

# Agricultural Research Priorities US Innovation System Coordinating Mechanisms

USDA  
Agricultural Research Service  
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# Presidential Priorities

## Presidential Council on Science and Technology

### USDA (Research) Priorities

### USDA-ARS

- STEM enhancement, Open Data/Gov/Science, Climate Change



- New Pests, Pathogens, invasives, water use efficiency, AG environmental footprint, climate change, bioenergy production management, safe & nutritious food, global food security (PCAST)



Office of Science and Technology Policy

- Local and global food supply and security, responding to climate variability & bioenergy/biobased products, water availability/quality/quantity, landscape scale conservation and management, nutrition & childhood obesity, food safety



- Food security and hunger, sustainable energy and bioproducts, food safety, climate change/sustainability, human nutrition & obesity

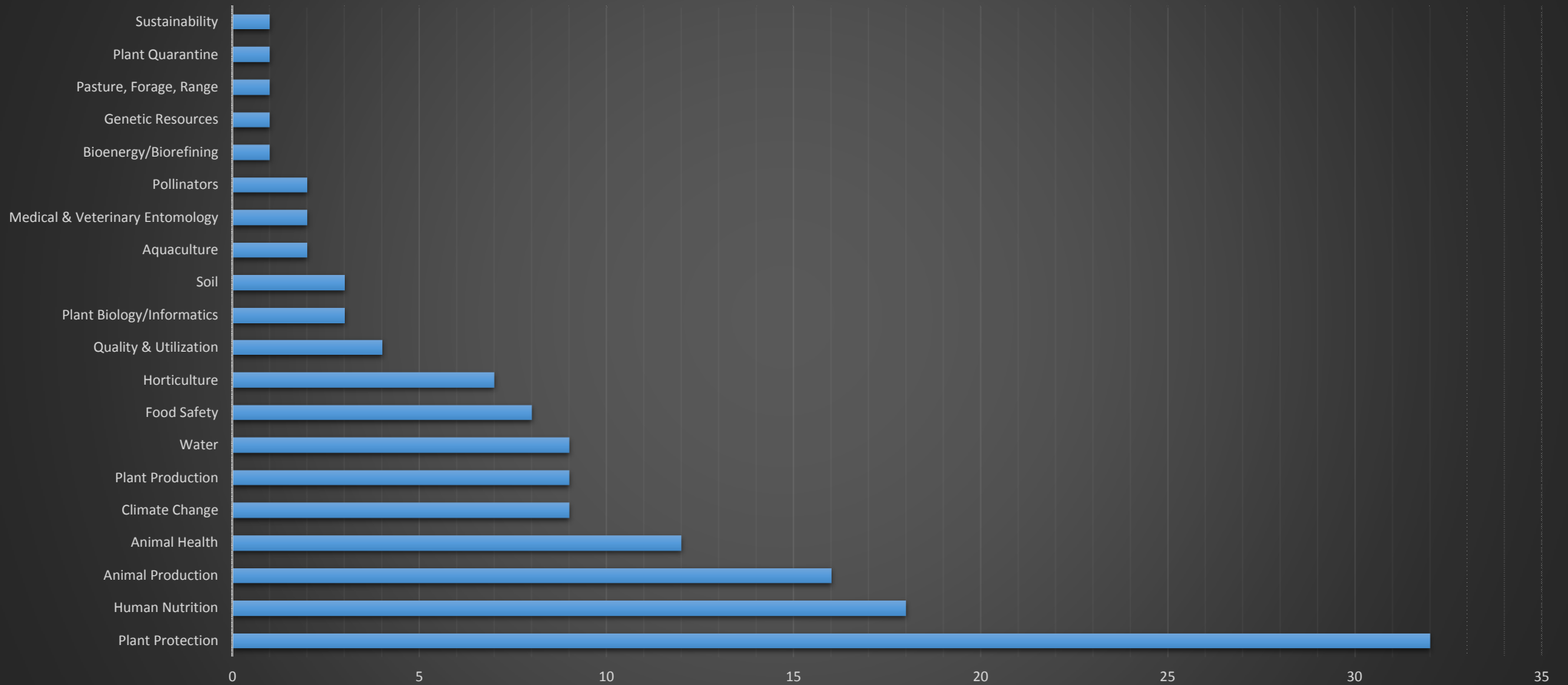


# 2016 Requested Budget- new initiatives

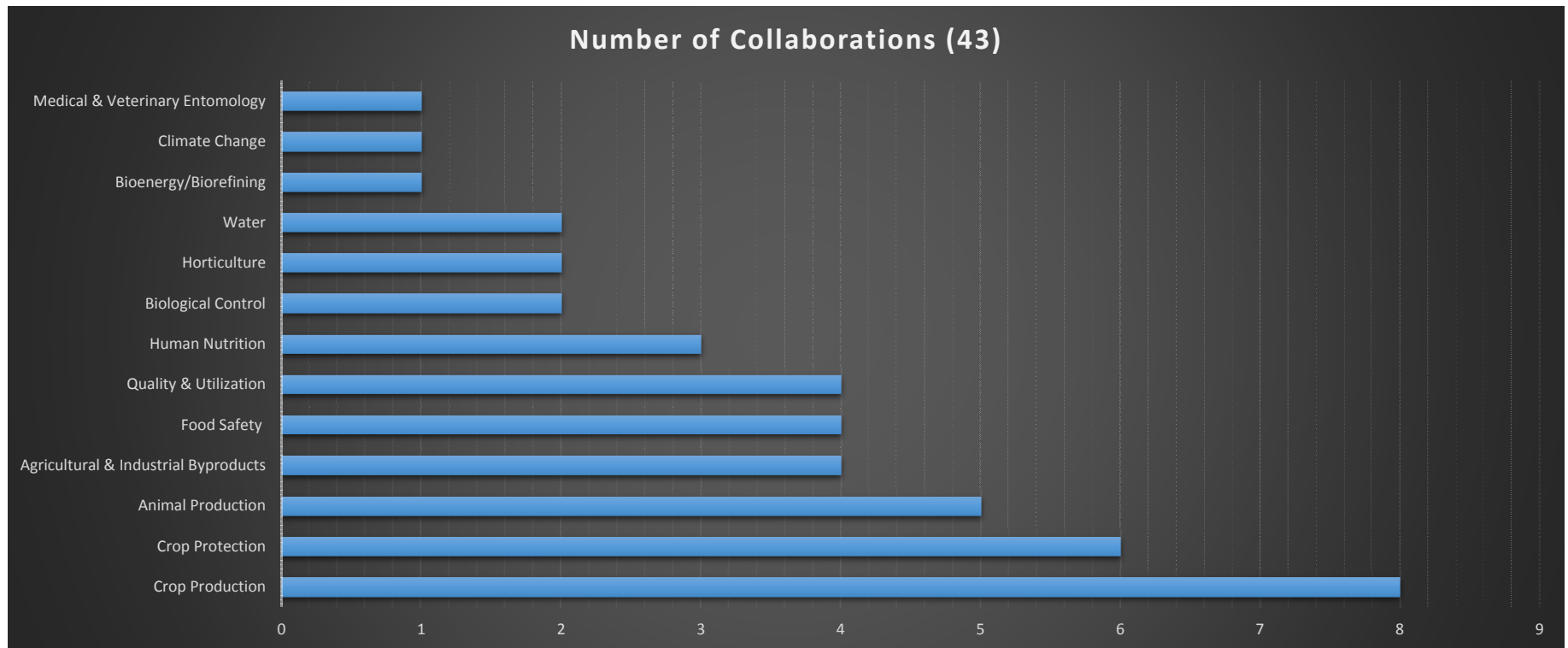
- Translational Crop & Livestock Genetics
- Climate Change Resilient Crops
- Antimicrobial Resistance
- Reducing Vulnerability to Climate Change
- Improving Agricultural Sustainability
- Sustainable Small Farms
- Pollinator Health and Colony Collapse Disorder
- High value horticulture varieties and plant protection for greenhouse/urban environments
- Big Data, Earth Sciences and Earth Observation
  - Data hub, tools, literature collection, network participation, IT infrastructure

