JICA

No.

Thematic Evaluation (Environment) by External Party

Environmental Center Approach: Development of Social Capacity for Environmental Management in Developing Countries and Japan's Environmental Cooperation

Feedback Seminar Report

March 2004

Evaluation Team on Environmental Cooperation,
Japan Society for International Development (JASID)

PVE
JR
04-02

Acknowledgement

Under the current severe financial situation and prolonged economic stagnation an expansion of project evaluation for more effective and efficient assistance is required in Japan. In 1999, the Japan International Cooperation Agency (JICA), the execution organization for Japan's ODA, started "evaluations by external organizations" as a part of the expansion of evaluation by introducing third party perspectives to the process and has handed the evaluations over to external organizations that have expertise in various development tasks.

The specific evaluation theme, “Environmental Center approach: Development of Social Capacity for Environmental Management in Developing Countries and Environmental Cooperation” implemented in 2002, is one of the "evaluations by external organizations". It was handed over to the Japan Society for International Development, the biggest academic society in this field in Japan and one has abundant domestic human resources and wide ranging overseas networks.

In 2003, feedback seminars in Japan and recipient countries for evaluation research (Indonesia, Thailand, and China) were held to openly share the evaluation results with the parties concerned and to get opinions on the evaluation results.

One of the main purposes of evaluations by JICA is to improve the learning effects on the persons and organizations related to the assistance for the execution of more effective projects.

Moreover, we think that public discussion of the results is essential for JICA to support the people's understanding and support of ODA. To accomplish the purpose of these evaluations, JICA not only has made public announcement of evaluation results through publication of reports, but also has placed the evaluation results on their homepage and has made feedback on the evaluation results possible by holding seminars in Japan and abroad.

As part of the feedback on evaluation results, this report summarizes discussion and proposals at the feedback seminars about the theme “Environmental Center approach: Development of Social Capacity for Environmental Management in Developing Countries and Environmental Cooperation”, which was given to the Japan Society for International Development and implemented in Japan and three recipient countries for research.

We wish to express our gratitude to everybody for giving us so much cooperation and support for these feedback seminars.

March 2004

Yasuo Matsui

Vice President

Japan International Cooperation Agency

Preface

This report provides a summary of the feedback seminars regarding the Thematic Evaluation (Environment), "Environmental Center approach: Development of Social Capacity for Environmental Management in Developing Countries and Environmental Cooperation", which the Evaluation Team on Environmental Cooperation in the Japan Society for International Development implemented in 2003.

After repeated discussions concerning the evaluation methodology for Environmental Centers through preparatory meetings of the advisory committee by JICA, whose first meeting was held in December 2001, the evaluation of projects from the Environmental Center approach was undertaken by the Evaluation Team on Environmental Cooperation in the Japan Society for International Development as a program evaluation project in 2002. The evaluation results were summarized in five reports, including one in English, titled "Environmental Center approach: Development of Social Capacity for Environmental Management in Developing Countries and Environmental Cooperation" in March 2003. In relation to the content of the evaluations the Japanese and English reports titled "Social Capacity Development for Environmental Management in Asia–Japan's Environmental Cooperation after Johannesburg Summit 2002=were published from the Institute of Developing Economies in March, 2003. (Refer to the references in this report for the above-mentioned books).

In 2003 we undertook the feedback seminar projects to return the above-mentioned evaluation results to the domestic and foreign parties concerned and to make the best use of the lessons and proposals obtained from them for the environmental cooperation policy. The evaluation reports to Japan and the recipient countries, and the content of discussions at the feedback seminars are described in this report.

Through the specific evaluation in 2002 and the feedback projects in 2003, the Japan Society for International Development has worked on theorizing, modeling, and making an index of the development of social capacity for environmental management in the environmental field. Furthermore, the Society has analyzed the development stage model of social capacity for environmental management in the recipient countries, has carried out academic research on entry and exit points of assistance, and has tried to apply the lessons learned from these activities on site. In this process, the 21st Century Center of Excellence Program was adopted at the Graduate School for International Development and Cooperation of Hiroshima University. The Society and the

organizations related to the program will aggressively continue their academic activity which will make the best use of the evaluation results and the lessons and proposals from the feedback. We would like to advance research and policy proposals positively to strengthen the cooperation between the Japan Society for International Development and JICA in the future.

We wish to express our gratitude to everybody for giving us so much generous support for these feedback seminars and hope you will give us continued cooperation and support in the future.

March 2004

Shunji Matsuoka, Ph.D.
Principal Researcher
Evaluation Team on Environmental Cooperation,
Japan Society for International Development

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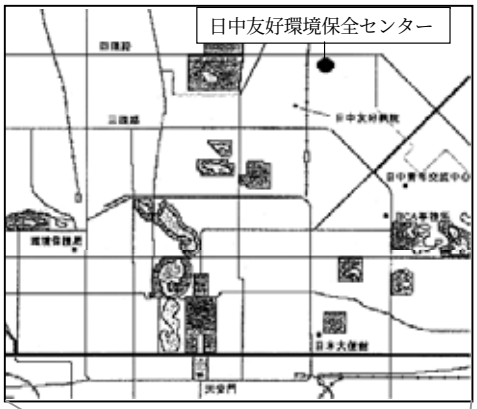
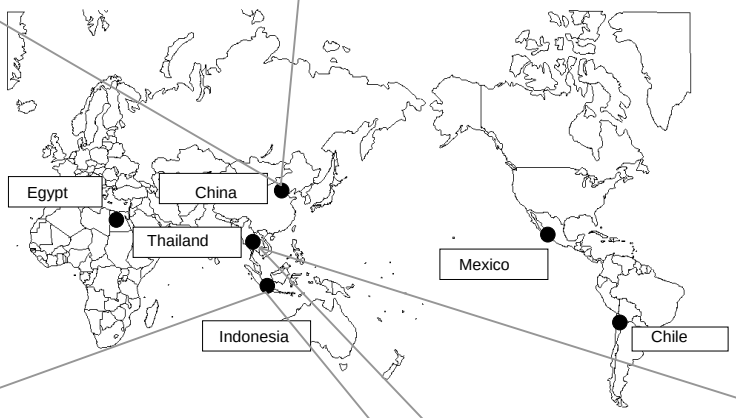
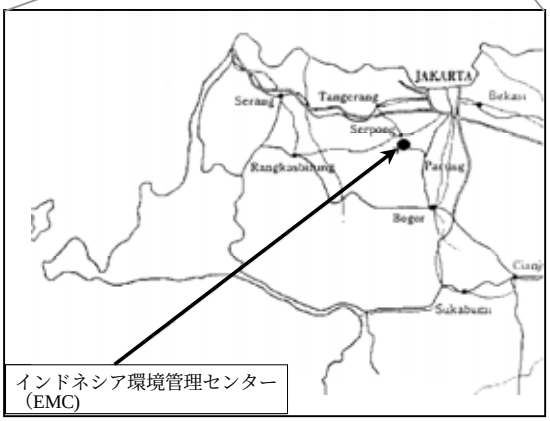
Beijing, China







