

Environmental Industry Project

Ryokichi Hirono
Project Leader

1. Overview

1.1. Background, overview, and approach

Asian countries have experienced a high rate of economic growth—with the exception of the 1997/98 monetary crisis—over a period spanning more than 30 years from the 1960s until today. Among these countries, China has steadily enhanced its role as a world industrial hub since the introduction of a market economy in 1978. During this period, however, care for the environment has been neglected in the rush for economic growth in these countries. Taking this current situation into consideration, the Environment Industry (EI) Project investigated the current status of the development of the environmental industry, essential for the realisation of sustainable development in these countries, and makes specific recommendations for the future.

It was the intention of the EI Project to provide an overview of the specific policy measures adopted by the governments of a few selected developing countries in the Asia-Pacific region (China, India, Indonesia, and the Republic of Korea) that have helped develop and accelerate their environmental technology, management know-how, and environmental hardware industry. These countries were chosen in order to illustrate the different stages of development that exist in the Asia-Pacific region, analyse the different structures and packages of government policies observed among the four countries, and assess the effectiveness of these specific policy measures. The project also offers some recommendations for the accelerated development of the environmental industry.

As part of the EI Project the development of the following specific issues over the last few decades in each target country were examined:

- the current status of, and major issues facing, environmental industry development;
- major government policy measures for promoting environmental industry development;
- the contributions, both positive and negative, of foreign multinational corporations to environmental industry development; and
- the contributions, if any, of foreign bilateral and multilateral donors to environmental industry development.

The Environmental Industry Project organised a study group and an advisory group to research the development of environmental industry in Asian countries, and to review the author's recommendations to central governments in the target countries, donors, and domestic and foreign private sectors.

Environmental experts from industry and academia were invited to the study group meetings to exchange information on environmental industry development in China, India, Indonesia, and the Republic of Korea. The EI Project also held a number of international workshops at the IGES headquarters. These resulted in a report, written by study group members and foreign research collaborators, with the aim of influencing the future development of the environmental industry.

1.1.1. Study group members of the Environmental Industry Development Project

- Prof. Ryokichi Hirono, Professor Emeritus, Seikei University/IGES-EI Project Leader
- Mr. Yoshiaki Nakaune, General Manager, International Management Association of Japan (IMAJ), Inc./IGES-EI Project Visiting Research Fellow
- Ms. Taeko Takahashi, IGES-LTP Research Associate/IGES-EI Project Observer
- Dr. Kozo Kido, Environmental Cooperation Advisor, Environmental Cooperation Center on International Environmental Cooperation, Kitakyushu
- Dr. Michael M. Gucovsky, Partner, Sustainable Development Advisor, and former Deputy Assistant Administrator, United Nations Development Programme (UNDP), and Senior Advisor, UNDP/World Bank-managed Global Environment Facility (GEF)
- Dr. Taek-Whan Han, Professor, Seo Kyeong University
- Mr. Harpreet Singh Kandra, Research Associate, Tata Energy Research Institute
- Dr. R. T. M. Sutarnihardja, Senior Advisor, Minister of Environment, Government of Indonesia/IGES Trustee
- Dr. Lin Yan, Belfer Center for Science and International Affairs, Harvard University and Researcher, China Research Center on Environment and Development, Beijing
- Ms. Tomoe Karasawa, IGES-EI Project Research Secretary
- Ms. Eiko Kitamura, IGES-EI Project Research Secretary

1.1.2. Advisors to the study group

- Mr. Akinori Ogawa, Director, Environmental Cooperation Office, Global Environmental Bureau, Ministry of the Environment
- Mr. Tadahiro Mitsuhashi, Professor, Chiba University of Commerce Faculty of Policy Informatics/IGES Board Member
- Mr. Hiroshi Ohta, Professor, Aoyama Gakuin University School of International Politics, Economics and Business (SIPEB)
- Mr. Kazumasa Katou, Department of The Japan Fund for Global Environment, Japan Environment Corporation

1.2. Major activities and achievements

1.2.1. Study group meetings

Study group meetings were held eight times, and outside lecturers were invited from such areas as private sector corporations, consulting organisations, development institutions, and government banks. Each lecturer was an expert in the selected field and shared their rich practical experiences and knowledge for improving the planning and implementation of the current project. Study group members and advisory group members participated in the study group's discussions and contributed their own perspectives. The following is a list of the meetings, topics, and lecturers:

- 27 May 2002 Selection of lecture themes and scheduling of lecturers
- 5 June 2002 Industries for environmental monitoring in China
Lecturer: Mr. Manabu Tani, Director, Green-Blue Co. Ltd.
- 16 July 2002 Environmental industries in China
Lecturer: Mr. Senro Imai, Senior Advisor, Institute for International Cooperation, Japan International Cooperation Agency
- 22 August 2002 Contribution and challenges of the private sector toward the environmental industry
Lecturer: Mr. Hiroyuki Fujimura, Director/President, Ebara Corporation
- 18 September 2002 Measures undertaken by Matsushita Electric Industrial Co. Ltd. in its overseas subsidiaries

