REPORT TO THE PRESIDENT ON AGRICULTURAL PREPAREDNESS AND THE AGRICULTURE RESEARCH ENTERPRISE

Executive Office of the President

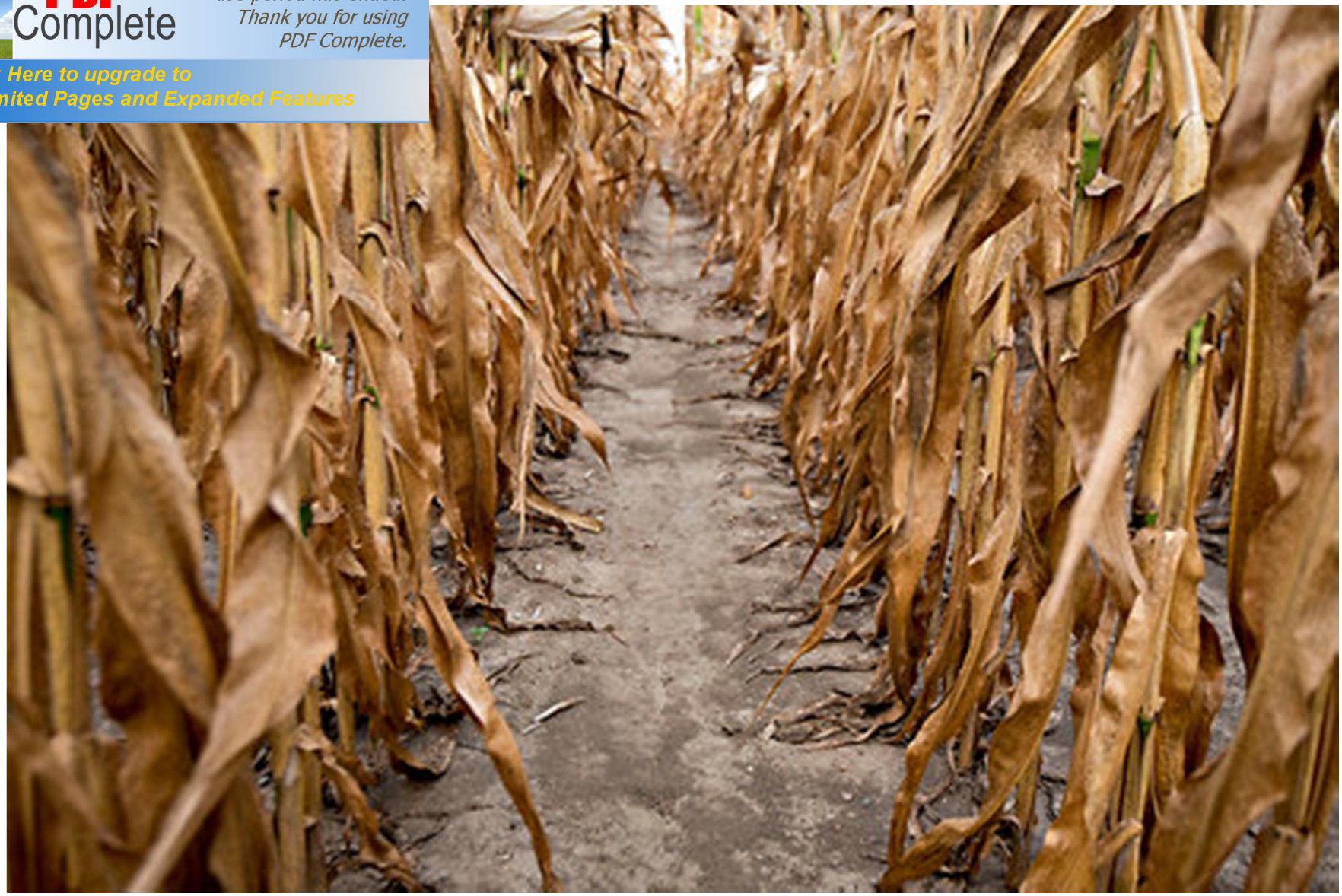
President's Council of Advisors on Science and Technology

