

# Communication Challenges and Convergence in Crop Biotechnology

**Mariechel J. Navarro**  
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Editors



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# Preface

**D**ebates on crop biotechnology have polarized stakeholders due to conflicting messages and opinions that span socio-cultural, political and even religious issues. These have elevated the technology into a social phenomenon beyond the realm of science. Indeed the dynamics of science and society affect technology acceptance and adoption. Hence, the need for mutual understanding and a planned mechanism that enables stakeholders to actively participate in its discussion and arrive at a consensus. It is in this scenario that the discipline of science communication has found a calling. Science communication allows key stakeholders to create greater awareness and understanding about the technology, and contribute to public opinion and action through informed decision making.

While the U.S. is the largest agricultural biotechnology market, the Asia Pacific region is forecast to be a significant player. Asia and Australia provide rich case studies of how science communication is being operationalized in the field of crop biotechnology. This book documents how countries, mostly in the developing world, have addressed communication challenges in the research and development process, and in some cases, actual commercialization of biotech crops. From the experiences of these countries emerge lessons learned which contribute to a better appreciation and understanding of the crucial role of science communication in the laboratory to farmers' field continuum.

Part 1 consists of two chapters that define the status of crop biotechnology and science communication and how they relate to each other. To set the communication setting, Chapter 1 gives an overview of the global status of crop biotechnology in general, and the scenarios in Asia and Australia in particular. It highlights the tremendous opportunities of the technology especially in developing countries where numerous products await commercialization to address food and fiber production challenges as well as related issues on nutrition and bioenergy. The future of crop biotechnology, however, will rely on a favorable policy atmosphere for commercialization as well as consumer acceptance. Situating science communication in the context of crop biotechnology is the focus of Chapter 2. To address the challenges set in Chapter 1, science communication's role is presented. A cadre of trained science communicators make possible an informed public, science-based decision making, and stakeholders with increased capability, equity, and empowerment.

Part 2 presents eight case studies of representative countries in Asia and Australia. These are biotech mega-countries (those which grew 50,000 hectares or more

of biotech crops) namely China, India, Philippines, and Australia; and potential biotech countries of Bangladesh, Malaysia, Thailand and Vietnam. Except for Australia's case study which was authored by a science communication expert from Australian Government's Department of Innovation, Industry, Science and Research, the rest are written by members of the Global Knowledge Center on Crop Biotechnology as well as the Biotechnology Information Centers (BICs). They are part of the information network of the International Service for the Acquisition of Agri-biotech Applications (ISAAA) in Asia, Africa, Latin America, and Europe. The network, along with other public and private sector players in different countries are working together to create an enabling environment for the safe application of crop biotechnology; generate, process, and package information on crop biotechnology; facilitate sharing of knowledge among various stakeholders; and develop and validate appropriate science communication modalities.

Case studies of regional science communication activities are presented in Part 3. These showcase inter-country strategies to widen awareness and understanding of crop biotechnology as exemplified by activities of the Organization of Islamic Countries (OIC). Realizing the importance of science communication initiatives, initial resources are now being allotted to institutionalize such efforts in member countries. Experiences of the plant science industry in knowledge sharing and exchange in plant biotechnology are also discussed. It notes the need to foster balanced discussions by engaging stakeholders in open conversations; and in respecting the interconnectedness of ecosystems that integrates biotechnology within the gamut of the natural and social sciences, and ethics.

The last chapter is a synthesis of the case studies consolidating the lessons learned on science communication, and the way forward. The case studies show that despite diversity in culture, political set-up, economic development, religious beliefs, and language, countries have been able to address specific communication issues that impede or hasten the development of crop biotechnology. An appreciation of science communication and appropriate strategies have led to a better understanding of the societal environment where the technology can best thrive. The collective and collaborative efforts of countries and regional initiatives have converged to form a consensus on crop biotechnology.

This book is meant for all those involved in science communication. It is not only for those directly doing work in the field, but also to a growing breed of stakeholders who view science and communication not as separate disciplines, but as synergistic components necessary to bring about change, development, and transformation in individuals, institutions, and society.

Mariechel J. Navarro and Randy A. Hautea

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Dr. Cynthia T. Hedreyda, director of the Molecular Biology and Biotechnology of the University of the Philippines (UP) Diliman, gave constructive comments to improve the manuscript and highlight key findings for emphasis. Dr. Cleofe S. Torres, dean of the College of Development Communication in UP Los Baños (CDC UPLB), provided a meticulous editorial eye that smoothed the rough edges of this publication. Dr. Rhodora R. Aldemita of ISAAA checked on technical accuracy and organizational flow.

Those who shared the stress and excitement in the production of this book also deserve acknowledgment. Clement Dionglay conceptualized the overall design, did the layout, and improved figures, tables and photos. Eric John Azucena designed the cover and discovered the secrets of InCopy to reduce editorial work. Donna Bae Malayang did literature review and assumed responsibility for the details involved in formatting references, acronyms, and index. Kristine Grace Natividad assisted in the proofreading of chapters and in finalizing specific portions of the book. Thanks also to the rest of the ISAAA staff who provided various forms of assistance and interest in this book.

Lastly, two people provided the motivation to complete this book. Dr. Gelia T. Castillo, National Scientist (Philippines), encouraged the authors to contribute to the robust knowledge of science communication and share the lessons learned from ISAAA's global knowledge sharing initiatives. The pioneering and passionate discourses in science communication by the late Dr. Juan F. Jamias, professor emeritus of CDC UPLB, provided the spark for the field to develop.

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