The Challenge of Ag

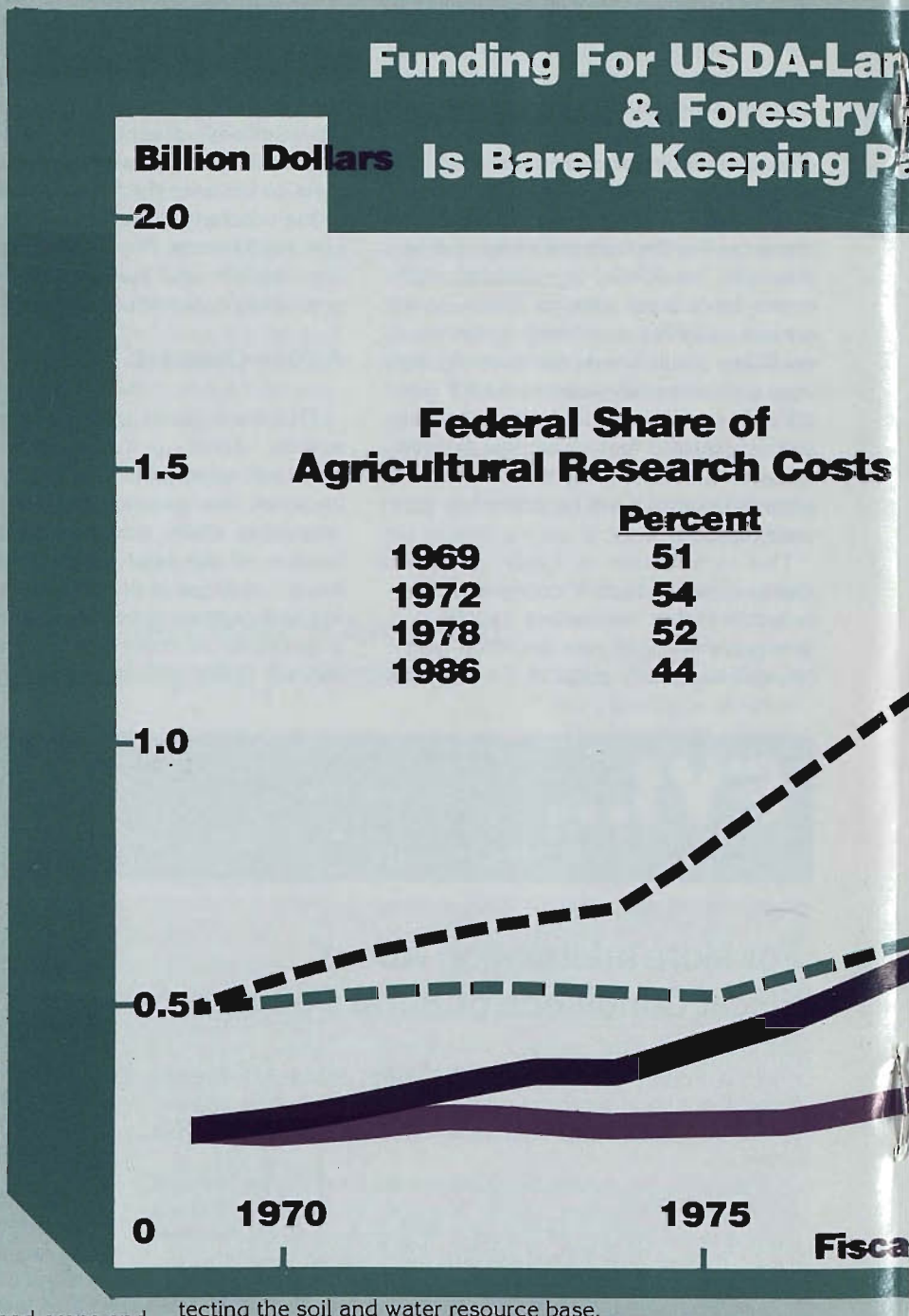
by James H. Anderson

Investments in agricultural research at both the state and federal levels have paid large dividends to the taxpayers of this nation. In the era of low-cost energy and the perception of unlimited supplies of non-renewable resources, U.S. agriculture prospered, through the application of science and technology. It is now the most productive agriculture in the world. The bounty of the American Farmer, unparalleled in the history of mankind is the envy of friend and foe. The efforts of dedicated scientists and engineers have created a miracle. Much more remains to be done because present technologies will not be adequate for the future as global resource constraints become more critical.

New Initiatives Needed

There will be a worldwide shift from an agriculture based on natural resources to one that is based more on biology and scientific information. Supplies of land, water, fertilizer, pesticides and energy are limited, so the emphasis will be to increase the average output per unit resource input. The future will see an inevitable shift from a highly-mechanized, energy-intensive agriculture to one that exploits biological opportunities and utilizes a more diversified set of resource conserving production technologies. The availability of these technologies will depend on the level of support that is provided for agricultural research.

This new set of initiatives for food and agricultural research has been brought about by the fact that our world is moving through a transition from a demand driven economy with perceived unlimited resources, to one which recognizes that the well being of future generations depends on our willingness to utilize the resources at our disposal in a responsible way. Future agricultural research must address the critical constraints facing U.S. agriculture. Research of the future will be concerned with the control of biological processes that limit the productivity of economically important food crops and food animals. It will be directed toward more effectively using and managing resources and other production inputs, as well as protecting the soil and water resource base.