DECEMBER 2012

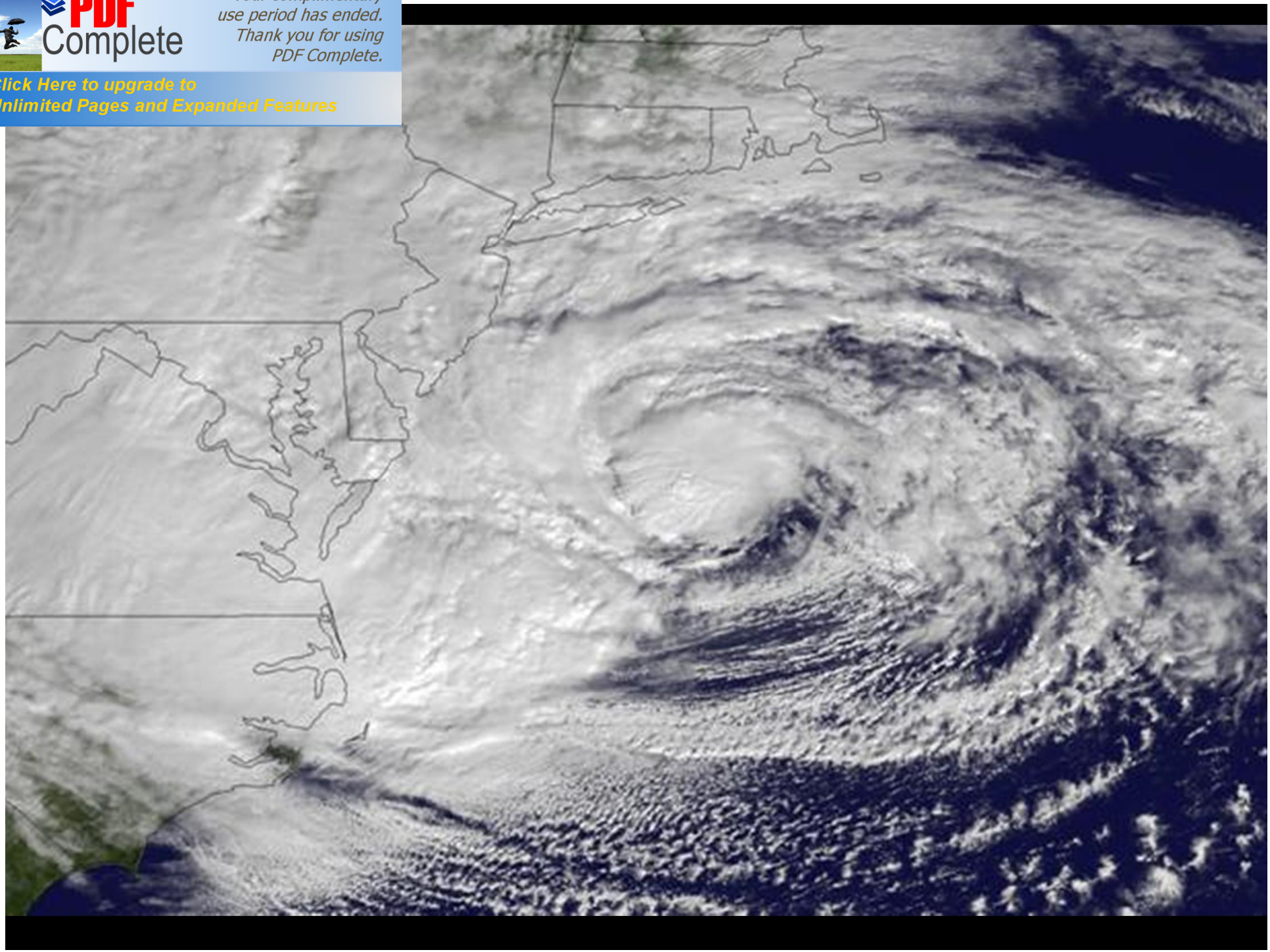
v decades, American agriculture will confront more competition oversees, will struggle with global resource challenges including limiting the inputs of water, pesticides, and nutrients, and will be asked to meet the ever-increasing demand for food and other agricultural products including biofuels, all in the face of a changing climate. Successfully overcoming these challenges requires an American agricultural research enterprise that harnesses the newest advances from across the physical and life sciences, building off our broader public investment in science and technology, and then applying them to the specific challenges for agriculture."

allenges to Agriculture threaten our Preparedness

- Need to control new pests, pathogens, invasive plants or face major damage to crops and livestock
- Need to increase the efficiency of water use to counter current and future shortages
- Must reduce the environmental footprint (land, water, fertilizers, chemicals, soil, minerals, GHGs, etc.)
- Must be able to grow food in a changing climate
- Need to produce safe and nutritious food as obesity and diabetes epidemics skyrocket
- Global security depends on the U.S. feeding the world



