



United States Department of Agriculture

Updates from the Economic Research Service

Presentation to NAREEE Advisory Board
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Outline

- Building on ERS strategic advantages
- New research findings
 - Antibiotic use
 - Climate & water
- Strategic vision for ERS Market Outlook Program
- Investments to inform the next Farm Bill



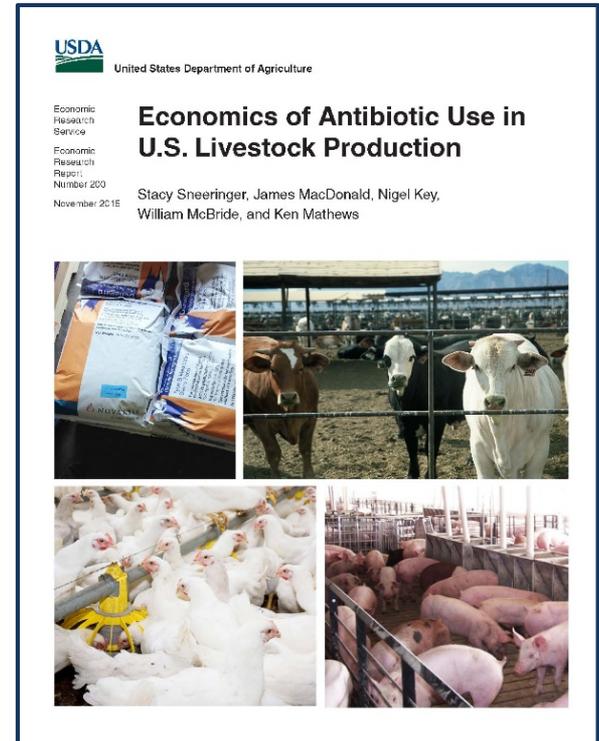
ERS strategic advantages as an intramural research agency

- Research that ...
 - builds on unique or confidential data sources and capitalizes on role as a Federal Statistical Agency
 - Provides coordination for a national perspective or framework, setting a single standard (e.g., farm income, food security)
 - Requires a sustained investment and large teams (e.g., natural resources modeling)
 - Directly serves USDA and other Federal programs requiring deep institutional knowledge
 - Addresses questions with short-run payoff or has immediate policy implications



Economics of Antibiotic Use in U.S. Livestock Production

Stacy Sneeringer, James MacDonald, Nigel Key, William D McBride, and Kenneth Mathews, Economic Research Report No. (ERR-200) 100 pp, November 2015



Background

- Farmers use antibiotics in livestock to...
 - Treat disease in animals
 - Control disease
 - Give drugs to healthy animals when disease hits other animals in flock or farm, or in location
 - Prevent disease
 - Give drugs to healthy animals when no other animals are diseased but there is a high risk of disease
 - Increase productivity (production purposes)
 - Small doses of antibiotics improve feed conversion, increase daily weight gain
 - Current theory: works by suppressing microbes in gut