Greater attention must also be given to the non-production aspects of the agricultural industry. Tremendous challenges exist in processing, packaging, distribution and marketing of our agricultural bounty as we compete in a global economy. Much of the challenge is interdisciplinary in nature and will demand cooperation among several academic disciplines. Further, today's research must

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graphic look at key economic figures

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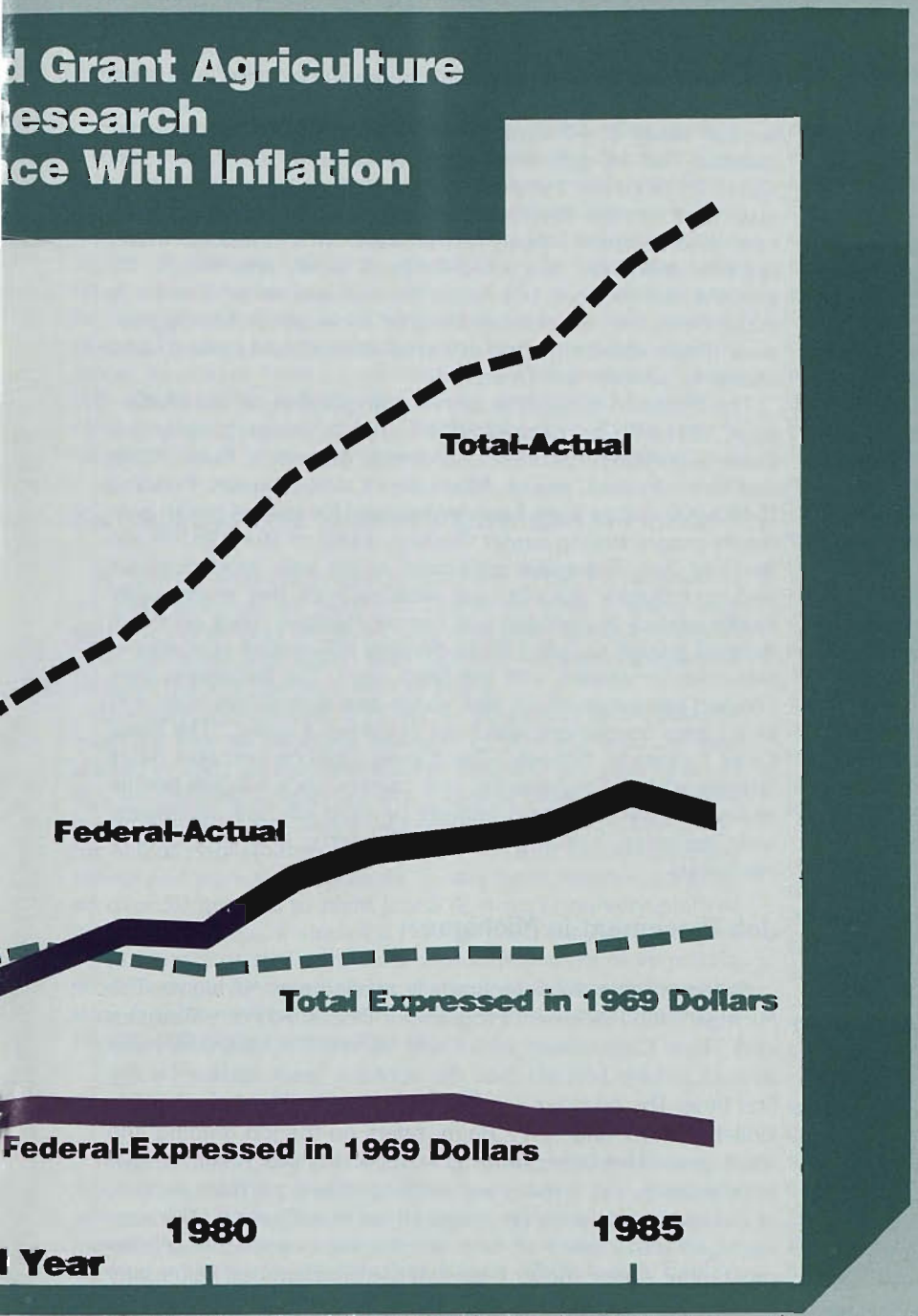

not only be politically and socially acceptable, but also environmentally acceptable. It is imperative that greater attention be given to the externalities that come with research developments.

Research Priorities in Place

Research priorities for the plant and animal sciences have been assessed and elaborated in a number of international conferences on crop productivity, several world food and nutrition reports of the U.S. National Research Conference on Animal Agriculture/Meeting Human Needs in the 21st century and by the Office of Technology Assessment of the U.S. Congress.

The World Food Conference of 1976 outlined research priorities and an International Conference on Agricultural Production issued recommendations for research and development in the biological sciences, soil, water and energy. Several publications of the Joint Council of Food and Agricultural Sciences outline the long-range needs for the science and education system, present a five-year plan for addressing those needs, and identify the priorities that need immediate action.

Need to Restore Federal/State Balance

As we look to the closing decade of this century and beyond, it is evident that one of our greatest challenges is the restoration and maintenance of the vitality of our agricultural research system. A review of federal support for agricultural research over the last two decades reveals that combined federal and state funding has barely kept pace with inflation and the historic federal/state partnership is now being threatened by a lack of support at the federal level.

Increases in federal funds for agricultural research from 1978 to 1986 did not keep pace with inflation. Consequently, the "real" value of the 1986 federal support for agricultural research declined 13 percent from 1978 to 1986.

In recent years, states have had to provide an increasingly greater share of the cost of agricultural research.

A period of economic recession in many of the states has reduced their fiscal flexibility at a time when research should be expanding to meet the challenges that confront U.S. agriculture.

Therefore, it is imperative that we intensify our efforts to restore the level and the balance of funding that has been so successful in developing the agricultural industry of the nation.

We cannot remain competitive in the world of tomorrow without making the necessary investment in research today. ◘