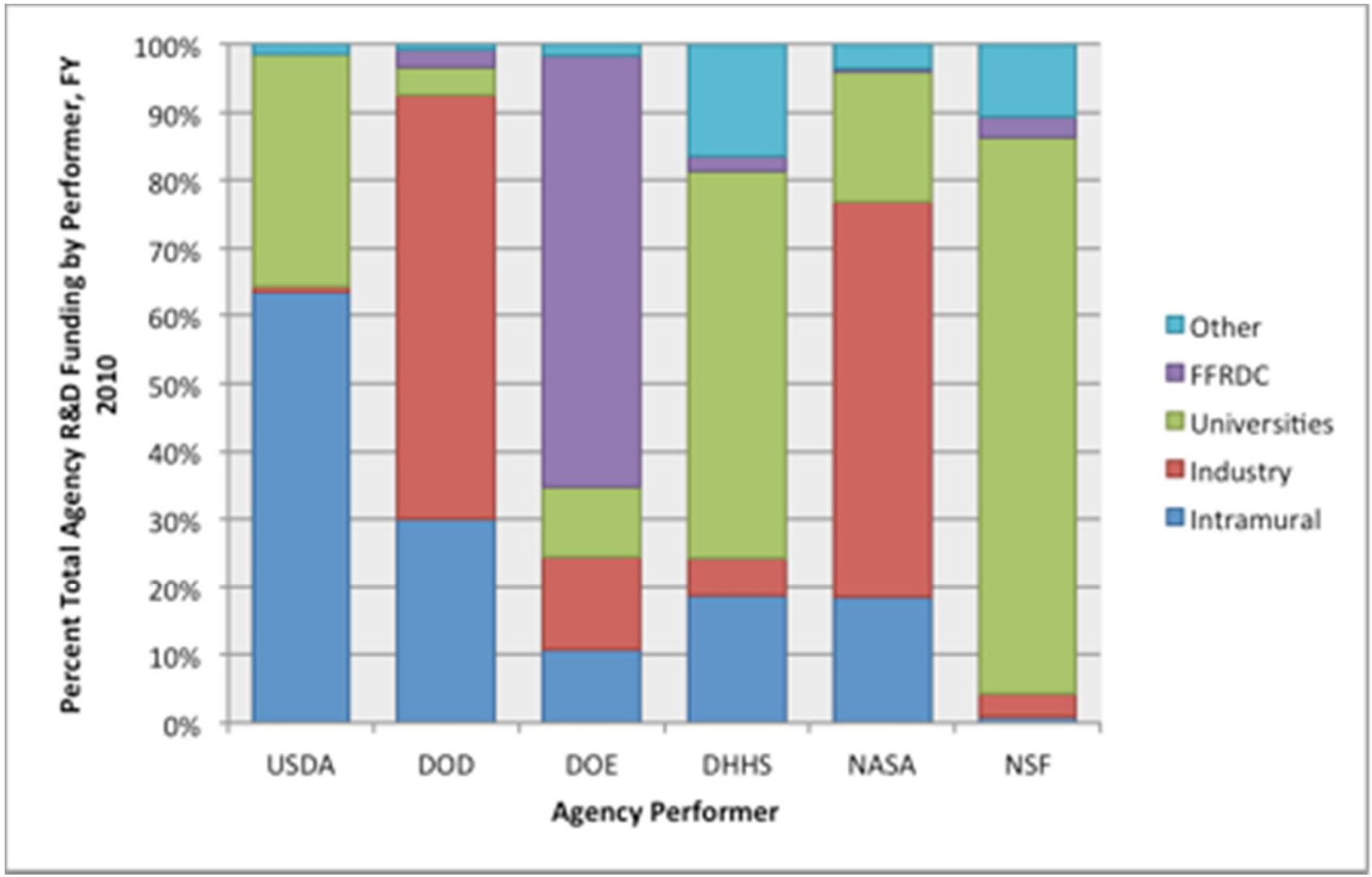
Corn plants damaged by extreme heat and drought conditions stand in a field in Carmi, Ill. (July, 2012)