Jakarta, Indonesia

Bangkok, Thailand

Evaluation Seminar in Japan

Symposium on Japan’s Environmental Center Approach to Social Capacity Development for Environmental Management in Indonesia

Symposium on Social Capacity Development for Environmental Management in Thailand and Japan’s Environmental Cooperation

Symposium on Social Capacity Development for Environmental Management in Thailand and Japan's Environmental Cooperation

Seminar on Social Capacity Development for Environmental Management in People's Republic of China and Japan's Environmental Cooperation

List of Abbreviations

AusAID	Australian Agency for International Development
BAPEDAL	Indonesia Environmental Impact Management Agency, Budan Pengendalian Dampak Lingkungan
CANGO	China Association for NGO Cooperation
CDE	Capacity development in environment
CENICA	Centro Nacional de Investigación y Capacitatión Ambiental
CIDA	The Canadian International Development Agency
CSO	Civil society organization
DAC	Development Assistance Committee
DEMS	Decentralized Environmental Management System
DEQP	Department of Environmental Quality Promotion
EANET	Acid Deposition Monitoring Network in East Asia
EcoISD	Environmental Conservation Initiative for Sustainable Development
EKC	Environmental Kuznets Curve
EMC	Environmental Management Center
EPB	Environmental Policy Bureau
ERTC	Environmental Research and Training Center
FDI	Foreign direct investment
FTA	trade agreement
GDP, GDP-PPP	Gross domestic product, Purchasing power parity
GEMS	Global Environmental Monitoring System
GNP	Gross national product
GTZ	Deutsche Gasellschaft für Technische Ausammenarbeit
HICEC	Hiroshima International Center for Environmental Cooperation
ICLEI	The International Council for Local Environmental Initiative
ISD	Initiatives for Sustainable Development toward the 21st century
ISO	International Standard Organization
JASID	Japan Society for International Development
JBIC	Japan Bank for International Cooperation
JICA	Japan International Cooperation Agency
MDGs	Millennium Development Goals
MONRE	Ministry of Natural Resources and Environment
MOSTE	Ministry of Science, Technology and the Environment

NAFTA	North American Free Trade Agreement
NEPA	National Environmental Protection Agency
NEQA	National Environmental Quality Act
NESDB	National Economic and Social Development Board
NGO	Non-governmental organization
NPO	Non-profit organization
ODA	Official development assistance
OECD	Organization for Economic Cooperation and Development
OEPP	Office of Environmental Policy and Planning
ONEB	Office of National Environmental Board
OOF	Other official flow
PCD	Pollution Control Department
PICCA	Programa Integral Contra la Contaminación Atmosférica
PPMSL-UI	Centre for Research on Human Resources and the Environment, University of Indonesia
PRSP	Poverty Reduction Strategy Paper
PRCEE	Policy Research Center for Environment and Economy
R & D	Research and development
SCEM	Social Capacity for Environmental Management
SECI	Socialization, Externalization, Combination, Internalization
SEMARNAP	Secretaria de Medio Ambiente y Recursos Naturales y Pesca
SEMARNAT	Secretaria de Medio Ambiente y Recursus Naturales
SEMS	Social Environmental Management System
SEPA	State Environmental Protection Administration
SES	Samut Prakarn Environmental Society
SOx, SO_2	Sulfur oxide, Sulfur dioxide
TEI	Thailand Environment Institute
USAEP	The United States-Asia Environmental Partnership
USAID	The US Agency for International Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
VFPMC	Village Forest Protection and Management Committee
WBCSD	World Business Council for Sustainable Development
WHO	World Health Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization

Summary

1. Background of the Feedback Project

The feedback projects were established by JICA to share the evaluation results from the third party evaluation report, in 2002, "Environmental Center approach: Development of Social Capacity for Environmental Management in Developing Countries and Environmental Cooperation" (the Evaluation Team on Environmental Cooperation in the Japan Society for International Development) with concerned domestic and foreign parties. The feedback projects consisted of seminars in Japan and in the recipient countries to share information.

2. Evaluation Feedback Seminars (Domestic and International Approaches)

(1) Seminar in Japan

The seminar in Japan was held to present the evaluation reports to concerned domestic parties and to exchange opinions among those domestic parties as a preparation stage for the symposium and seminar in the recipient countries. The evaluation seminar in Japan was held at the JICA Institute for International Cooperation on May 16, 2003 and a mini seminar for JICA's staff was held at JICA headquarters on June 26, 2003. The discussion of the Sino-Japan Friendship Center for Environmental Protection project, whose Phase III will end in 2006, was held at the International Environmental Cooperation Symposium (February 16, 2004), organized by the Graduate School for Environmental Studies of Nagoya University, where Prof. Masaharu Yagishita, the chairman of the Japanese Support Committee for the Phase III project of the Sino-Japan Friendship Center for Environmental Protection, lectures. At the symposium, a meeting in Japan to establish a common recognition among the Japanese side concerning the direction of the project after the end of Phase III was also held before the opening of the symposium and seminar in the recipient countries.

