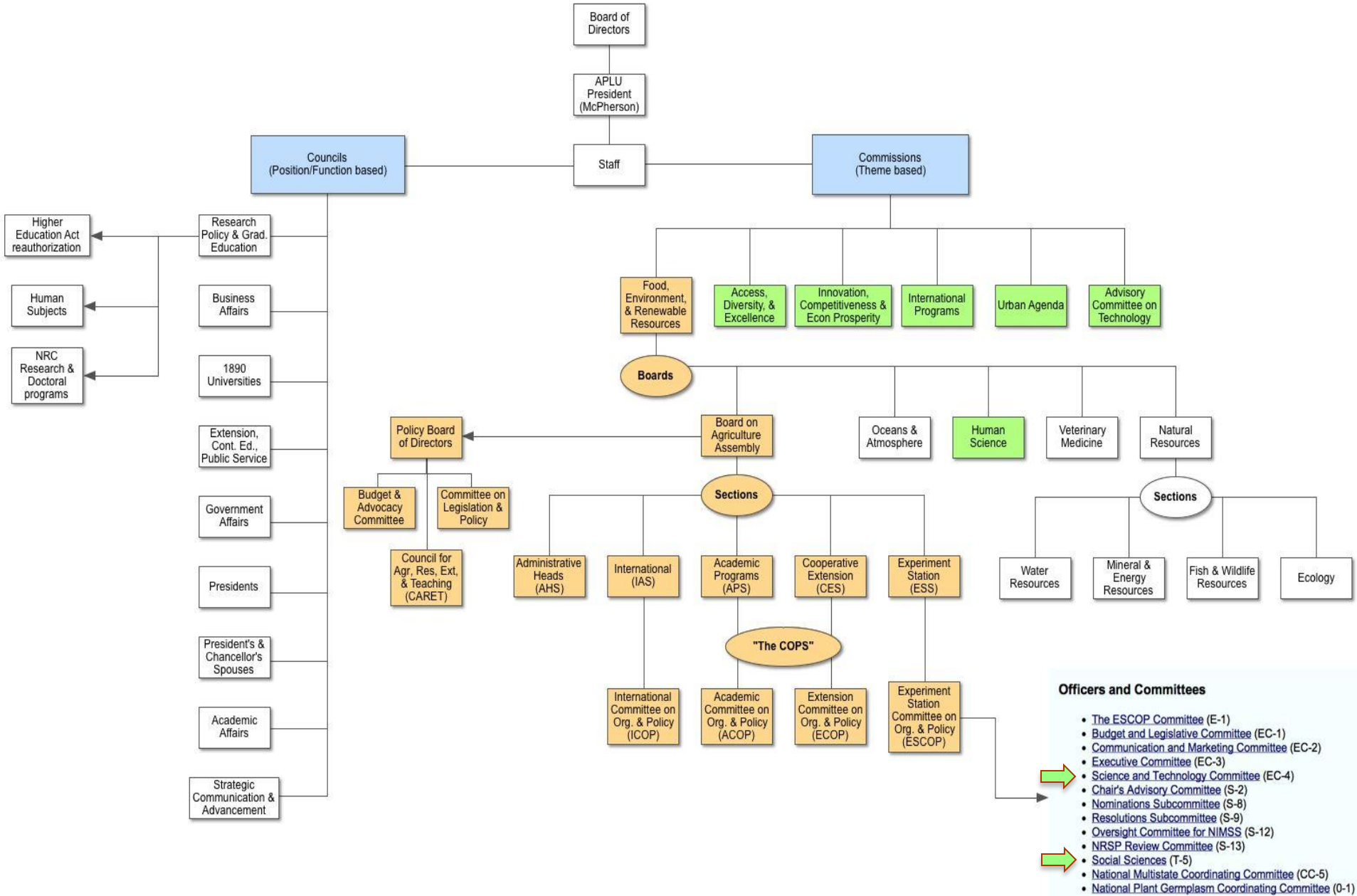
## Goal 5. Food Safety

## Goal 6. Education and Science Literacy

## Goal 7. Rural Prosperity/Rural-Urban Interdependence



# Association of Public & Land-grant Universities



# Impact



## North Central Extension Community Development Programs, 2011: Over \$180M of Impacts and 16,090 Jobs Created or Saved

*Executive Summary*

Operating as a team, state Extension leaders from the twelve North Central 1862 land grant universities developed common indicators for reporting the impacts of community development educational programs. Each partner university selected a subset of the indicators for reporting. The following table presents the most commonly used indicators: Thus, the impacts of our educational programs reported here, while impressive, are *conservative estimates*.

<b>North Central States 2011 Impact Indicators</b>		
	<b>Total</b>	<b>States Reporting</b>
Number of participants reporting new leadership roles and opportunities undertaken	8,330	9
Number of community or organizational plans developed	2,005	9
Number of community and organizational, policies, plans adopted or implemented	1,780	11
Number of businesses created	604	8
Number of jobs created	8,512	9
Number of jobs retained	7,578	7
Dollar value of programs and activities initiated/completed	\$50,584,275	6
Dollar value of grants and resources leveraged/generated by communities	\$64,765,267	10