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- 31 October 2002
Lecturer: Mr. Shinichi Imai, Matsushita Electric Industrial Co., Ltd., Corporate Environmental Affairs Division/IGES Visiting Senior Research Fellow
Eco-financing
- 22 April 2003
Lecturer: Mr. Takayuki Yamamoto, Director, Environmentally Sustainable Development Group, Development Bank of Japan
Environmental industries in China
- 30 May 2003
Lecturer: Prof. Ryokichi Hirono, Professor Emeritus, Seikei University/IGES-EI Project Leader)
Contribution of The Japan Fund for Global Environment for Environmental Industry Development
Lecturer: Mr. Kazumasa Katou, The Japan Fund for Global Environment, Japan Environment Corporation

1.2.2. Workshops on environmental industry

a. First workshop: 14–15 December 2002

At the first workshop the researchers assigned to each of the target countries and the Japanese researchers began by giving an overview of the current situation of the environmental industry in each country, the contribution of the governments at that time to environmental industry development, and the contribution of the donor organisations of developed countries and multinational companies. The following is a list of participants:

- Prof. Ryokichi Hirono, Professor Emeritus, Seikei University/IGES-EI Project Leader
- Mr. Yoshiaki Nakaune, General Manager, International Management Association of Japan (IMAJ), Inc./IGES-EI Project Visiting Research Fellow
- Ms. Taeko Takahashi, IGES-LTP Research Associate/IGES-EI Project Observer
- Dr. Kozo Kido, Environmental Cooperation Advisor, Environmental Cooperation Center on International Environmental Cooperation, Kitakyushu
- Mr. Yoshihiro Muto, Office for International Environmental Cooperation, Environment Bureau, City of Kitakyushu
- Dr. Taek-Whan Han, Professor, Seo Kyeong University
- Mr. Harpreet Singh Kandra, Research Associate, Tata Energy Research Institute
- Dr. R. T. M. Sutamihardja, Senior Advisor, Minister of Environment, Government of Indonesia/IGES Trustee
- Ms. Tomoe Karasawa, IGES-EI Project Research Secretary

b. Second workshop: 14–15 June 2003

Further discussions at the second workshop, which included a researcher from the United States, took place concerning how and to what extent international organisations, multinational companies, and cooperation between cities had contributed to environmental industry development in China, India, Indonesia, and the Republic of Korea, with particular emphasis on producing recommendations for these countries. The following is a list of participants:

- Prof. Ryokichi Hirono, Professor Emeritus, Seikei University/IGES-EI Project Leader
- Mr. Yoshiaki Nakaune, General Manager, International Management Association of Japan (IMAJ), Inc./IGES-EI Project Visiting Research Fellow
- Ms. Taeko Takahashi, IGES-LTP Research Associate/IGES-EI Project Observer
- Dr. Kozo Kido, Environmental Cooperation Advisor, Environmental Cooperation Center on International Environmental Cooperation, Kitakyushu
- Mr. Yoshihiro Muto, Office for International Environmental Cooperation, Environment Bureau, City of Kitakyushu

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- Dr. Michael M. Gucovsky, Partner, Sustainable Development Advisor and former Deputy Assistant Administrator, UNDP, and Senior Advisor, UNDP/World Bank-managed Global Environment Facility (GEF)
- Dr. Taek-Whan Han, Professor, Seo Kyeong University
- Mr. Harpreet Singh Kandra, Research Associate, Tata Energy Research Institute
- Dr. R. T. M. Sutamihardja, Senior Advisor, Minister of Environment, Government of Indonesia/IGES Trustee
- Mr. Kazumasa Katou, Department of The Japan Fund for Global Environment, Japan Environment Corporation
- Ms. Eiko Kitamura, IGES-EI Project Research Secretary
- Ms. Tomoko Ishikawa, Research Supporting Section, IGES

1.2.3. Field studies conducted by Prof. Hirono, EI Project Leader

- 11–14 September 2002 Beijing and Seoul, for discussion with paper authors and associates
- 26–28 January 2003 Shanghai, for meetings with Shanghai Environment Bureau and Mitsubishi Corporation, Shanghai Branch
- 16–19 March 2003 Beijing, for participation and paper presentation at an international workshop on China’s environmental industry organised by China Association of Environment Protection Industry
- 18–20 July 2003 Paris, for meeting with Environment Directorate, OECD
- 1–3 August 2003 Bangkok, for discussion with academics, corporate staff, and NGO representatives on environmental issues and industry development in the Kingdom of Thailand