In the seminar in Japan, we exchanged opinions on the evaluation technique for the program, which uses the development of social capacity for environmental management as a framework, as well as the analysis results, and also discussed the future direction of center projects with various domestic organizations such as JICA, which were the implementation organizations for the projects, and the general participants. This discussion could be thought of as a continuation of the exchange of opinions with the implementation organizations that we had continued from the evaluation stage. We were able to harmonize the evaluation and analysis techniques from academic viewpoints by the

Japan Society for International Development and the evaluation and analysis views from the working level. Moreover, a fair-minded discussion on the future role of the Environmental Center was held, which was significant from the point of "Bridging Research and Policy".

During the discussion at the seminar in Japan, the main opinion was that because constant improvement of capacity for environmental management at the government level using the Environmental Center approach was able to be evaluated, capacity development focusing on the two actors of citizens and firms should be promoted in the future development of social capacity for environmental management in developing countries.

Although it is necessary to share information on each actor and there needs to be discussion of the improvement of capacity for environmental management of firms and reinforcement of the relations between the three actors, including governments, there is no denying that because the discussion in the seminar in Japan was specialized to the discussion between research bodies and working level participants, the viewpoint of the discussion was limited. It will be necessary to provide a place for the exchange of information and opinions accepting these sectors positively in the future.

Furthermore, because of the situation of the difference in the recognition level regarding the Center for Environmental Protection between the people who are involved in environmental development and ordinary citizens in Japan, it is necessary to widely announce the existence and role of the center to the general public domestically to propose further environmental cooperation using the center. Seeking a way of using the media as a feedback body seems to be on effective means to improve accountability.

(2) Symposium and Seminar in the Recipient Countries

In the symposium and seminar in the recipient countries, the evaluation results were reported and we discussed the ideal way of self-help and international cooperation for the development of social capacity for environmental management on the basis of the results. With cooperation from related local organizations, the reports and discussions, including evaluation analyses made by related organizations in the recipient countries, were presented in the seminars which were held on July 22, 2003, in Indonesia, on July 24, 2003, in Thailand and on February 24, 2004 in China. This enabled multiple evaluations by including not only a one-sided evaluation from the outside, but also analyses from the recipient countries.

In the symposium and seminar in the recipient countries, we were able to discuss the position,

on-site, of the Environmental Center in that country, the expected role of the Center, and the environmental coalition with Japan in the future, through the evaluation reports of the related organizations in the recipient countries. Because the level of social capacity for environmental management in each country was different, the difference of opinions over improvement tasks and the future role of the Center for Environmental Protection in each country could be seen. However, we agreed with the opinion that each country should advance a horizontal approach with Japan, depending on each development level.

3. Lessons Learned from the Feedback Seminar

(1) How to Bring Positive Impact out of the Seminar

The main objectives of the evaluation feedback are to inform the stakeholders of the evaluation results, and to bring impact on future research and policy-making. In order to realize these purposes, it is crucial to plan the feedback projects so it would lead to future steps of international cooperation. In this series of projects, from the preliminary step of starting the evaluation projects, the necessity of feedback has been within view. Therefore, from the advisory committee to the feedback seminar, programs have been consistently executed along the way and the impact from these programs, which will contribute to future improvement, will be expected by the information sharing stage.

Active opinion exchanges were accomplished on the future role of the environmental centers and the direction of environmental cooperation in the feedback seminars that were carried out in Japan, Indonesia, Thailand and China. However, institutional responses to the results of the evaluation and suggestions made at the seminars have not been enough on the working organization side.

Considering the impact after sharing information, it is essential to establish a systematic framework for opening an outlook for the future and should not be limited the seminars simply to mutual knowledge or opinion exchange.

Evaluation and feedback project has made a significant impact on academic research in Japan and developing countries. Through the project, JASID has worked on theoretical development of the analysis framework of social capacity for environmental management. As a branch of such research activities, in September 2003, Graduate School for International Development and Cooperation, Hiroshima University has launched a five-year program, the 21st Century Center of Excellent (COE) Program (Details in 3.1). The targets of the program research are East Asian countries' social capacity development. Using the knowledge network build through the COE program and the evaluation and feedback project, analysis framework will be further developed.

(2) Future Roles of the Environmental Centers and the Environmental Cooperation

In the future it is expected that the Center for Environmental Protection will provide the "place" to shift the international environmental coalition "from hard support to soft support, from project base to program base, from cooperation between two countries to multilateral and interregional cooperation, from a vertical support relationship to a horizontal support relationship".

The symposium and seminar in the recipient countries as well as in Japan, the necessity of the participation of firms, citizens, and local governments in the approach to environmental problems for the improvement of the capacity for environmental management were discussed. Many suggestions for the achievement of this goal were proposed. The necessity of capacity development in local governments was raised in the symposium and seminar especially in the recipient countries. However, while the approach of involving an entire country in the solution to environmental problems was to some extent agreed upon, it was felt that local governments were not able to get enough financial and human support from the central government. These feedback seminars were meaningful from the viewpoint of advancing opinion exchanges, including concerned local governments and NGOs. Therefore, the Center for Environmental Protection needs to provide continuous opportunities in the future and strengthen the function of promoting communication between the actors involved in environmental protection.

International environmental cooperation has expanded to multilateral and interregional levels. Also, a bilateral relationship between related countries, one which does not receive one-sided support from Japan, but one which wrestles with common tasks jointly to improve each other's, national interest, has been requested. In this respect, the role of the Center for Environmental Protection needs to change. In the development of an operating funds mechanism for the Center and for joint study and research by each related country, it is necessary to clarify common tasks and provide an incentive that will motivate related countries to invest positively. To that end, continuous communication between Japan and the related countries also seems indispensable.

4. New Knowledge Creation in Academic Research and the Working Organizations

Knowledge creation at both the academic and working levels in Japan and the related countries is indispensable to the creation of the autonomous social capacity for environmental management in developing countries after the end of the Center for Environmental Protection project. As for the theory of social capacity for environmental management, it is important to test the model used for evaluation on site and to go through a knowledge creation cycle, including internalization,

socialization, externalization and combination.