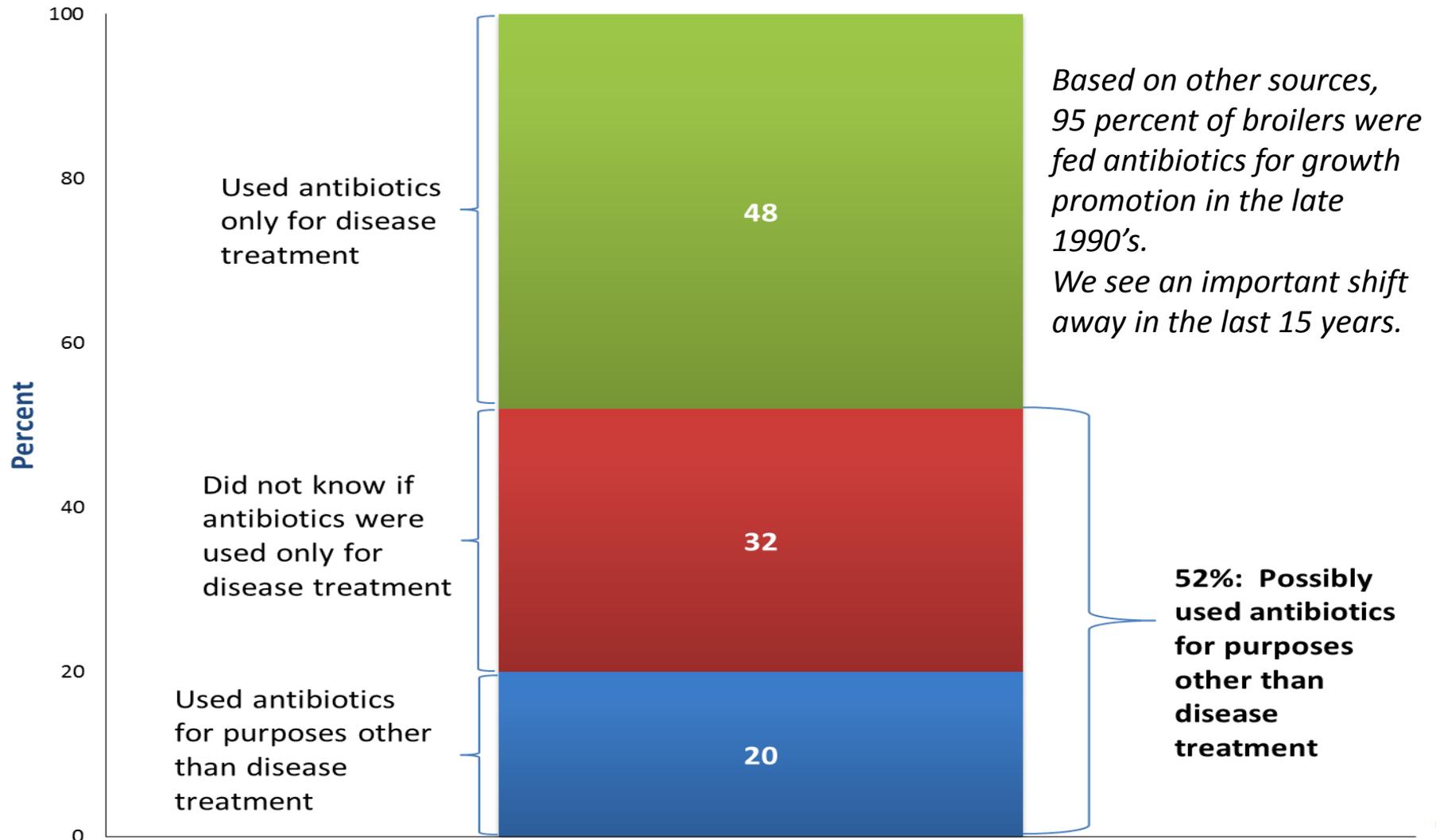


Major research questions

- What is the current extent of antibiotic use for production purposes and disease prevention in hogs and broilers?
- What are the effects of restricting production purpose uses on animals and farms?
- What are the effects of production purpose restrictions on prices and quantities produced of pork and chicken?



Only a portion of food animals are administered antibiotics for reasons other than disease treatment (broiler example)