1.2.4. Report publication: *Environmental Industry Development in Selected Asian Developing Countries: China, India, Indonesia, and Republic of Korea*

Part I: Introduction and Summary of the Findings and Recommendations, by Prof. Ryokichi Hirono and Dr. Mike Gucovsky

Part II: Country Studies

- Environmental Industry Development in China: Major Policies, Issues and Prospects, by Prof. Ryokichi Hirono, assisted by Dr. Lin Yan
- Environmental Industry Development in Developing Asian Countries—Case of India, by Mr. Harpreet Singh Kandra
- Promoting Technology and Business Partnership for Sustainable Development through Environmental Industry: Indonesia Case, by Dr. RTM Sutamihardja
- Environmental Industry in Korea—Current State, Prospects and International Cooperation Potentials, by Dr. Taek-Whan Han
- Small and Medium-Sized Enterprises (SMEs) for Sustainable Development, by Ms. Taeko Takahashi

Part III: Role of External Factors in Environmental Industry Development

- The Major Contributions of Japan’s ODA and Japanese Multinational Corporations to Environmental Industry Development, by Mr. Yoshiaki Nakaune
- International Environmental Cooperation between Kitakyushu and Asian Cities—Fostering Environmental Industries, by Mr. Kozo Kido
- Drivers of Environmental Industry in Asia: Bilateral and Multilateral Cooperation and Multinational Corporations, by Dr. Michael M. Gucovsky

1.3. Major achievements

The EI Project organised the study group, the advisory group for the study group, and foreign research collaborators by first selecting the most appropriate person for each project. At the eight study meetings, project members discussed the current state and problems of the environmental industry in Asian developing countries, especially in China, India, Indonesia, and the Republic of Korea. The discussions in the study group meetings were found to be quite essential in enhancing the quality and perspectives of the outcome of the EI Project.

The EI Project held two international workshops, one in 2002 and the other in 2003. The discussion at the first international workshop, with the participation of research collaborators from India, Indonesia, the Republic of Korea, and Kitakyushu, was quite useful in improving the understanding of the study group members regarding the current state and major issues of promoting environmental industry in each of the target countries, as well as to come to a consensus on what and how to revise their first drafts. The first workshop also contributed to identifying the commonality of policies and issues on the development and acceleration of environmental industry among the target countries.

At the second international workshop, further discussions (that included a researcher from the United States) took place concerning how and to what extent international organisations, multinational companies, and cooperation between cities had contributed to environmental industry development in China, India, Indonesia, and the Republic of Korea, with particular emphasis on recommendations for these countries. The comments at the workshop were also very useful for members in the revision of their drafts.

The EI Project published a report, titled *Environmental Industry Development in Selected Asian Developing Countries: China, India, Indonesia, and Republic of Korea*, as a proposal for the future development of environmental industry in Asian developing countries, especially in China, India, Indonesia, and the Republic of Korea, as a result of research activities and discussion of study group meetings and international workshops.

In the original project plan, research collaborators from Germany and the United Nations Development Programme (UNDP) were expected to join the research project and attend the international workshops, but the plan was revised thanks to the participation of Dr. Gucovsky, former UNDP Deputy Assistant Administrator, who accepted the project leader's request to write a paper on the contribution of both developed countries (multinational corporations and official development assistance) and international organisations to the development of environmental industry in Asian countries. There were other changes to the original project plan, but the final EI Project report was able to achieve the same purpose through the cooperation of research collaborators. And the EI Project also had the good fortune of receiving a paper from China's research collaborator.

2. Self-evaluation

2.1. Evaluation of achievements

The published report will serve as an important source for investigating what policies are fostering the environmental industry and whether they are promoting its development in the target countries of China, India, Indonesia, and the Republic of Korea. The knowledge contained in this report will help them in their autonomous development and promotion of their own environmental industry through the developing countries' promotion of the development of human resources and the abilities of their organisations. It will also serve as the basis for specific policy proposals that will make further assistance from the international community possible. Hopefully, it will also contribute to the diversification of environmental technology and the coexistence of economic growth compatible with the environment in developing countries.

2.2. Evaluation of project management

The EI Project was mainly carried out by visiting researchers and research collaborators from outside of IGES. Even though the project members were not familiar with IGES' project management system, it was carried out satisfactorily with the full support and cooperation of IGES staff, especially with the support of the research secretaries. The research secretary system proved to be very useful for carrying out research projects by outside researchers.

3. Conclusion

The harmonisation of development and the environment is one of the most important issues in the world, especially in developing countries. In some countries, the environment has been neglected in the rush for economic growth. We are happy if the fruits of the EI Project provide opportunities to the autonomous development and promotion of the environmental industry through the development of human resources and the abilities of organisations in developing countries.