When focusing on the working side from this perspective, we must point out the importance of not only holding the evaluation feedback seminars, but also of accepting, applying and popularizing the model in the working organizations, and establishing a systematic acceptance body to organize it more fully. The assistance organizations should devise mechanisms to provide the results of evaluation research to the organizations more readily. Also, the evaluation sections in assistance organizations are requested to lead the way and to act as intermediaries between academic circles and practice level participants. In this respect, the assistance organizations should work more systematically and strategically.

5. Theorization of development of social capacity for environmental management

To contribute to the development of social capacity for environmental management in developing countries from the aspect of academic research, it is necessary to push ahead further with theorization and modeling of the development of social capacity for environmental management. Although we could observe the development stage of the social environmental management system in developing countries and were able to evaluate the entry and exit points for assistance at the time of making the evaluation report, we could not clarify the transition process nor the mechanics of the stage theoretically.

As described in the book that was written by UNDP (2002), which seems to be a self-criticism of the past technical co-operation, capacity development has to be achieved at a social level above individuals and organizations. Therefore, institutional reform that matches the social economic environment is indispensable (Refer to the references in this report for detailed information on the above-mentioned book). We believe that it is possible to view the development stage model more clearly by clarifying the dynamism of social capacity for environmental management and institutional change. The challenge that the academic should tackle is to understand the capacity of the actors and the relationship between them during institutional change in developing countries and to theorize regarding the development of social capacity for environmental management.

1. Outline of Evaluation in 2002 and Feedback Seminars

1.1. The Background and Purpose of Acceptance of the JICA Evaluation Feedback Projects on Trust by the Japan Society for International Development

The purpose of this project is to make known the results of "The Thematic Evaluation (Environment)" report (“Environmental Center approach: Development of Social Capacity for Environmental Management in Developing Countries and Environmental Cooperation”) written by the Evaluation Team on Environmental Cooperation in the Japan Society for International Development to related organizations in Japan and the recipient countries and to other specialists. Another purpose of this project is to contribute to the improvement of the development of social environmental management systems in the relevant developing countries and the Japanese international cooperation system mainly through the Environmental Center approach. The Evaluation Team on Environmental Cooperation in the Japan Society for International Development was organized by the Japan Society for International Development in 2002 based on a consignment contract with the Japan International Cooperation Agency: JICA).

In the evaluation projects in 2002, we defined a new framework for development of social capacity for environmental management and evaluated the Environmental Center projects, which had been executed in six countries (Thailand, Indonesia, China, Mexico, Chile, and Egypt), overall from the viewpoint of program evaluation. We also derived some lessons for Japanese environmental cooperation in the future and made a necessary proposal. This proposal emphasizes the necessity for capacity development or system development of both the relevant developing countries and Japan as follows:

① Review of environmental cooperation through the framework of the social environmental management system
② Development of projects with programmed administration and the use of results from existing projects
③ Cooperation with private sectors (environmental NGOs, research organizations, and firms) in developing countries and Japan

In this project, we make available these proposals obtained from the evaluation projects not only to domestic execution organizations and related local organizations, but also to concerned parties to share the results of these evaluations more widely. Moreover, we clarify the lessons and proposals

obtained through a series of feedback sessions concerning the way to advance evaluation feedback projects in the future.

1.2. Research Team Members, Execution Measures, and Execution Schedule

1.2.1. Research Team Members

The research team is composed of the following members who were mainly the core members of "The Evaluation Team on Environmental Cooperation in the Japan Society for International Development" evaluation group in 2002. All constituent members are members of the Japan Society for International Development and they were called "The Evaluation Team on Environmental Cooperation in the Japan Society for International Development", the same as last year.

The Evaluation Team on Environmental Cooperation in the Japan Society for International Development in 2003

- Shunji Matsuoka, Ph.D.

Professor of Graduate School for International Development and Cooperation, Hiroshima University
(principal researcher)

- Hidefumi Imura

Professor of Graduate School for Environmental Studies, Nagoya University
(principal researcher in 2002)

- Naoko Honda

Doctoral course student of Graduate School for International Development and Cooperation, Hiroshima University
(assistant researcher)

- Sara Okada

Doctoral course student of Graduate School for International Development and Cooperation, Hiroshima University
(assistant researcher)

Box.1. "The Evaluation Team on Environmental Cooperation in the Japan Society for International Development" evaluation group in 2002 (Status as of March, 2003)

IMURA Hidefumi	Professor, Graduate School of Environmental Studies, Nagoya University (Principal researcher) (Overall management)
MATSUOKA Shunji	Professor, Graduate School for International Development and Cooperation, Hiroshima University (Assistant principal researcher)
TAKAHASHI Kazuo	Professor, College of Liberal Arts, International Christian University
GOTO Kazumi	Professor, Faculty of Law, Hosei University
FUJIKURA Ryo	Professor, Faculty of Economics, Ritsumeikan University
KITAWAKI Hidetoshi	Professor, Faculty of Regional Development Studies, Toyo University
MIYATA Haruo	Formerly Deputy Director, Office of Overseas Environmental Cooperation, Environment Agency Japan
MORI Akihisa	Associate Professor, Faculty of Economics, Shiga University
MATSUMOTO Toru	Associate Professor, Faculty of Environmental Engineering, The University of Kitakyushu
MARUYAMA Aki	Program Officer, United Nations Development Programme
KUSUMI Ariyoshi	Associate Professor, Faculty of Liberal Arts, Chukyo University
KANEKO Shinji	Associate Professor, Graduate School for International Development and Cooperation, Hiroshima University
Research Assistants	
SHIRAKAWA Hiroaki	Ph.D. candidate, Graduate School for International Development and Cooperation, Hiroshima University
HONDA Naoko	Doctoral course student, Graduate School for International Development and Cooperation, Hiroshima University
UEDA Toyotaka	Master course student, Faculty of Regional Development Studies Toyo University
NAKAMURA Hideyuki	Master course student, Faculty of Regional Development Studies Toyo University
Sujitra Vassanadumrongdee	Doctoral course student, Graduate School for International Development and Cooperation, Hiroshima University
Andono Warih	Master course student, Graduate School for International Development and Cooperation, Hiroshima University

1.2.2. Execution Measures

(1) Opening of Evaluation Seminar and Mini Seminar

The evaluation seminar was held to present the lessons and proposals formulated from the evaluation done in 2002 to the society both at home and abroad. Moreover, the mini seminar was held to provide the lessons and proposals for related sections of JICA which were assisting on site.

