

Greening Industry: New Roles for Communities, Markets, and Governments

A World Bank Policy Research Report

Greening Industry: New Roles for Communities, Markets, and Governments

Published for the World Bank
Oxford University Press

Oxford University Press

OXFORD NEW YORK TORONTO
DELHI BOMBAY CALCUTTA MADRAS KARACHI
KUALA LUMPUR SINGAPORE HONG KONG TOKYO
NAIROBI DAR ES SALAAM CAPE TOWN
MELBOURNE AUCKLAND

and associated companies in

BERLIN IBADAN

© 2000 *The International Bank for Reconstruction
and Development / The World Bank*
1818 H Street, N.W.,
Washington, D.C. 20433

Published by Oxford University Press, Inc.
198 Madison Avenue, New York, N.Y. 10016

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Manufactured in the United States of America
First printing October 1999

*Cover credits: front cover, Tiantyo Bangun-Indo Pix; back cover, from top to bottom,
Curt Carnemark/World Bank, Curt Carnemark/World Bank, Corbis*

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Library of Congress Cataloging-in-Publication (CIP) Data.

*Greening industry : new roles for communities, markets, and governments /
Development Research Group, World Bank.*

p. cm.

Includes bibliographical references.

ISBN 0-19-521127-8

*1. Pollution—Developing countries. 2. Environmental policy—Developing
countries. 3. Sustainable development. I. World Bank.*

Development Research Group.

HC59.72.P55G74 1999

333.7—dc21

99-15989

CIP



This book was printed using recycled paper and soy based ink.

The cover stock is 12pt. Cornwall, 15% post consumer waste.

The cd sleeve is 10pt. Cornwall, 15% post consumer waste.

The text stock is 70 # Mohawk 50% recycled, with 15% post consumer waste.

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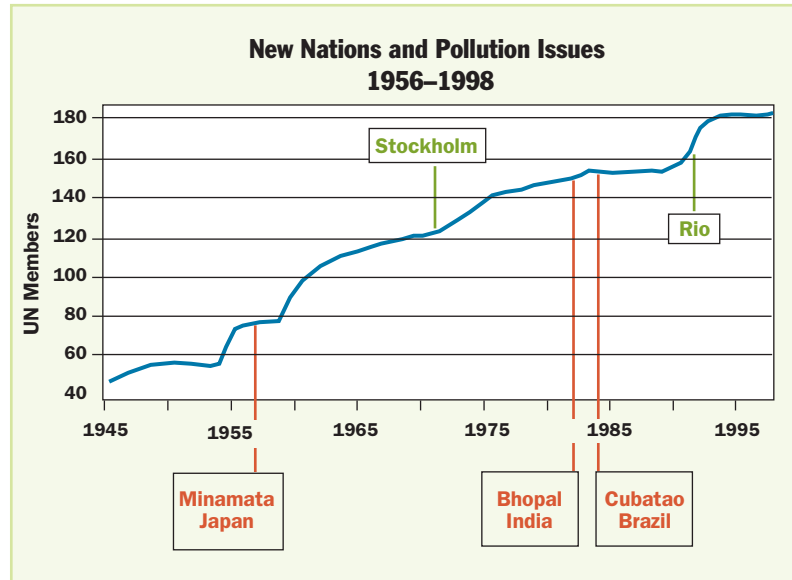
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Foreword

Over one hundred developing countries have joined the United Nations since Japan's Minamata disaster in 1956. Almost all have environmental agencies, in part because Japan's tragic encounter with heavy-metal poisoning helped spark an international effort to control industrial pollution. The first phase of this effort culminated in 1972, when the United Nations established its Environment Programme and the international community convened the Stockholm Conference on Sustainable Development. Between Stockholm and the Rio Earth Summit in 1992, most developing countries set up institutions to regulate pollution. They made steady progress, although it was usually eclipsed by media coverage of disasters such as the lethal landslides in Cubatao, Brazil, and the pesticide factory explosion in Bhopal, India, which killed and injured thousands.

Still, pollution regulation arrived in the developing world as an import. Instead of creating new approaches from scratch, most agencies adopted traditional command-and-control regulation with technical assistance from the OECD countries. Unfortunately, this particular import didn't always adapt well to local conditions. By the early 1990s, regulators in many countries had concluded that conventional methods were too expensive and often ineffective. Innovators began experimenting with new approaches, and some yielded excellent results. At the same time, many national economic reforms were proving to be effective in fighting pollution.

In this report, we show why these macro and regulatory policy reforms are defining a new model for pollution control in developing countries. We write as participant-observers, because we have helped establish programs as well as studied their impact. Since 1993, we have been privileged to collaborate with pioneers of the new approach in Jakarta, Bogota, Beijing, Rio, Manila, Mexico City,



and elsewhere. This report is really their story. It is also the story of our colleagues in the World Bank and other international agencies. Behind the scenes, they have worked tirelessly to provide new environmental agencies with financial support, technical assistance, and information about the progress of reform in other countries.

The news we bring is hopeful. After six years of research, policy experimentation, and firsthand observation, we believe that environmentally sustainable industrial development is within reach. Greening industry will take time, but even the poorest countries can accomplish it. In this report we show why, and suggest strategies for moving forward.

The Report Team

The principal author of **Greening Industry: New Roles for Communities, Markets, and Governments** is David Wheeler, Lead Economist for the Infrastructure/Environment Team of the World Bank's Development Research Group. **Greening Industry** summarizes six years of research and project work by a core team of economists, environmental engineers, and policy analysts: Shakeb Afsah, Susmita Dasgupta, David Gray, Raymond Hartman, Hemamala Hettige, Mainul Huq, Benoit Laplante, Robert Lucas, Nlandu Mamingi, Muthukumara Mani, Paul Martin, Craig Meisner, Sheoli Pargal, David Shaman, Manjula Singh, Hua Wang, David Witzel and Ping Yun. The report was produced under the direction of Joseph Stiglitz, Lyn Squire, Paul Collier, and Zmarak Shalizi.

