



United States Department of Agriculture  
Research, Education, and Economics

# Food Safety, Defense, and Security Research and Biosafety/Biocontainment Challenges

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# Why Biorisk Management?



Essential to Protect

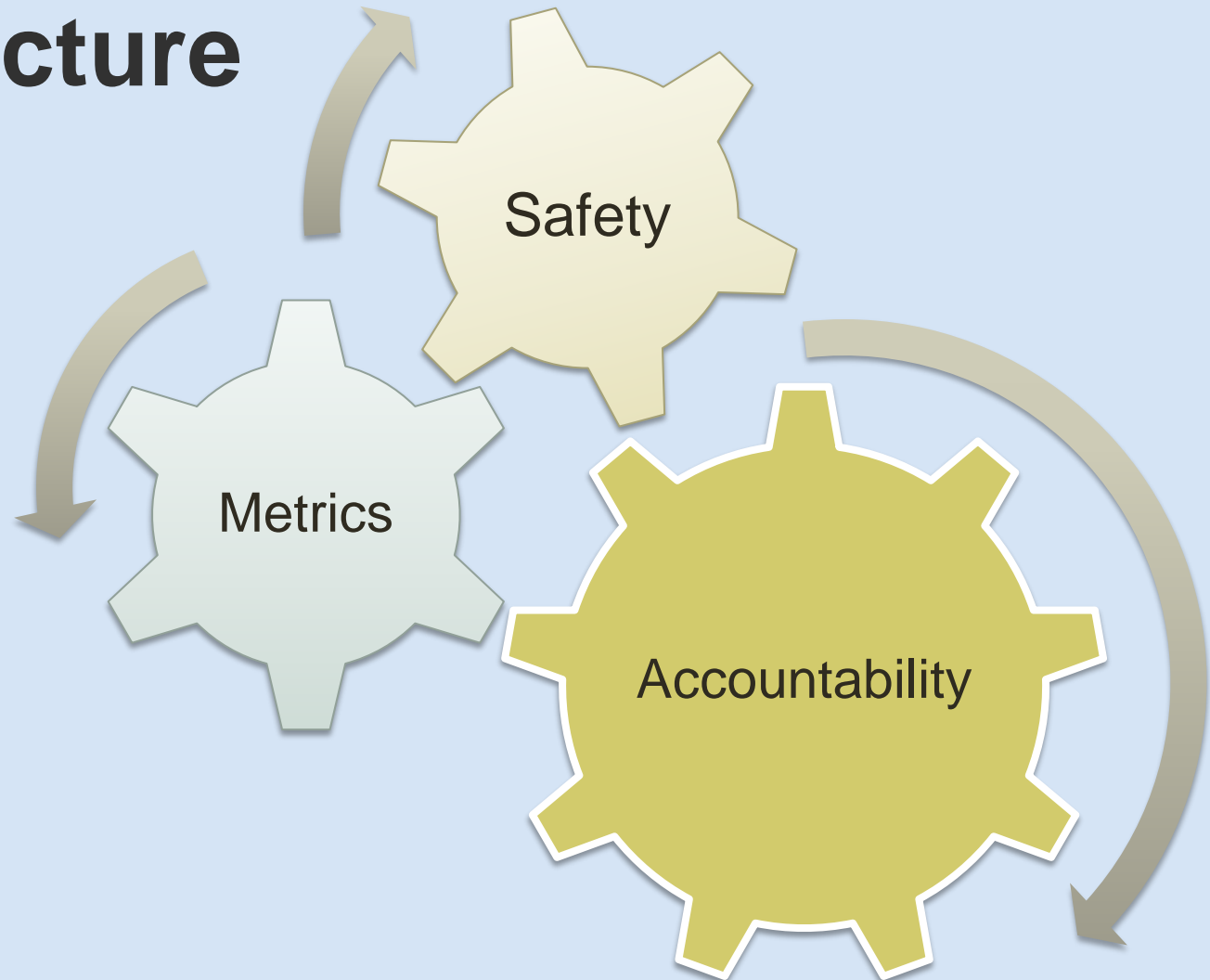
- Researchers
- Organization
- Human and Agricultural Environment



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# Biorisk Management Leadership Infrastructure





# Interagency Collaboration

- National Policy Discussions
  - Biorisk Management Practices
  - Dual Use
  - Staff Reliability
- Biological Defense Research and Development Subcommittee
- 2009 Transfederal Taskforce on Biosafety and Biocontainment



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# ARS Food Safety Research Program Accomplishments

- Developed predictive models
- Improved intervention processes
- Developed new detection technologies used by regulatory agencies and industry
- Developed new detection technologies that could be used by minimally trained personnel



# Dual Use Research of Concern

- United States Government (USG) Policy for Oversight of Life Sciences Dual Use Research of Concern finalized and implemented 3/29/2012.
- USG proposed policy for Institutional Oversight of Dual Use Research of Concern
  - formalize the roles and responsibilities of institutions and investigators when they are conducting certain types of research on specific pathogens and toxins funded by the Federal agencies.