(2) Conference with Related Organizations (Preparation Meetings)

The conference with support organizations will be held regularly to make the results effective in practice. In the first meeting, we investigated the needs of domestic support organizations, including JICA, in relation to the points that should be focused on in a domestic evaluation seminar and an overseas seminar based on the results of the evaluation projects in 2002. In the second meeting, we discussed the results and follow-up actions to the seminars and practical application of proposals for the approach to assistance.

(3) Local Logistic Contract

To make the opening procedures of the seminar easy and to strengthen the impact on concerned local parties, we had a subcontract with the following research institutions and organized the seminars using the local network as logistic support for the opening of symposium and seminar in the recipient developing countries. Because the local consignment organizations were central organizations for environmental policy research in the relevant countries and had completed the local consignment research in the evaluation project of 2002, they understood the background and results of this evaluation and the purpose of feedback seminars well. Therefore, they were the best consignment partners to improve the effect of the seminars.

< Thailand >

Thailand Environment Institute

Dr. Qwanruedee Chotichanathawewong (Director of Energy, Industry and Environment Program)

< Indonesia >

Centre for Research of Human Resources and the Environment, University of Indonesia

Dr. Setyo S. Moersidik (Director)

< China >

Policy Research Center for Environment and Economy, State Environmental Protection Administration of China

Dr. Ren Yong (Deputy Director)

1.2.3. Execution Schedule

For the execution of this evaluation feedback project, we held preparation meetings between related organizations such as JICA, a seminar in Japan, preliminary overseas research projects, and overseas feedback seminars. In the first term (from May to September, 2003), seminars were held in Japan, Jakarta, and Bangkok and during the latter term (from October, 2003 to March, 2004) in Beijing. The details are as follows:

(1) Domestic Preparation Meetings

The main purpose of the domestic preparation meeting included the following two points.

- Preparation conference for the home and overseas seminars
- How to achieve a ripple effect from the seminars
- Refer to the final page for the schedule of the domestic meetings.

(2) Evaluation Seminar in Japan

The evaluation seminar for the Environmental Center evaluation in 2002 was held for domestic assistance organizations, Japanese office of international assistance organizations, universities, research organizations, and civilians. The number of participants was 108.

< Date and Venue>

14:00-18:00 on May 16: the International Conference Hall of the Institute for International Cooperation.

(3) Overseas Preliminary Research

Before the opening of the feedback symposium and seminar in the recipient countries, preliminary research was carried out regarding the planning with requests for cooperation being made to related organizations, and a meeting was held with consignment partners for the opening of

symposium and seminar in the recipient developing countries which were to be held once at each place (Jakarta and Bangkok: on May 18-24, Beijing: on December 14-18).

(4) Feedback Symposium and Seminar in the Recipient Countries

The feedback symposium and seminar in the recipient countries were held for the foreign office of Japanese assistance organizations, the embassy, local offices of international and bilateral assistance organizations, concerned local ministries, local universities and research institutes, economic associations (like organizations related to WBCSD) and NGOs.

In addition, the seminar in Bangkok became an international symposium because we invited concerned parties from Vietnam and the Philippines with the expectation of some impact being made by the Environmental Research Training Centers (ERTC) or the Environmental Center approach on neighboring countries. The number of participants was 60 in Jakarta, 60 in Bangkok, and 48 in Beijing.

1.3. Outline of Evaluation in 2002

1.3.1. Background, Objectives, Target and Methodology of the Evaluation

(1) Background

At the World Summit on Sustainable Development, WSSD Johannesburg, which took place from late August to early September, 2002, the Japanese government introduced EcoISD (Environmental Conservation Initiative for Sustainable Development), an advanced plan of Initiatives for Sustainable Development toward the 21st century (ISD). In this plan, Japan, presenting a new policy emphasizing the importance of partnerships with developing countries, as well as principles of ownership which Japan had pursued for a long time, defined capacity development in the environment as the first of several basic policies. Specifically, under the Koizumi Initiative (the concrete actions of Japanese government to be taken for sustainable development -towards global sharing, announced by Prime Minister Koizumi), Japan gave first priority to development of human resources for sustainable development, raised education aid to more than 250 billion yen over five years and supported human resource development of 5,000 experts in the environmental field.

However, Japan has been trimming down the amount of its ODA in the past few years because of its severe fiscal situation and gave up its position as No. 1 among ODA donors in 2001. In the meantime, Japan's FDI has been growing steadily and has become approximately five times as big in

scale, overtaking its ODA in 1992. Furthermore, the role of civil society organizations (CSOs), such as NGOs and NPOs, has expanded dramatically in the fields of development assistance and environmental protection in developing countries. When thinking of sustainable development in developing countries as stated above, it is more important than ever before for both private (firms and citizens) and public sectors to take their own share of responsibilities and to cooperate with each other.

Although the proportion of environmental ODA out of the total ODA is on the rise, now is the time to give careful consideration, in these circumstances of environmental cooperation, to how to approach effective and efficient international cooperation, including other development support from OOF (other official flows than ODA) and other cooperation based on private funds.

(2) Objectives, Targets and Methodology

This report is the result of the evaluation of the Environmental Center approach, which was conducted by the Evaluation Team on Environmental Cooperation in the Japan Society for International Development (JASID) under an official contract with the Japan International Cooperation Agency (JICA). The evaluation of the Environmental Center approach in this report is the program evaluation of Environmental Center projects. In a broad, high-level framework, Japan's contribution to developing countries' *social capacity for environmental management (SCEM)*, examining the results from the Environmental Centers (one of Japan's representative environmental cooperation programs), was evaluated from diverse viewpoints.

In this report, the evaluation was conducted on projects in four main countries (China, Thailand, Indonesia and Mexico) out of six countries where Environmental Center projects had been implemented, taking into consideration the duration of each project and the characteristics of each Environmental Center.