# Canada Collaboration Trends 2014

Number of Collaborations (141)

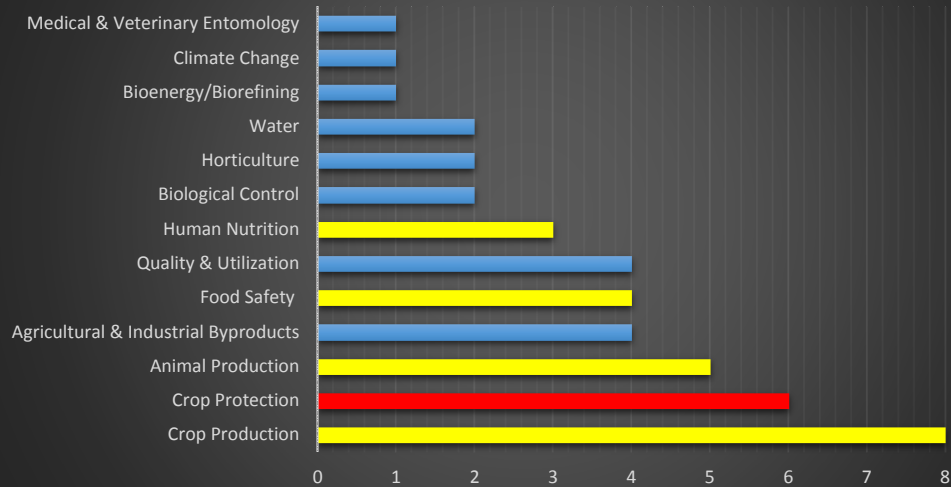


# Mexico Collaboration Trends 2014



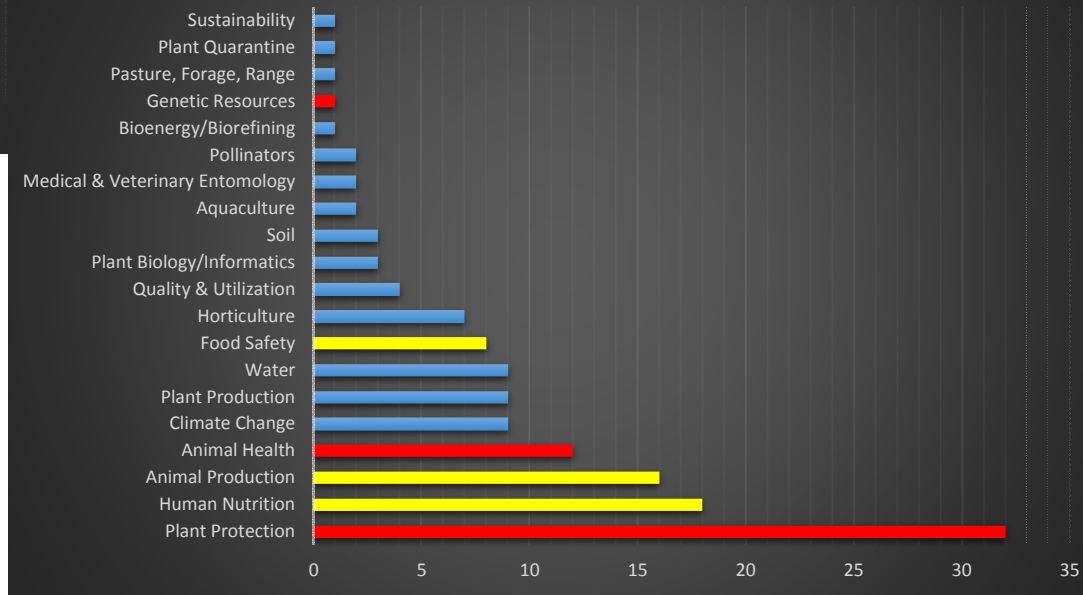
# Overlapping Collaboration Trends

## Mexico Collaborations



**RED** = existing Procinorte Task Force  
**Yellow** = potential subject areas

## Canada Collaborations



# Areas & Themes possible for Tri-lateral Coordination

- Administration & Agency priorities
  - Climate, water, food safety, sustainable landscapes
- Follow trends of our researchers
  - Crop production, protection, human nutrition, food safety

# Other Coordination & Collaborative Mechanisms

- North American Biotechnology Initiative- Trilateral technical working group (FAS, APHIS, EPA, FDA)
- North American Animal Health Committee (APHIS)
- North American Foot and Mouth Disease Vaccine Bank Technical Committee & emergency Management working Group
- North American Plant Protection Organization (NAPPO), APHIS
- Trilateral Committee for Wildlife and Ecosystem Conservation and Management (surveillance techniques, monitoring HPAI in wild birds)
- North American Plan for Animal and Pandemic Influenzas (NAPAPI), APHIS, HHS, DOD, DHS
- NAFTA Technical Working Groups for Meats, Poultry, & Egg Products; Dairy, Fruits, Vegetables, and Processed Foods; Animal Health, Plant Health



# ARS in the US Innovation System

## Innovation Success Triangle

### Innovation Policy Environment

- generous support for public investments in innovation infrastructure (S&T, technology, tech transfer)
- support of digital infrastructure (smart grids, broadband, health IT, e-government)
- targeting R&D to specific technology or sectors
- reshaping corporate tax code to spur innovation
- high skill immigration and support for science
- STEM education
- support for regional tech clusters and economic development

### Business Environment

- Quality executives & management
- Strong information & communications tech.
- robust entrepreneurship
- vibrant capital markets that support risk taking and enable capital flow to innovative and productive investments easily
- culture of inter-organization collaboration