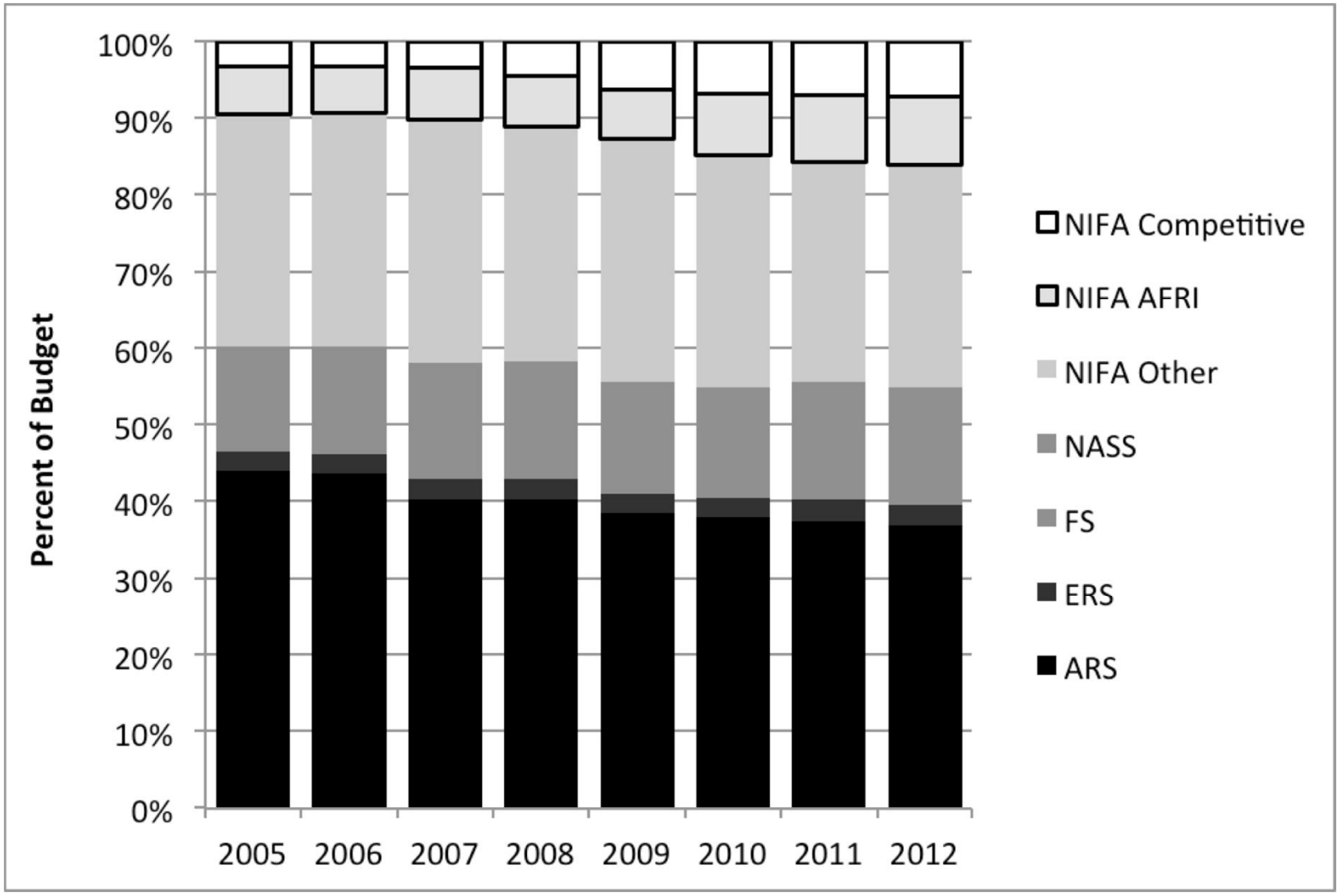
Is the current agricultural research enterprise *prepared* for future challenges?

Are new and different types of investments needed?