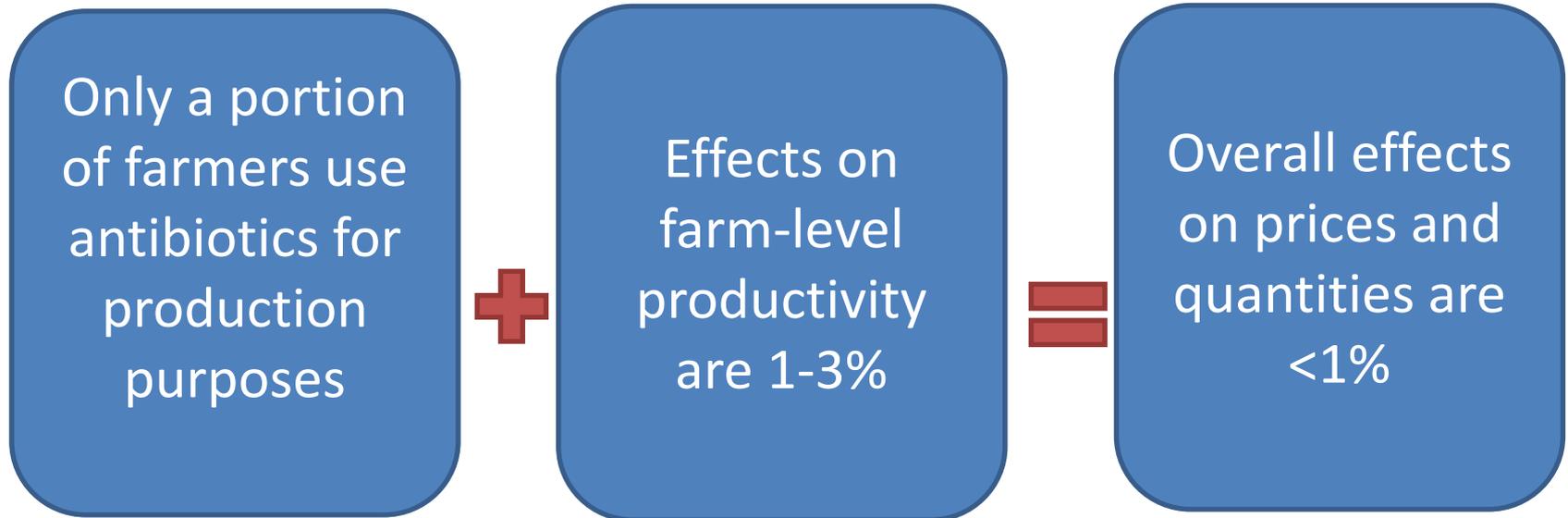


Research on the effects of feeding antibiotics (production purpose)

- Studies in the 1950's-70's find that feeding antibiotics has large impact on feed efficiency & mortality—double digit gains
- Studies in 1990's-2000's (including ERS studies with ARMS) find much smaller effects: 1-3% improvements in feed efficiency, in hogs and broilers
 - And, high variance in estimate makes it impossible to statistically distinguish from no (zero) effect
- Why? Increasing resistance to antibiotics? Or improved production environments
 - Better ventilation and sanitation in houses; improved biosecurity practices; enclosed and tighter houses.

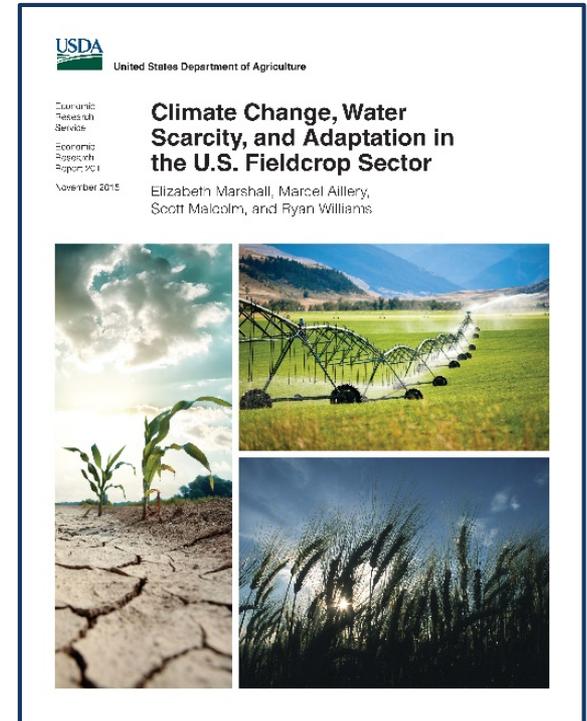


Likely effects of eliminating production purpose antibiotics on wholesale meat price and quantities



Climate Change, Water Scarcity, and Adaptation in the U.S. Fieldcrop Sector

Elizabeth Marshall, Marcel Aillery, Scott Malcolm, and Ryan Williams, Economic Research Report No. (ERR-201) 119 pp, November 2015

