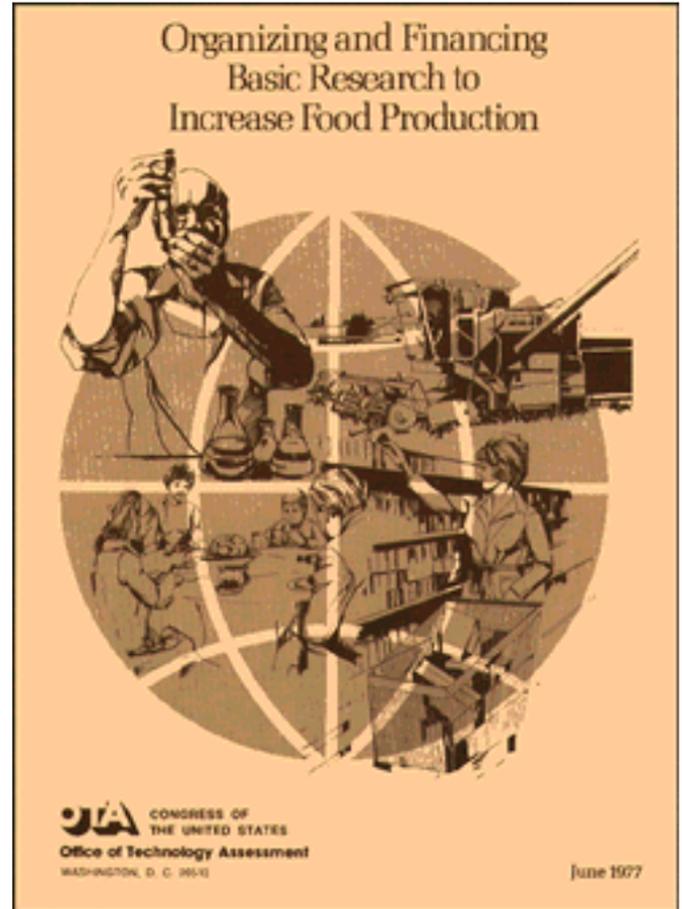


*Organizing and Financing Basic Research
To Increase Food Production*

June 1977

NTIS order #PB-273182



Organizing and Financing Basic Research to Increase Food Production

June 1977

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JUN 30 1977

The Honorable Hubert H. Humphrey
United States Senate
Washington, D. C. 20510

The Honorable Olin E. Teague
Chairman, Committee on Science
and Technology
U. S. House of Representatives
Washington, D. C. 20515

Gentlemen:

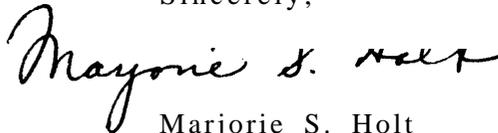
On behalf of the Board of the Office of Technology Assessment,
we are forwarding to You the report Organizing and Financing
Basic Research to Increase Food Production.

This assessment was performed in accordance with your request
to the Office of Technology Assessment and authorized by the
Technology Assessment Board on February 17, 1976.

Sincerely,

Edward M. Kennedy
Chairman

Sincerely,



Marjorie S. Holt
Vice Chairman



The Honorable Edward M. Kennedy
Chairman
Technology Assessment Board
Office of Technology Assessment
Congress of the United States
Washington, D. C. 20510

Dear Mr. Chairman:

The enclosed report, Organizing and Financing Basic Research to Increase Food Production, analyzes alternatives for organizing and financing basic research in the biological sciences. It supplements the more general report of the National Academy of Sciences, "World Food and Nutrition Study: The Potential Contributions of Research," which was issued in June 1977, and takes a world view of the potential contributions of research in food and nutrition, recommending expanded research in 22 fields.

The OTA report presents specific suggestions for congressional action. It describes and evaluates alternative organizations of basic research in the biological sciences; discusses alternative levels of increased funding for basic research in three areas that possess great opportunity for fundamental scientific discoveries (photosynthesis, nitrogen fixation, and genetic engineering for plants); and suggests alternative administrative structures for Federal support of basic research related to food production.

The assessment was requested by Chairman Olin E. Teague of the House Committee on Science and Technology and Senator Hubert H. Humphrey in his capacity as a member of the Technology Assessment Board. It was performed by OTA's Food Program Staff under the direction of J.B. Cordaro, assisted by the Food Advisory Committee and a panel of scientists representing agricultural and non-agricultural interests.

Sincerely,

DANIEL De SIMONE
Acting Director

Office of Technology Assessment

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University of Minnesota

W. D. Buddemier
University of Illinois

David Call
Cornell University

Arnold Mayer
Amalgamated Meat Cutters and
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Massachusetts Institute of
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Department of Agricultural
Economics
Texas A&M University

Preface

This assessment is an analysis of alternatives for organizing and financing basic research to increase food production. Alternative organizations of basic research are described and evaluated. Alternative levels of increased funding for basic research in three areas which possess great opportunity for fundamental scientific discoveries-photosynthesis, nitrogen fixation, and genetic engineering for plants-are proposed by a panel of scientists representing agricultural and nonagricultural interests, private research organizations, and industry. These areas are used as illustrations of how high-priority basic research may be organized and financed. This assessment does not endorse nor limit future basic research to these areas,

The assessment was requested by Senator Hubert H. Humphrey, member of the Technology Assessment Board, and Representative Olin E. Teague, Chairman, House Committee on Science and Technology. The report identifies the options available to Congress in placing a priority on an expansion in basic research to increase food production.

The ad hoc advisory panel on high-priority basic research provided detailed technical information and judgments with respect to ongoing basic research and research institutions. The permanent Food Advisory Committee provided advice and comment throughout the assessment, reviewed the final draft, and has recommended publication of this report.

The Technology Assessment Board, governing body of OTA, approves the release of this report, which identifies a range of viewpoints on a significant issue facing the U.S. Congress. The views expressed in this report are not necessarily those of the Board, the OTA Advisory Council, or of individual members thereof.