- tolerance of failure when attempting to start a new business

### Tax, trade, regulatory environment

- governments protect is businesses against foreign mercantilists
- support for competitive markets where even new business models can flourish
- easy processes to start business or bring innovations to market
- transparency and rule of law
- reasonable business tax burden
- well functioning patent system and IPR protection
- regulations on businesses that are consistent, transparent, performance based
- government procurement performance based, open, fair

Adapted from Atkinson, 2014

# ARS' Role in the Innovation System

- Stakeholder and science driven Mission
  - Presidential priorities, Secretary of Agriculture, Congress's role in budget process, stakeholder input at national and local level, current science
- Required by Federal law, facilitates adoption of research impact, enhances economic development
  - Facilitate partnerships to allow adoption of research outcomes for broad US public benefit
  - Protect intellectual property only if it enhances adoption of research outcomes, not income generation (in contrast to other sectors)

# Technology Transfer Mechanisms for Achieving Impact

- Scientific papers, conferences, etc.
- Trade journal articles, field days, etc.
- Informational products, e.g., Ag Research Magazine, news releases, exhibits, web page, videos.
- Collaborative research
- Patenting & Licensing
- [Agricultural Research Partnerships Network](#)
  - Match business needs with ARS innovations and research capabilities

# Agricultural Innovation System- looking ahead

- Positive attributes:
  - managerial talent,
  - enterprise use of ICT,
  - business cultural factors such as demanding customers, collaboration
- Negatives attributes include:
  - Funding support for universities & non-defense federal
  - US societal unfavorable views towards future needs or collective goods
  - Immediate need to satisfy share holders
  - Anti-science (vaccines, climate change, GMOs, etc) beliefs, media's role in fear mongering for news cycle
  - Divisive politics hamper regulatory reforms/changes that are needed