# 21<sup>st</sup> Century Challenges



Food Security



Food Safety



Human Nutrition and Health



Climate Change



Biofuels/Bioproductions



# Water Scarcity



- Water security directly impacts economic vitality of agriculture, rural (and urban) communities and the business sector
- Watershed health & resilience
  - climate change
  - natural resource protection
  - habitat for wildlife
  - drinking water





# Importance of Food and Ag R&D: Simulation of Future Productivity Growth Under Different R&D Funding Scenarios

Figure 2. Productivity-oriented agricultural research expenditures

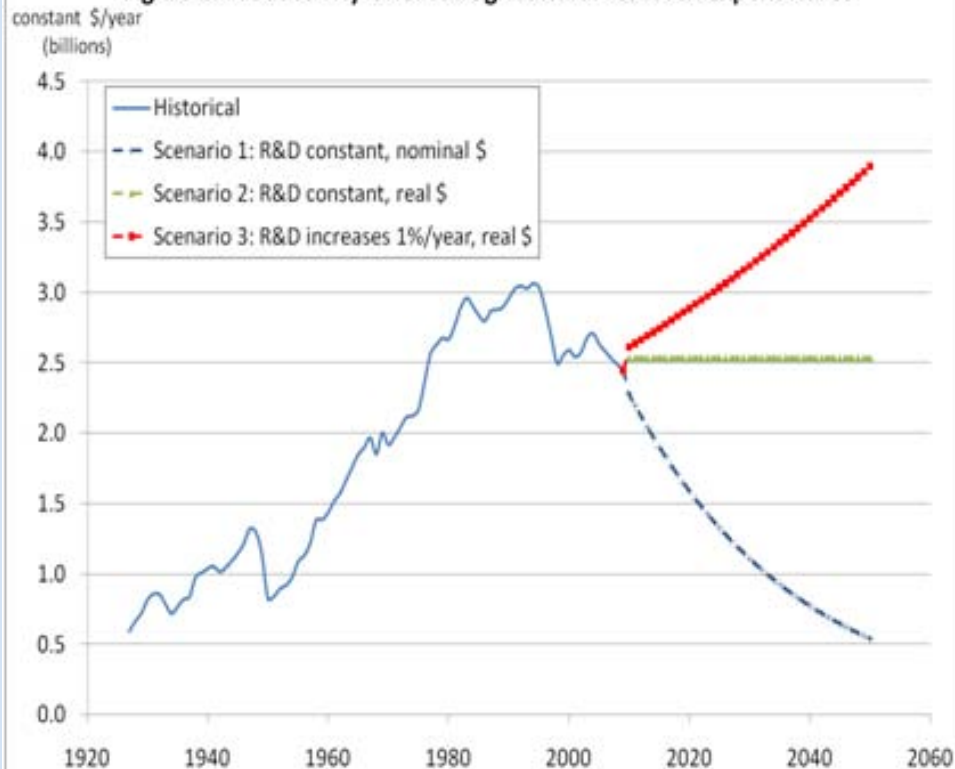
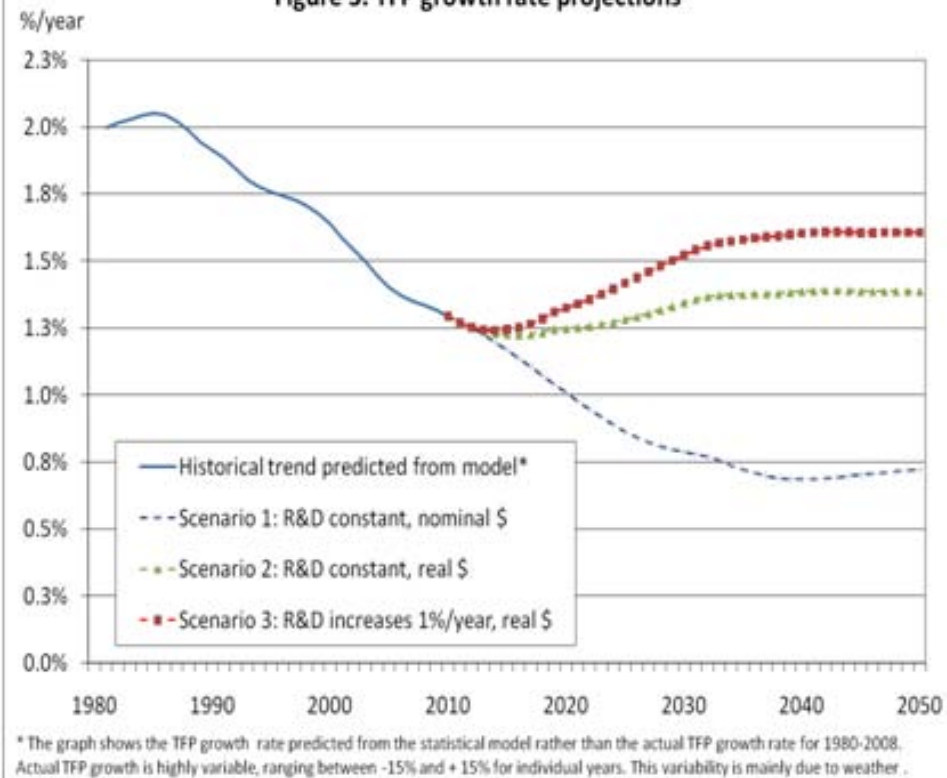
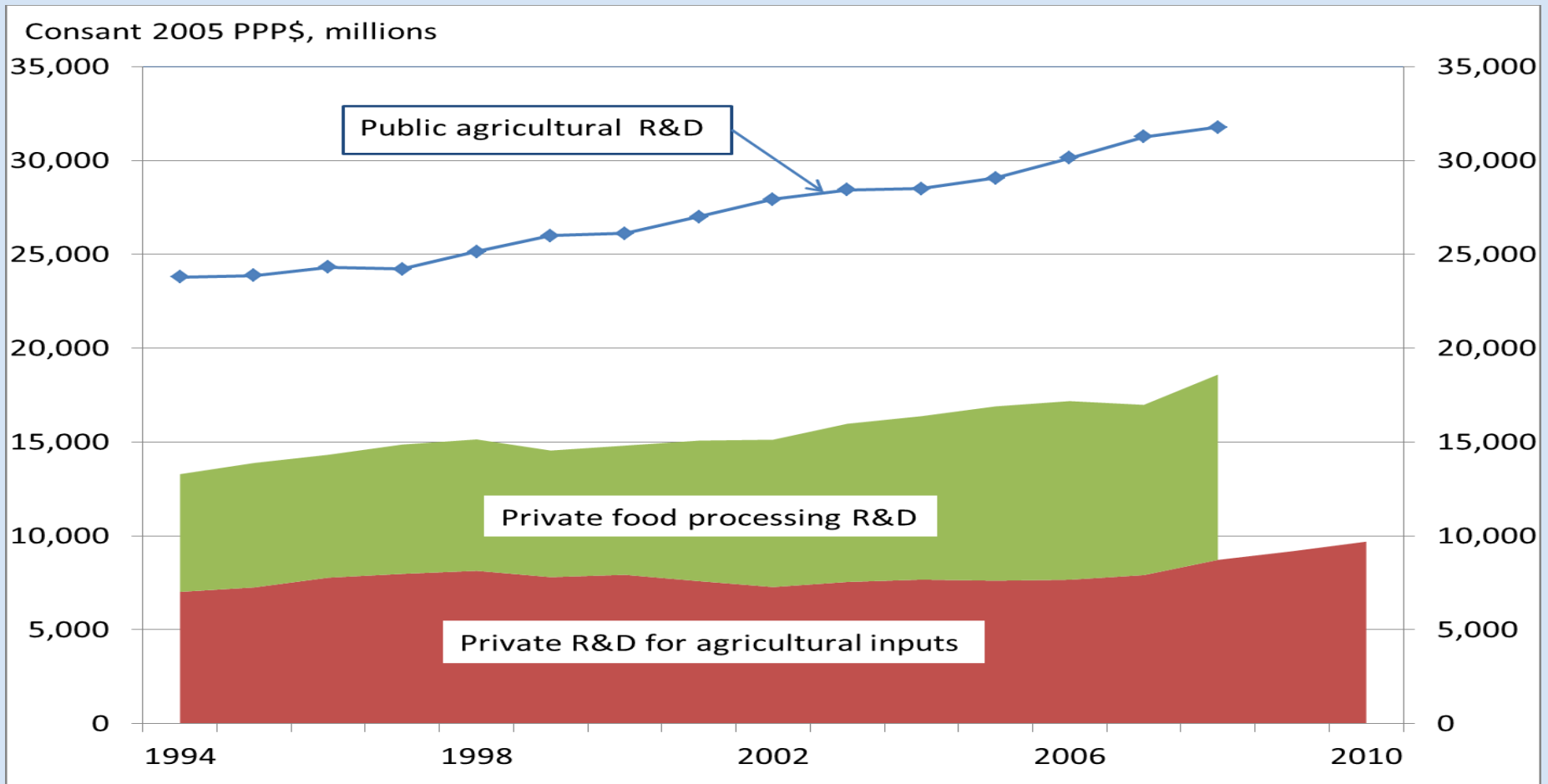