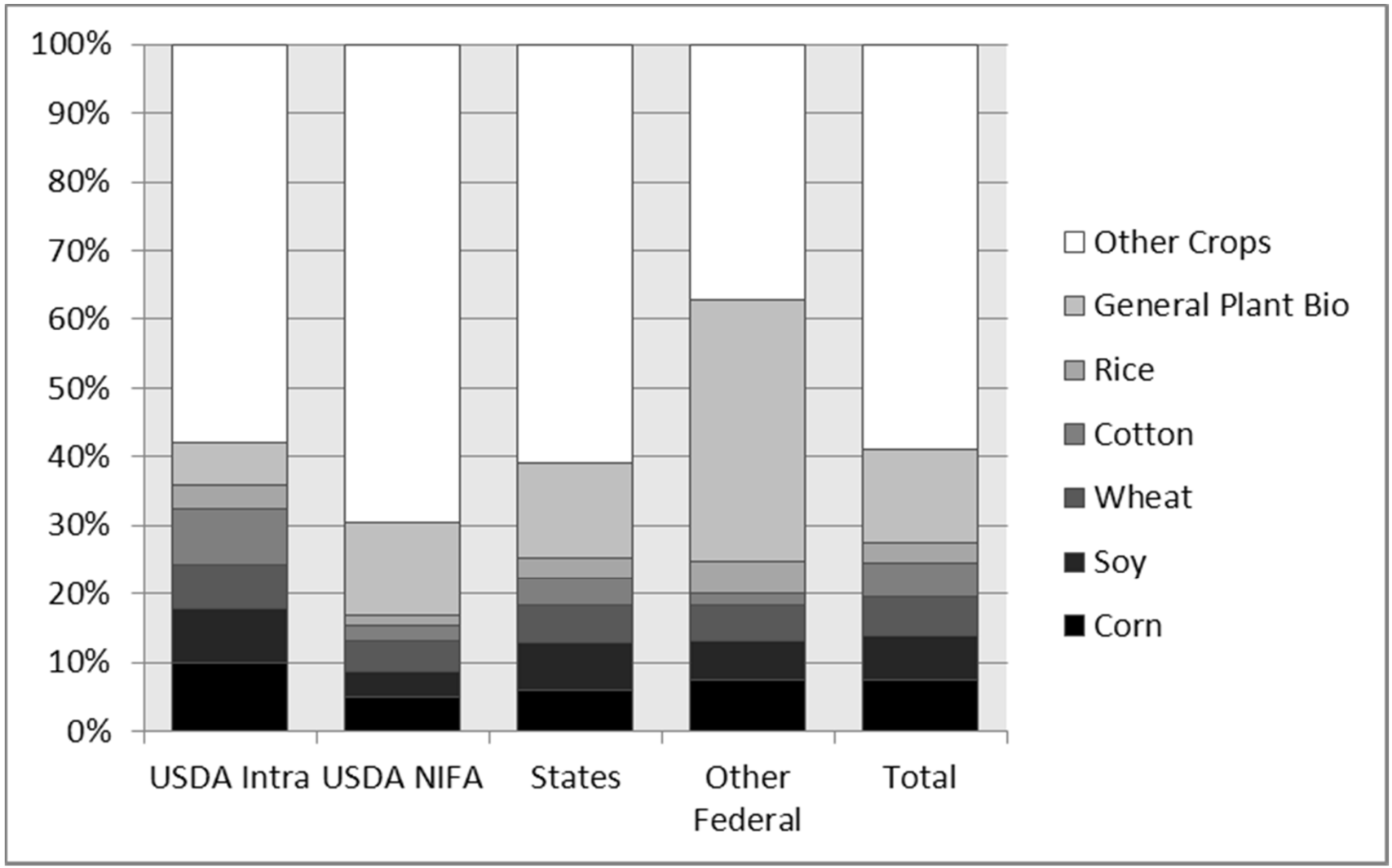
ding dominates USDA R&D portfolio



unding at USDA is 15% of the R&D portfolio



ctor spends more than one third of public plant research on five commodities.



- There are a set of emerging challenges that are crucial to the long-term prosperity of our agricultural enterprise. They are not being adequately addressed by current research efforts.
- There is significant overlap between public and private research efforts; there is an opportunity for rebalancing.
- The allocation of research support is done primarily through non-competitive mechanisms, which may hinder innovation.

als we describe for American agriculture will not be easy. It will require the harnessing of our national culture of innovation in science and technology, as we have done in other areas from medicine to information technology. Our public investment must not merely prop up the existing structure of agricultural research, but be made in such a way as to transform the U.S. agricultural research enterprise, making it most efficient and more focused on the critical market failures that are squarely in the public domain, relying on the private sector in areas that are more directly related to commercial interests. We call for a strategic investment that, when combined with private partnerships, will create the path towards a new innovation ecosystem for America's heartland, enhancing our economy and harnessing the power of American innovation in science and technology to address the great, impending challenges to the Nation."