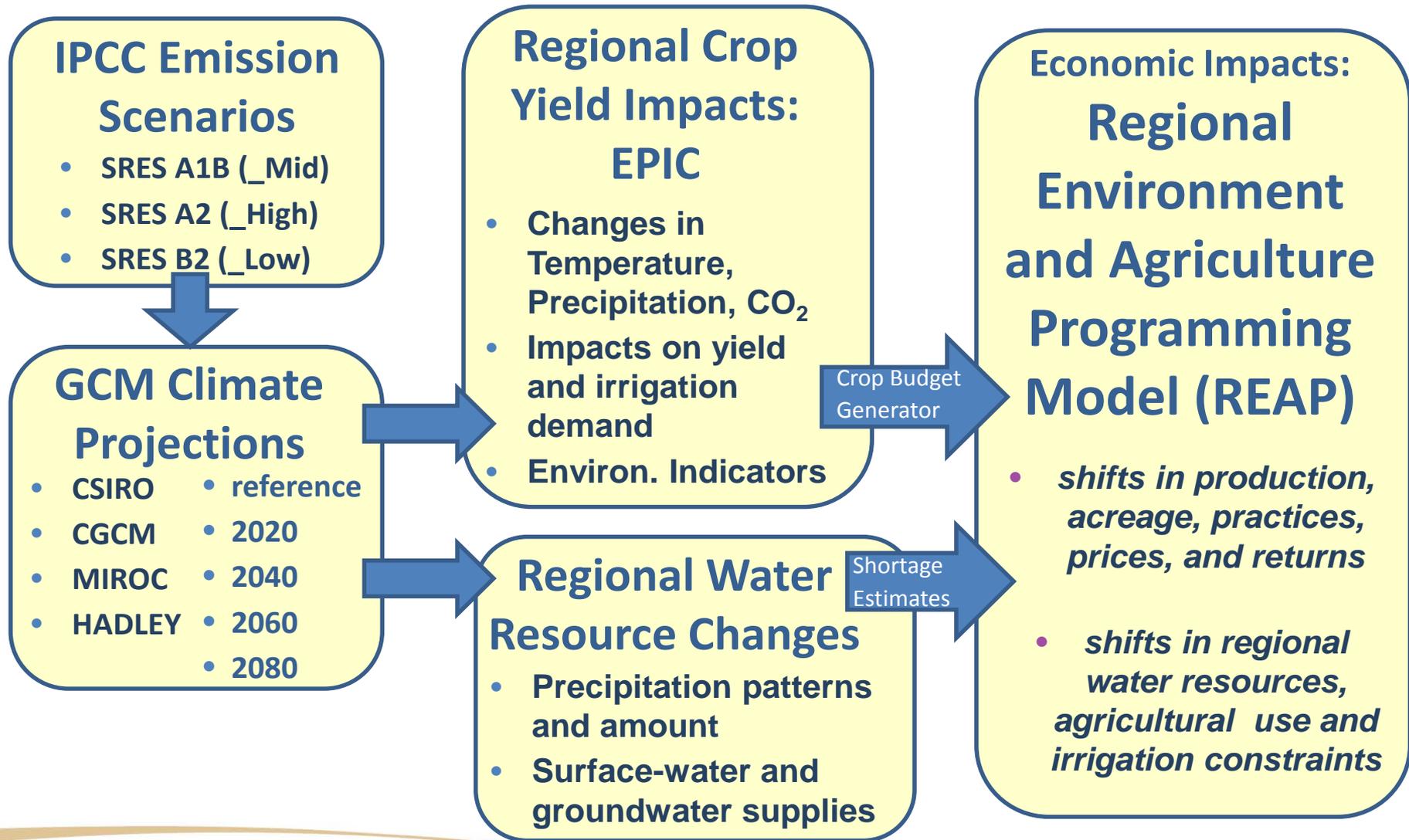


Research questions

- What are the implications of climate change for crop yields, ag production, and crop prices?
- How might shifting water regimes under a warming climate affect water-supply availability for irrigation?
- To what extent are irrigation shortages a constraint to adaptation and national production under climate change?
- How does the importance of irrigation shortages in limiting production change regionally and over time?



ERS modeling system



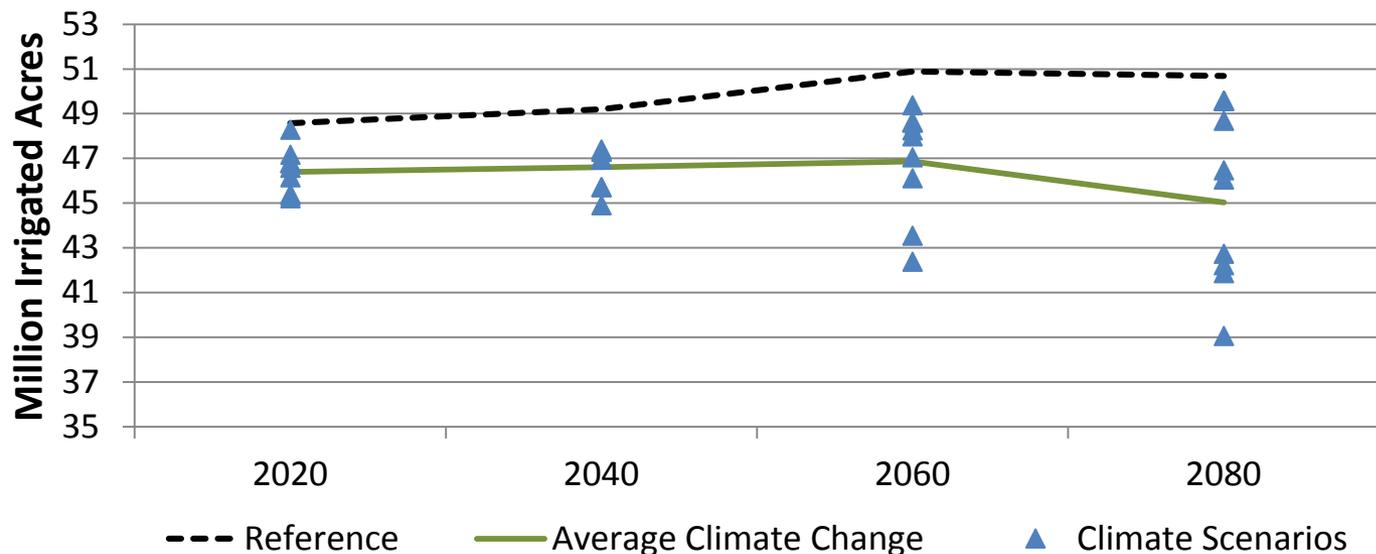
Yields generally decrease and prices increase