Figure 3. TFP growth rate projections





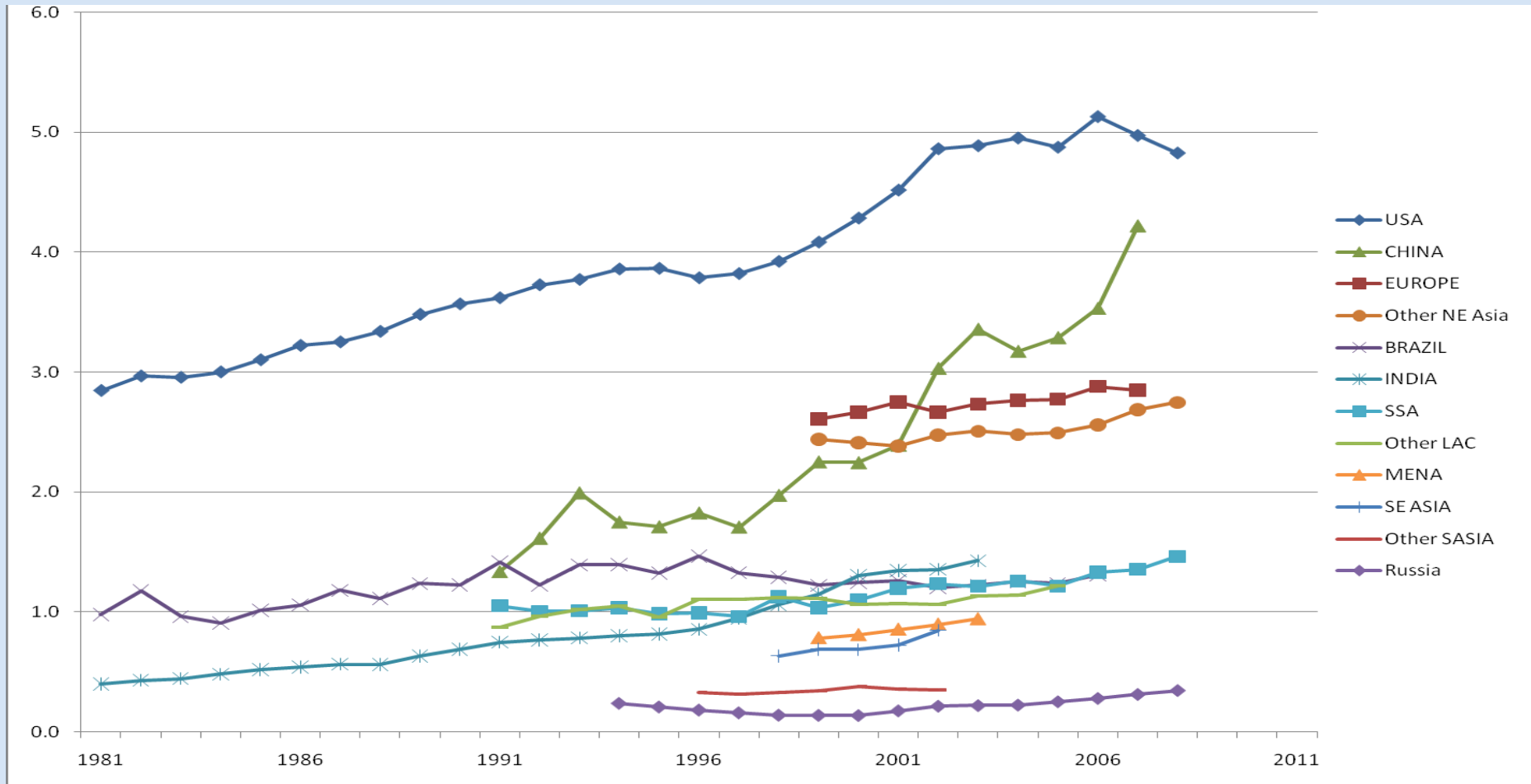
# Global Public Agricultural Research Spending (constant 2005 PPP dollars in billions)



