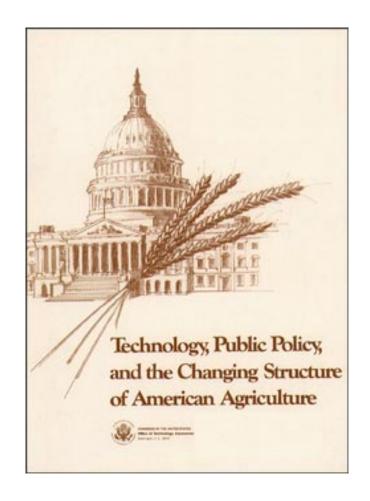
### Technology, Public Policy, and the Changing Structure of American Agriculture

March 1986

NTIS order #PB86-184637



#### Recommended Citation:

U.S. Congress, Office of Technology Assessment, *Technology, Public Policy, and the Changing Structure of American Agriculture, OTA-F-285* (Washington, DC: U.S. Government Printing Office, March 1986).

Library of Congress Catalog Card Number 85-600632

For sale by the Superintendent of Documents U.S. Government Printing Office, Washington, DC **20402** 

#### **Foreword**

American agriculture is undergoing significant change and stress. Much of the recent change has been attributed to the financial farm crisis caused mainly by declining agricultural exports. However, underlying these financial difficulties are strong technological and structural forces which will cause further changes and adjustments in American agriculture for the remainder of this century.

Congress, concerned about the nature of these adjustments, requested the Office of Technology Assessment (OTA) to analyze the underlying technological, structural, and political forces which impact American agriculture and to determine the industry's probable future direction. Committees requesting the study include: the Senate Committee on Agriculture, the Senate Small Business Committee (the Subcommittee on the Family Farm), the Joint Economic Committee, the House Committee on Science and Technology, and the House Committee on Agriculture (the Subcommittee on Livestock, Dairy, and Poultry; the Subcommittee on Department Operations, Research, and Foreign Agriculture; and the Subcommittee on Forests, Family Farms, and Energy).

In the course of preparing this report, an interim report entitled *A Special Report for the 1985 Farm Bill* was transmitted to the requesting committees for their use during the debates and the writing of the Food Security Act of *1985* (*1985* Farm Bill). The special report focused on assessment findings that were particularly relevant for issues debated in that legislation.

This report addresses the longer run issues that technology and certain other factors will have on American agriculture during the remainder of this century. It focuses on the relationship of technology to: agricultural production, structural change, rural communities, environment and natural resource base, finance and credit, research and extension, and public policy. The assessment identifies many benefits that new technologies will create, but these benefits will also exact substantial costs in potential adjustment problems. This report is a first step toward understanding these interrelated problems and identifying policies to ameliorate them.

OTA greatly appreciates the contribution of the advisory panel, workgroups, workshop participants, authors of the technical background papers, and the many other advisors and reviewers who assisted OTA from the public and private sector. Their guidance and comments helped develop a comprehensive report. As with all OTA studies, however, the content of this report is the sole responsibility of OTA.

JOHN H. GIBBONS

Director

# Technology, Public Policy, and the Changing Structure of American Agriculture: Advisory Panel

Frank Baker

Director, International Stockmen's School Winrock International Livestock Research and Training Center

Arkansas

James Bonnen Professor

Department of Agricultural Economics

Michigan State University

William Brown

Chairman of the Board

Pioneer Hi-Bred International, Inc.

Iowa

Frederick Buttel Associate Professor

Department of Rural Sociology

Cornell University

Willard Cochrane

Consultant California

Jack Doyle Director

Agricultural Resources Project Environmental Policy Institute

Washington, DC

Marcia Dudden Dudden Farms, Inc.

Iowa

Walter Ehrhardt Ehrhardt Farms

Maryland

Dean Gillette Professor

Harvey Mudd College Claremont College

Roger Granados Executive Director La Coopertiva California Richard Harwood Program Officer Winrock International Virginia

Charles Kidd

Dean

College of Engineering Science, Technology, and Agriculture Florida A&M University

Robert Lanphier III Chairman of the Board DICKEY-john Corp.

Illinois

Edward Legates Dean, College of the Agriculture and

Life Sciences

North Carolina State University

John Marvel'

president and General Manager

Research Division

Monsanto Agriculture products Co.

Missouri

Donella Meadows Adjunct Professor Resources Policy Center Dartmouth College

Don Paarlberg Consultant Indiana

Don Reeves

Consultant, Interreligious Taskforce on

U.S. Food Policy

Nebraska

Milo Schanzenbach Schanzenbach Farms

South Dakota

<sup>\*</sup> Resigned May 1985.

## Technology, Public Policy, and the Changing Structure of American Agriculture: OTA Project Staff

Roger C. Herdman, Assistant Director, OTA Health and Life Sciences Division

Walter E. Parham, Food and Renewable Resources Program Manager

Michael J. Phillips, Project Director

Yao-chi Lu, Senior Analyst

Robert C. Reining, Analyst Juliette Linzer, Research Assistant Kathryn M. Van Wyk, Editor and Writer

Administrative Staff

Patricia Durana<sup>2</sup> and Beckie Erickson, 3 Administrative Assistants Nellie Hammond, Secretary Carolyn Swarm, Secretary

Through May 1984. Through July 1985. After July 1985,