To learn more about the World Bank's research in this area, please visit the **New Ideas in Pollution Regulation** website at <http://www.worldbank.org/nipr>. Material from this website is also included on the CD-ROM that accompanies **Greening Industry**.

Acknowledgments

This report is the product of an extensive research effort by the World Bank's Development Economics Vice Presidency. The cornerstone of our research strategy has been a program of collaboration with developing-country environmental agencies in the design, implementation and evaluation of new approaches to pollution control. As participant-observers, we have learned a tremendous amount from the pioneers who are showing how innovative programs can reduce pollution significantly, even in very poor countries. We are particularly indebted to the following colleagues:

Brazil—from the Environmental Protection Agency for Rio de Janeiro State, FEEMA: Sergio Margulis, former President, Paulo de Gusmao, former Director for Environmental Planning, and Joao Batista; from the Brazilian Institute for Geography and Statistics, IBGE: José Enílcio Rocha Collares, Chief of DERNA, Patrícia Portella Ferreira Alves, Chief of DIEAM, Eloísa Domingues, ISTAM Project Manager, Rosane de Andrade Memoria Moreno and Lucy Teixeira Guimarães, Technical Team, Industrial Pollution Project; from the Environmental Protection Agency for Sao Paulo State, CETESB: Luis Carlos da Costa.

China—from the State Environmental Protection Agency, SEPA: Kunmin Zhang, Deputy Administrator, Xiaomin Guo, Fengzhong Cao and Qingfeng Zhang; from the Chinese Research Academy of Environmental Sciences, CRAES: Jinnan Wang and Dong Cao; from Nanjing University: Genfa Lu.

Colombia—from the Ministry of the Environment, Office of Economic Analysis: Thomas Black Arbelaez, Director, Martha Patricia Castillo, Ana Maria Diaz-Cicerés and Maria Claudia Garcia; from the pollution control agency for Oriente Antioqueno, CORNARE: Leonardo Munoz Cardona, Director and Luis Fernando Castro, Pollution Control Director.

India—from the Central Pollution Control Board: Dilip Biswas, Chairman; from the Environmental Protection Training and Research Institute: C. Uma Maheswari, Joint Director; from the Andhra Pradesh Pollution Control Board: Tishya Chatterjee.

Indonesia—Sarwono Kusumaatmadja, former State Minister of Environment; from Indonesia's Environmental Impact Management Agency, BAPEDAL: Nabel Makarim, former Deputy for Pollution Control, Made Setiawan and Dama Ratunanda.

Mexico—from the Secretariat for Environment, Natural Resources and Fisheries, SEMARNAP; National Institute for Ecology, INE: Francisco Giner de los Ríos, General Director for Environmental Regulation, Adrián Fernández Bremauntz, Director General for Environmental Management and Information, Luis R. Sánchez Cataño, Director for Metropolitan Environmental Management, and Luis F. Guadarrama.

Philippines—from the Department of Environment and Natural Resources, DENR: former Minister Victor Ramos and Bebet Gozun; from the University of the Philippines: Tonet Tanchuling and Alex Casilla.

We are indebted to many colleagues in the World Bank who have directly supported our work and/or participated in our collaborative program: Kulsum Ahmed, Adriana Bianchi, Dan Biller, Carter Brandon, Richard Calkins, Cecilia Guido-Spano, Ken Chomitz, Maureen Cropper, Shelton Davis, Adrian Demayo, Michelle De Nevers, Charles DiLeva, Yasmin D'Souza, Evelyn de Castro, Clara Else, Gunnar Eskeland, Ben Fisher, Kristalina Georgieva, David Hanrahan, Patrice Harou, Nicholas Hope, Patchamuthu Illangovan, Gregory Ingram, Maritta Koch-Weser, Vijay Jagannathan, Emmanuel Jimenez, Todd Johnson, Andres Liebenthal, Lawrence MacDonald, Anna Maranon, Richard Newfarmer, Saed Ordoubadi, Mead Over, Jan Post, Violetta Rosenthal, Elizabeth Schaper, Teresa Serra, Katherine Sierra, Lyn Squire, Andrew Steer, Laura Tlaiye, Lee Travers, Walter Vergara, Joachim Von Amsberg, Konrad Von Ritter, Thomas Walton and Roula Yazigi.

We would also like to thank the following World Bank colleagues for their assistance, advice, and insights: Richard Ackermann, Jean Aden, Nick Anderson, Bernard Baratz, Carl Bartone, Roger Batstone, Antonio Bento, Jan Bojo, Annice Brown, Shantayanan Devarajan, John Dixon, David Dollar, Alfred Duda, Jack Fritz, Richard Gains, Robert Goodland, Daniel Gross, Kirk Hamilton, Jeffrey Hammer, Nagaraja Rao Harshadeep, Gordon Hughes, Frannie Humplick, Ian John-

son, Bjorn Larsen, Stephen Lintner, Magda Lovei, Kseniya Lvovsky, Dennis Mahar, Desmond McCarthy, Jean-Roger Mercier, Ashoka Mody, Carl-Heinz Mumme, Lant Pritchett, Ramesh Ramankutty, Geoffrey Read, John Redwood, Jitendra Shah, Sudhir Shetty, Karlis Smits, Sari Soderstrom, John Williamson, Jian Xie and C.H. Zhang.

Book design, editing, and production were directed and managed by the Production Services Unit of the World Bank's Office of the Publisher. Sandra Hackman played a major role in editing the report. David Shaman coordinated production of the report for the Bank's Development Research Group.