The Environmental Center approach, which has been implemented since 1990, mainly consists of grants and technical cooperation for the establishment of a center which has (1) a research function of monitoring skills for air and water pollution, along with environmental research, and (2) a training function for environmental experts with technical cooperation from Japan. Hence it may be said that the Environmental Center approach is a main feature of Japan's environmental cooperation, representing showing its characteristics.

This report presents a proposal for how a more effective and efficient environmental cooperation program from JICA should appear, based on the concept of social capacity development for environmental management as the framework for program evaluation, and analyzing how the Environmental Center projects have contributed to the participating countries' social capacity

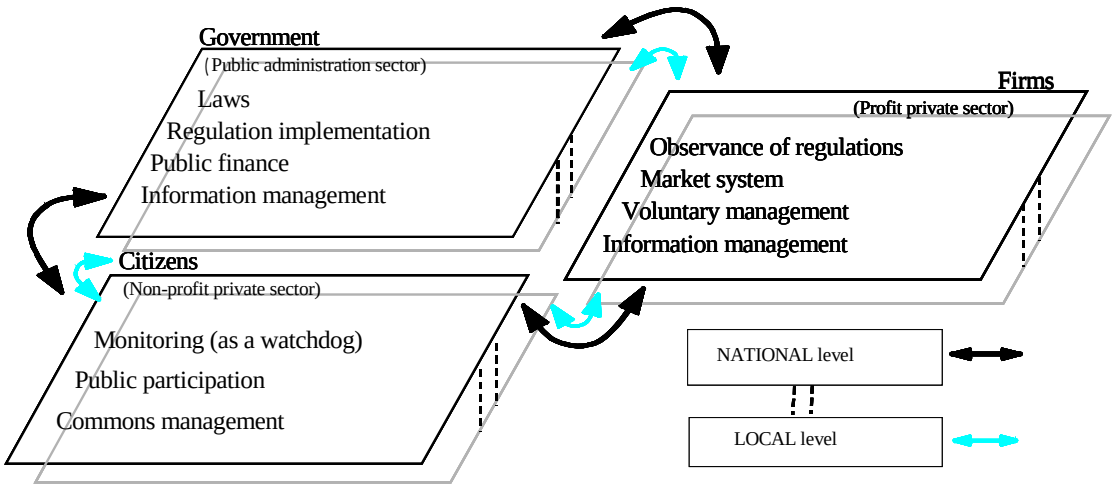
development, while conducting evaluations of related cooperation projects and policy systems, as required.

1.3.2. Development Stages of Social Capacity for Environmental Management in Developing Countries

(1) Social capacity for environmental management and the Social Environmental Management System

Social capacity for environment management (SCEM) indicates the overall capacity that is addressing environmental management by government, firms and citizens. This capacity is defined as the social environmental management system (SEMS) on the basis of a systematic and institutional argument (See Figure 1.1). SEMS has three main actors for environmental management, namely, government, firms and citizens, and the system works according to the actions of these three actors in environmental management as well as interactions among them. As for SEMS, the relationship of the two levels of the country, central (national) and local, should be considered, too.

Figure1.1: Social Environmental Management System (SEMS)



Source: Matsuoka (2002)

(2) Development Stages and Benchmarks of the SEMS

There are three stages in the development process of SEMS: system-making, system-working, and self-management. The system-making stage is the one in which the fundamental functions of

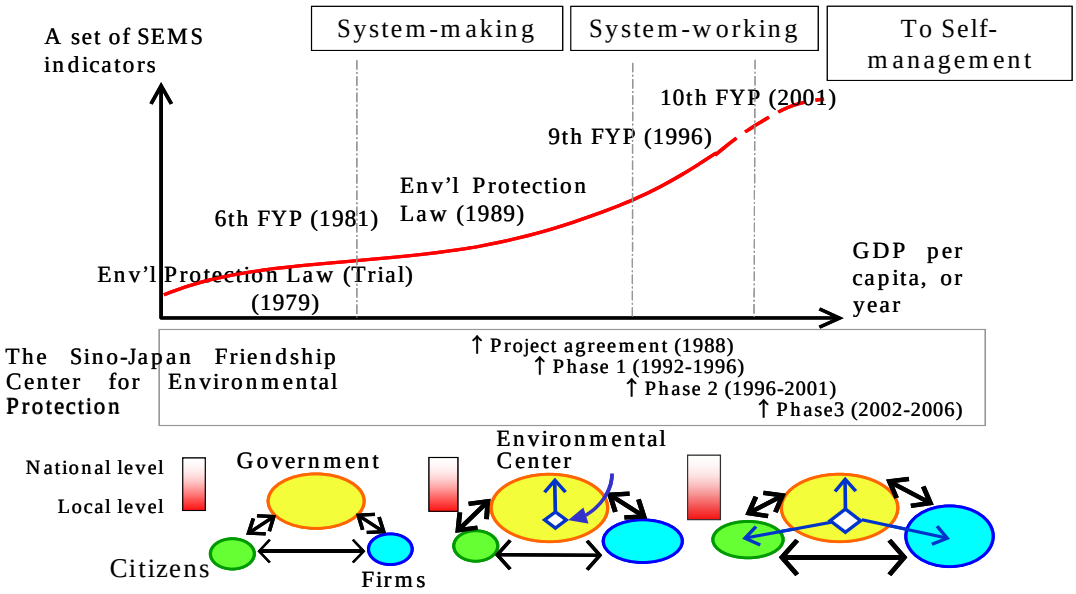
SEMS are developed. Since this stage particularly needs capacity development in the government sector, benchmarks should be the development of environmental laws (basic laws and specific regulations), environmental administration, and environmental information (establishment of monitoring networks, and collection, use and disclosure of the data). The system-making stage enters its final phase when an environmental administrative organization is established following the enactment of environment laws. Going through the final adjustment, such as the development of environmental information, toward the execution of the environmental policy, the system shifts to the system-working stage.

In the system-working stage, the system makes a full-fledged start of the execution of pollution reduction followed by development of the environmental administration, which should be fundamental in the system. In this stage, pollution changes its tendency from increasing to decreasing and a turning point of the environmental Kuznets curve (EKC) should be observed. With such a turning point observed, this stage is assumed to fully open up.

