Preface

The first ideas for this book were developed in the late 1960s and early 1970s, as part of my doctoral dissertation in Operations Research and Social Systems Science at the University of Pennsylvania, which was prepared under the direction of professors Russell Ackoff and Eric Trist. The creation of the National Research Council in Peru and the encouragement of Alberto Giesecke Matto, its first President, provided the initial motivation for the research that led to the dissertation. That work was supported by the Technological Development Unit of the Organization of American States, directed by Máximo Halty Carrère, and carried out at the Secretariat of the Andean Common Market and at the Peruvian Ministry of Industry. My ideas evolved in discussions with Jorge Sábato, Miguel Wionczek, Amílcar Herrera, Marcel Roche, Víctor Urquidi, Mauricio Guerrero, Pedroleón Díaz, Alejandro Moya, Carlos Martínez Vidal, Isaías Flit, Gustavo Flores, Gastón Oxman, Luis Soto Krebs and Constantino Vaitos. The first of my papers on the subject was published in a volume edited by Eugene and Victor Rabinowitch in 1972.

My subsequent involvement in the Science and Technology Policy Instruments (STPI) project provided a rich source of material, ideas, experiences and case studies, as well as intense interactions with dozens of researchers and policy-makers from many developing countries. An intense period of work with Alberto Aráoz, Carlos Contreras, Onelia Cardettini, Alejandro Nadal, Eduardo Amadeo, Luis Stuhlman, Fernando Chaparro, Fabio Erber, Jose Tavares, Ignacio Ávalos, Dulce de Uzcátegui, Yolanda Fombona, KunMo Chung, DukNon Yoon, ChanMo Park, Anil Malhotra, Nikola Kljusev, Adel Sabet, Fernando Gonzáles Vigil, Roberto Wangeman, Genevieve Dean and other members of the STPI national teams and the Field Coordinator’s Office, gave me a unique opportunity to see first hand the science and technology policy problems faced by a wide variety of developing countries. The STPI project was primarily supported by the science and technology policy research program of the Canadian International Development Research Centre (IDRC), directed by Geoffrey Oldham whose continuous and generous support over several decades is most gratefully acknowledged. The dissemination of the results of this project, which were undertaken in the late 1970s, provided additional occasions to write and reflect on the problems of science and technology for development. A period of work for the Secretariat of the
1979 United Nations Conference on Science and Technology for Development provided an opportunity to write the position paper of the Secretariat under the supervision of Guy Gresford. In parallel, an involvement with the International Foundation for Development Alternatives (IFDA), headed by Marc Nerfin, helped to sharpen my views on the importance of non-Western knowledge and technology, and also provided an opportunity to learn from professor Ignacy Sachs. Other persons that helped to shape my ideas during this period include Jim Mullin, Louis Berlinguet, Ruth Zagorin, Charles Weiss, Princeton Lyman, Martin Lees, Lennart Båge, Jurg Mahner, Tony Tillet, Anna Jaguaribe and Amilcar Ferrari.

During the 1980s I continued to work on science and technology issues at GRADE, a Peruvian think tank with which I was involved for several years. With support from the IDRC, from the Swedish Agency for Research Cooperation (SAREC), and from other international cooperation agencies and foundations, a number of research projects on science, technology and development were carried out during this period. At the same time, I became a member of the Board of the Peruvian National Council for Science and Technology, a consultant to several national and international organizations dealing with science and technology for development, and also member (later Chairman) of the United Nations Advisory Committee on Science and Technology for Development. An assignment as chairman of the evaluation team for the International Foundation for Science, work with the United Nations Industrial Development Organization (UNIDO) on market structure and technological behavior, and an involvement with two panels of the United States National Academy of Sciences provided additional opportunities to broaden my perspective on these issues.

Work on science, technology and development continued intermittently during my tenure as Chief of the Strategic Planning Division and Senior Advisor at the World Bank in the late 1980s and early 1990s, I had the opportunity to interact with and learn from Carl Dahlman, Colin Bradford, John Stremlau, Sven Arrhenius, David Hopper and Alexander Shakow, among other World Bank colleagues. During this period I became a member of the Task Force on Science and Technology for Development of the Carnegie Commission on Science and Technology (co-chaired by Rodney Nichols and Jimmy Carter). A project sponsored by the United Nations University, coordinated jointly with Jean-Jacques Salomon and Céline Sachs-Jeantet provided an opportunity to work with a select number of high-level experts in the preparation of a textbook on science and technology for development.

Upon my return to Peru in 1993, research on the role of knowledge in development continued with support of the Carnegie Corporation of New York, headed by David Hamburg and whose science and development program was directed first by Patricia Rosenfield and subsequently by Akin
Adubifa. Work as advisor to the President of the Canadian International Development Research Centre, Keith Bezanson, provided a unique opportunity to interact with him and to appreciate the practical problems of an agency dedicated to building science and technology capacities in developing countries.

An involvement with the World Bank team in charge of the 1998 World Development Report, and with the United Nations Development Programme (UNDP) team in charge of the 2001 Human Development Report, both of which dealt with science and technology for development, provided intellectual stimulus and the opportunity to interact with colleagues interested in the same issues. A decade of work with Agenda: PERÚ in the design of a development strategy for the country through a highly participatory process, helped to place science and technology issues in perspective, linking them to urgent development needs. My work in Agenda: PERÚ also allowed me the opportunity to learn from Max Hernández.

Finally, the opportunity for preparing this book was provided by a grant from the Rockefeller Foundation’s program on Global Inclusion, directed by Janet Maughan, which involved joint work with the Center for Global Studies (CGS) at the University of Victoria, Canada. A technical meeting to review a draft of this book was held in Lima and Urubamba in October 2002, with the participation of Carlos Abeledo, Keith Bezanson, Barry Carin, KunMo Chung, Janet Maughan, Geoffrey Oldham, Hebe Vessuri and Amitav Rath, all of whom provided valuable suggestions. I am thankful to Leslie Kenny of the Global Studies Center at the University of Victoria, Canada, for her most helpful editorial suggestions.

During the last 30 years I have written and published a number of papers, articles, monographs and books on science, technology and development. Preparing this book has involved a considerable effort to select and synthesize a large amount of material. In addition to Fernando Prada, Ursula Casabonne and Mario Bazán, the research assistants who have helped in the preparation this book, during the last two decades I have benefited from the support of several outstanding young scholars in reviewing and processing source material. Among these, I would like to mention Eliana Chrem, Gonzalo Alcalde, Michael Colby, Gregorio Arévalo, Juana Kuramoto, Fernando Hesse, Carlos Paredes, Gonzalo Garland, Cecilia Cook, Rubén Berrios, Alberto Pascó-Font and Javier Escobal.