
Preface

Crops that are resistant to extreme weather or plant diseases, or that can produce life-saving vaccines, medicines, and vital nutrients. Farm machinery guided by Global Positioning System satellites. New farming practices that improve air and water quality, and reduce soil erosion. Instant market information via the Internet.

The future of agriculture is not on some distant horizon; it is all around us today, with innovations emerging at a breathtaking rate.

Science and technology helped revolutionize agriculture in the 20th century in parts of the world. This report – *21st Century Agriculture: A Critical Role for Science and Technology* – highlights that transformation, and how these advances can be adapted to benefit developing countries in this century.

It showcases a broad range of conventional and emerging technologies that can increase farm productivity, enhance the nutrient content of foods, and utilize new processing and marketing strategies for crops and livestock. It also discusses advances in soil, water, nutrient, pest, and risk management, and ways to improve food safety and nutrition. And it emphasizes key issues of technology transfer, and the need for sustainable agricultural systems that can remain productive in the long run.

Many factors can help or hinder the promise of scientific progress, including research, education, economic, financial, legal, and trade institutions and policies. Science and technology, in a supportive policy environment, can drive agricultural productivity increases and economic growth to alleviate world hunger and poverty. Indeed, they may be the most important tools in achieving these vital goals.

This report was developed for the *International Ministerial Conference and Expo on Agricultural Science and Technology*, held June 23-25, 2003, in Sacramento, California. It is intended to help frame discussions on how science and technology can help meet our goals of increased agricultural productivity, enhanced food security, and stronger economic growth.

Developed and developing countries must work in partnership to strengthen global food security and reduce world hunger, and ensure access to the benefits of modern agriculture. Concerted international efforts that facilitate the adoption of scientific and technological advances will help expand market opportunities and ensure that all countries have the capacity to participate in the global economy.



Ann M. Veneman
Secretary, U.S. Department of Agriculture