The self-management stage is the stage in which the system develops self-sustainingly through stronger interrelationships between the government, firms and citizens, and comprehensive environmental management is enforced. Especially firms and citizens take the initiative in environmental management through their voluntary efforts. For example, firms make efforts to obtain ISO14001 certificates as part of internal environmental management and begin to carry out more efficient environmental and business management, making the most of the environmental accounting. Firms appeal to the society with these achievements and they gain a competitive edge in the market with consumers' appreciation of their efforts. From the aspect of international cooperation, a developing country should become more independent from the donor country’s assistance and utilize its own financial resources at the beginning phase of this self-management stage.

The roles and the relationships among the three actors also change along with the development process of the stages. Although the government shoulders the biggest role in the system-making and system-working stages, in the self-management stage, it is responsible for creating a framework for comprehensive environmental management and supporting the other actors. The Chinese case of the development process of SCEM is shown in Figure 1.2. Regarding the evaluation indicators of SCEM, on the basis of the Human Development Index of the United Nations Development Programme (UNDP), evaluation indicators for air quality management capability of the World Health Organization (WHO) and the United Nations Environment Programme (UNEP), and the evaluation theory in capacity development in the environment (CDE) promoted by OECD, the evaluation analysis in this report focuses on the benchmark indicators in the development stages, assuming a bundle of evaluation indicators as shown in Figure 1.3.

Figure 1.2: The development process of SEMS in China



Source: Matusoka (2002)

Figure 1.3: SCEM indicators

Government

Process	Factors	Indicators
Monitoring | Analysis and evaluation | Policy-making | Policy implementation	(1) Law and policies	Basic environmental law, pollution control acts
	(2) Human resources	Staff (number and quality)
	(3) Organization	Status of Ministry of Environment, organizational performance
	(4) Financial resources	Budget
	(5) Infrastructure	Technological and information infrastructure
	(6) Information, knowledge, and technology	Monitoring, data analysis, policy-making, administration

Information disclosure
Open system for public
Environmental education
Policy priority

Access to information
Pollution claims
Media
Demonstration
Lawsuits
Negotiations & lobbying
Policy proposal

National/local relations
Decentralization
(Budget, decision-making, implementation)
Initiatives for environmental management

Background indicators
<Economy> GDP per capita, GDP growth rate, industrial structure
<Society> population, population growth rate,
<Environment> ambient level, energy shift

Regulation implementation
Subsidies
Environmental tax
Polity priority

Regulation observation
R & D
Negotiation and lobbying
Lawsuits

Citizens

P	F	Indicators
M | A & E | P-M | P-I	(1)	Environmental disciplines, *commons* rules
	(2)	Education
	(3)	Academics, NGOs, media, organizational performance
	(4)	Budget
	(5)	Technological and information infrastructure
	(6)	Monitoring, data analysis, policy-analysis

Access to information
Pollution claims
Lawsuits
Media
Green consumption
Research

Information disclosure
Eco-label
R & D

Firms

P	F	Indicators
M | A & E | P-M | P-I	(1)	Environmental disciplines, Charter of a business council
	(2)	Education, training
	(3)	Self-monitoring, reporting, env'l division, organizational performance
	(4)	Investment
	(5)	Technological and information infrastructure
	(6)	Monitoring, data analysis, business strategies

Source: The author

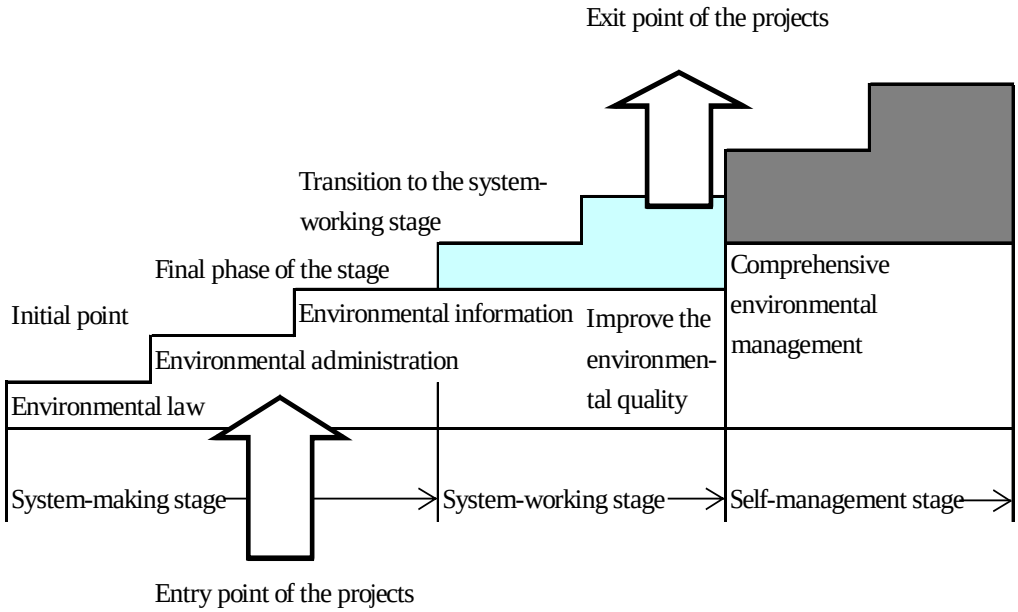
1.3.3. Environmental Center Approach and Social Capacity Development for Environmental Management

(1) Entry Point and Exit Point of Environmental Center Projects

In terms of social capacity development for environmental management in developing countries, it should be considered important to identify what environmental cooperation should be, and when it should be implemented most effectively.

Suitable entry and exit points in development stages of the SEMS and Environmental Center projects are shown in Figure 1.4. When Environmental Center projects, whose key activities are monitoring, researching and training, are started in the final phase of the system-making stage in which environmental law and environmental administration are ready established, the most effective results for the formation of social capacity development for environment management in the counterpart country are delivered. In short, the final phase of the system-making stage is the most suitable entry point for the Environmental Center projects.