- Yields and total production of all major fieldcrops except wheat, hay, and barley decline, with average production losses up to 16% for corn and 14% for soybeans.
- An index of prices averaged over climate futures increases by 5-10%



Impacts of temperature stress on crop growth may drive irrigation demand in counterintuitive ways

- Irrigated production becomes relatively less profitable, and irrigated acreage and applied irrigation declines
- Surface-water shortages remain an important constraint on irrigated acreage in Pacific and Mountain regions.



ERS strategic vision for commodity outlook

- USDA's Outlook Program coordinates market information through the World Board drawing on expertise from USDA agencies that comprise the Interagency Commodity Estimates Committee (ICEC)
- Primary products:
 - WASDE: Monthly release of market-sensitive supply and use estimates for all major crops and livestock
 - Baseline: annual 10-year market projections
- ERS role: Economic analysis of U.S. and global markets; provider of outlook data and information to the ICEC and the public



Stakeholder outreach confirms:

- The ERS commodity outlook program is important and highly visible
- Users want information that is timely, relevant and actionable
- External users often do not distinguish between ERS and other USDA agencies
- Easy access to data is important
- Concerns about labor pool and succession planning:
 - Limited labor/talent pool to recruit from
 - Retaining young staff, loss of institutional knowledge as senior staff retire



Action plan overview

- Sustainable staffing plan with emphasis on recruitment, training, development and retention/succession
- Enhanced digitalization and communication of a suite of outlook products adapting to changing clientele's needs
- Create a 21st century data architecture that allows for easy access and analytics



Commitment to staffing

- Maintain a Senior Analyst position for major WASDE commodities, strengthen Cross Commodity Analyst role, and expand the number of junior analysts to support long-term succession planning.
- Enhance the cooperation/coordination between research and outlook staff
- Build workforce and align incentives for outlook work



The Ag Econ Scholar Program

- Working with Universities to develop a strong pool of candidates for USDA employment
- Pilot program with Kansas State, Purdue and Nebraska
 - Students will spend time in Washington to learn about what USDA does and employment opportunities available
 - ERS works with the Universities to identify the coursework and educational opportunities that students need to succeed in Outlook-oriented positions.



Outlook content and communication

- Facilitate public access to the full range of data used by commodity analysts
- Enhance reporting on research-outlook analysis
 - Focus on timely issues relevant to commodity markets, (e.g., Impacts of lower energy prices on agriculture, Outlook for trade with Cuba, Cotton Policy in China)
- Improve the customer/stakeholder experience
 - Provide more charts and graphs—automated and/or interactive where possible—to highlight data trends and multi-year or seasonal comparisons
 - Provide internal and external users reasons to visit ERS for commodity market information on a daily or weekly basis, as opposed to only on S&O report release dates



Looking forward to informing decisions for the next Farm Bill

- Commodity title
 - Synthesis of the impact of commodity support programs
 - Farm household income variability and ag risk management programs
 - Cotton Revenue Sensitivity to the STAX Program
 - The 2014 Farm Act's Agriculture Risk, Price Loss, and Supplemental Coverage Option Effects on Crop Revenue



Next Farm Bill (cont)

- Dairy & livestock: Structural change in U.S. dairy industry and international markets
 - Conservation title
 - EQIP Contract Modifications
 - Conservation Compliance in the Crop Insurance Era
 - Nutrition title: SNAP and effects on the general and rural economy
- ... Context for food, farm, natural resource & rural economy



For more information on ERS

Website: www.ers.usda.gov

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