

*Agricultural Commodities as Industrial
Raw Materials*

June 1991

OTA-F-476

NTIS order #PB91-198093

GPO stock #052-003-01237-5

**Agricultural
Commodities as
Industrial Raw Materials**



CONGRESS OF THE UNITED STATES
OFFICE OF TECHNOLOGY ASSESSMENT

Recommended Citation:

U.S. Congress, Office of Technology Assessment, *Agricultural Commodities as Industrial Raw Materials, OTA-F-476* (Washington, DC: U.S. Government Printing Office, May 1991).

For sale by the Superintendent of Documents
U.S. Government Printing Office, Washington, DC 20402-9325
(order form can be found in the back of this report)

Foreword

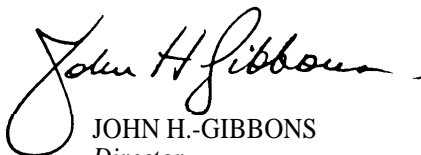
During the 1980s, American agriculture experienced widely fluctuating farm income, and many rural communities faced declining economies. These financial difficulties have led Congress to search for solutions to these problems. Because agriculture is a major industry in rural areas, diversifying agricultural markets to include industrial uses in addition to traditional food and feed markets, is viewed as a means of strengthening agricultural and rural economies. Additional concerns that could potentially be addressed by using agricultural commodities as industrial raw material sources include environmental pollution and U.S. industrial vulnerability to petroleum and strategic material supply shocks.

Congress requested the Office of Technology Assessment to assess the use of agricultural commodities as industrial raw materials. This report examines potential new crops and traditional crops for industrial uses including replacements for petroleum and imported strategic materials; replacements for imported newsprint, wood rosins, rubbers, and oils; and degradable plastics. The analysis includes an assessment of the technical, institutional, economic, and policy constraints to the development of crops for these uses; discussion of programs available for assistance; and examination of the potential implications of using agricultural commodities as industrial raw materials.

This report finds that, in the absence of additional and more comprehensive policies, developing industrial uses for agricultural commodities alone is unlikely to revitalize rural economies and solve the problems of American agriculture. However, it is possible to provide domestic sources for many imported industrial materials, some of which are considered to be of strategic importance, and potentially to replace selected petroleum-derived chemicals. And, some industrial uses of agricultural commodities offer potential to decrease certain types of environmental pollution.

This report was requested as part of a larger study examining emerging agricultural technologies and related issues for the 1990s. The study was requested by the Senate Committee on Agriculture, Nutrition, and Forestry, the House Committee on Agriculture, and the House Committee on Government Operations. Two reports issued from this study are: *Agricultural Research and Technology Transfer Policies for the 1990s* and *U.S. Dairy Industry at a Crossroad: Biotechnology and Policy Choices*. One additional report is in progress. Findings of this report are relevant to specific legislation regarding agricultural research and technology transfer that was debated for the 1990 Farm Bill. The information contained in this report was made available to Congress for that debate.

In the course of preparing this report, OTA drew on the experience of many individuals. In particular, we appreciate the assistance of all of the workshop participants. We would also like to acknowledge the critiques of the reviewers who helped to ensure the accuracy of our analysis. It should be understood, however, that OTA assumes full responsibility for the content of this report.


JOHN H.-GIBBONS
Director

OTA Project Staff—Agricultural Commodities as Industrial Raw Materials

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*

Marie Walsh, *Study Director*

Laura Dye, *Research Assistant*

Carl-Joseph DeMarco, *Research Assistant*

Susan Wintsch, *Editor*

Administrative and Support Staff

Nathaniel Lewis, *Office Administrator*

Nellie Hammond, *Administrative Secretary*

Carolyn Swam, *PC Specialist*