Source: ERS (2011) and forthcoming IFPRI "Global Update" report (2012 GCARD)

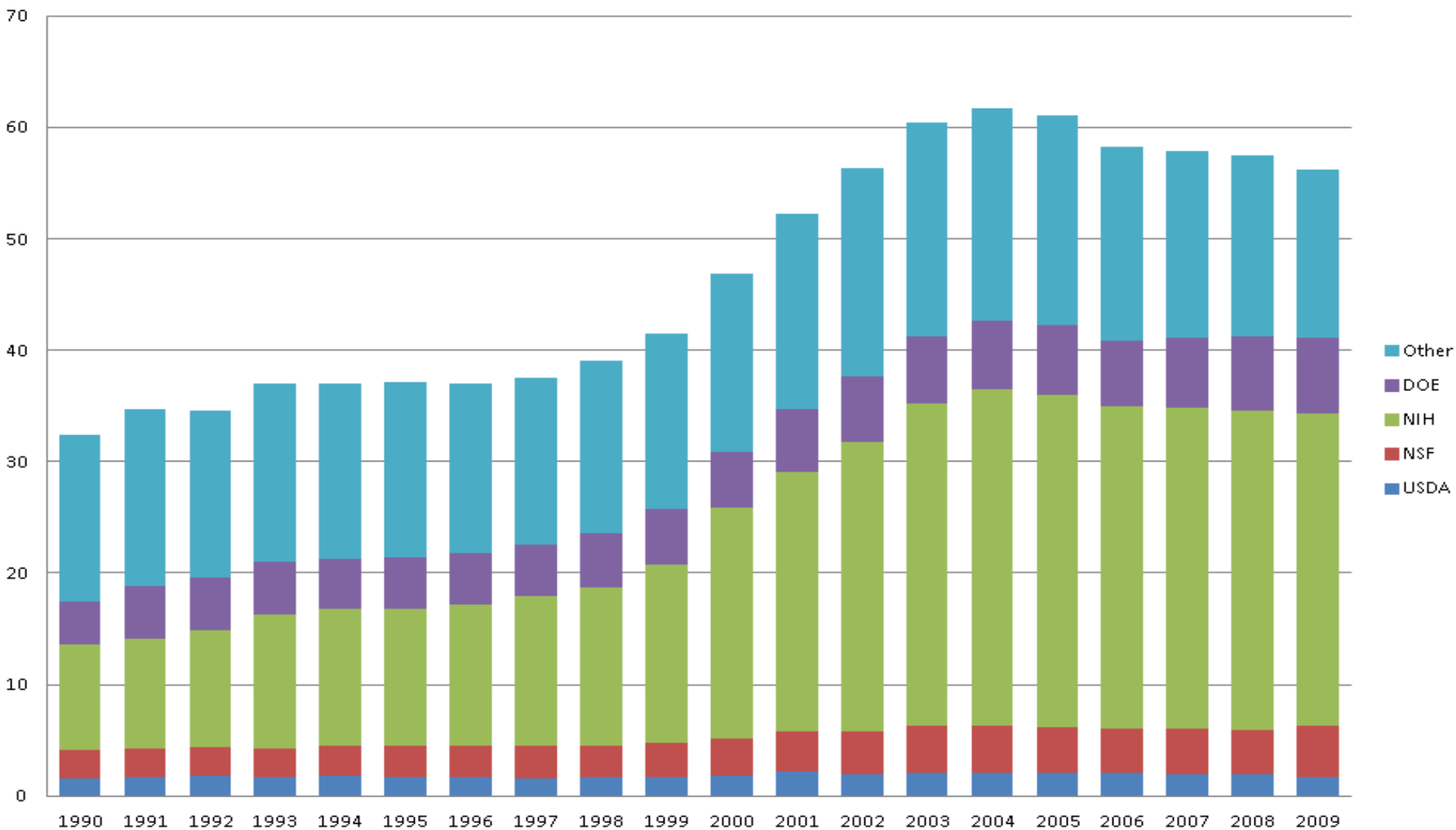


# Global Public Agricultural Research Spending (constant 2005 PPP dollars in billions)





### Federal R&D, 1990-2009 billions of constant FY 2008 dollars





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# Thank you for your attention

## Questions?