Figure 1.4: Entry/exit points of Environmental Center projects



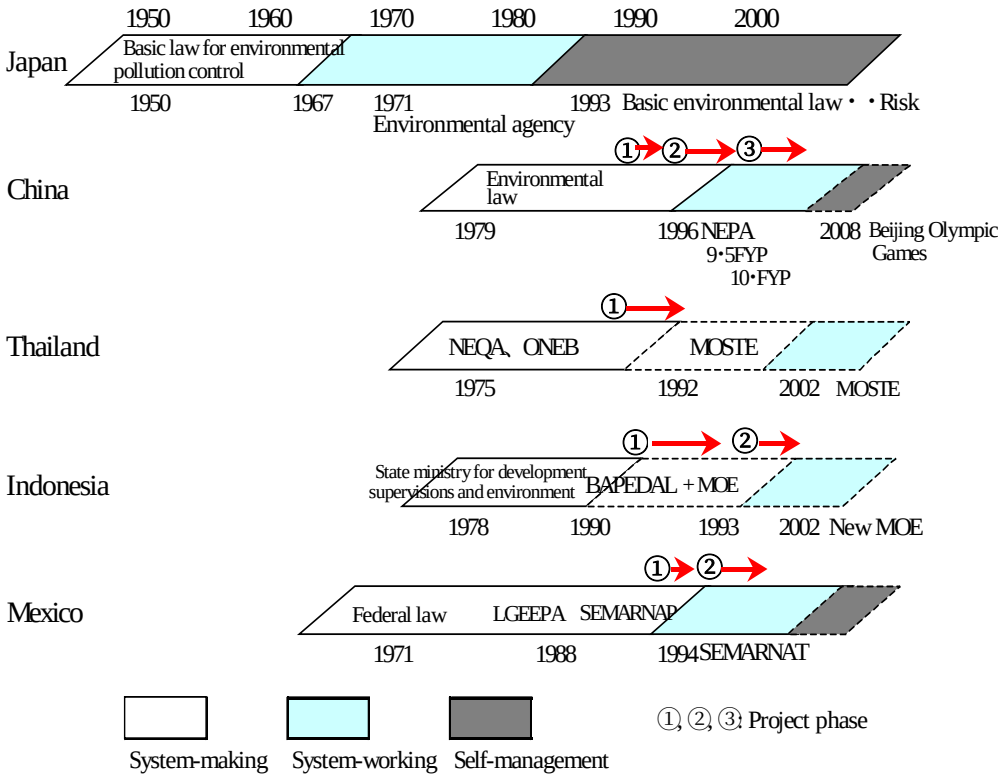
Source: The author

On the other hand, the turnaround to pollution decrease in the system-working stage means that the counterpart country's social system has established the capacity to reduce conventional industrial pollution, such as SOx. Thus, the Environmental Center faces a new task by having attained one of

its original purposes, and the time to aim at self-sustaining development begins. Also, the cooperative relationship shifts to one that is well balanced, with and without ODA, from one where ODA takes a large part, in other words, from vertical to horizontal cooperation. Therefore, it is desirable for Environmental Centers to reach the exit point of the projects at the moment when the stage spreads out fully, after it passes through the turning point of pollution reduction in the system-working stage.

From the point of view stated above, the contribution of Environmental Center projects to social capacity development for environmental management in the four countries is evaluated. The development process of the SEMS and the input timing of Environmental Center projects in the four countries are shown in Figure 1.5.

Figure 1.5: Development stages of SEMS



Note: FYP indicates Five Year Plan

Source: The author

(2) China

Both environmental law and administration have been satisfactorily established in the 1990s, and the China Environment Yearbook, which is equivalent to China's State of the Environment, has been issued since 1990, upgrading its quality since 1994. This evidence shows that the system-making stage in China was over in the mid-1990s, meaning that the first half of the 1990s matches the final phase of the stage. With Air Pollution Control Act Amendments enacted in 1995 and the Ninth Five Year Plan started in 1996, China implemented effective countermeasures, and entered the system-working stage in the second half of the 1990s. Since SO_2 emissions from industry in China reached a peak in 1996, there is a possibility that China reached the turning point of pollution decrease in the latter half of the 1990s. The development process of social capacity, which appears to be extensive in China, as stated above, implies that the government, firms and citizens, acting as a single body, appear to be actively promoting environmental management prior to the Beijing Olympic Games to be held in 2008 and the Shanghai International Exposition to be held in 2010, and the country seems to have started shifting to the self-management stage from the system-working stage.

Figure 1.5 indicates that the Sino-Japan Friendship Center for Environmental Protection project in China had started in 1992 (an agreement for a grant aid was reached and project-type technical cooperation started), which was the final phase of the system-making stage, and the project was initiated at a suitable entry point. Furthermore, full-scale technical cooperation and actual center activities were started in 1996 as the second phase of the project. With project input having been given at the right time to make a significant contribution to the system, the Sino-Japan Center has been developing along with the development of the SEMS in China.

In the meantime, China had experienced the system-working stage since the latter half of the 1990s and is now gradually shifting to the self-management stage from the early 2000s, and the Sino-Japan Center project entered the third phase in 2002 (scheduled to be completed in 2006). Although the Sino-Japan Center might not need further assistance from Japan, considering the exit point of the project on the basis of the original concept of Environmental Center projects, it is relevant for Japan to continue supporting the Environmental Centers if they find a new target or meaning for their activities, like the case of the Sino-Japan Center, also in terms of strengthening the relationship between both countries' governments, firms, and citizens.

(3) Thailand

In Thailand, environmental law, administration and information are mostly prepared, and the country shifted to the system-working stage from the system-making stage in the mid 1990s. However, it has taken considerable time to set up the system-working stage in the SEMS because of social and economic trouble caused by the currency crisis in 1997. Furthermore, in Thailand, a period of reorganization of the governmental system and the early stage of the system-working stage have coincided due to the reformation of the former Ministry of Science, Technology and Environment (MOSTE) into the present Ministry of Natural Resources and Environment (MONRE) after the establishment of the new Constitution in 1997, the enforcement of the Decentralization Plan and Process Act in 1999 and restructuring of the ministries in October, 2002.

Figure 1.5 shows that the Environmental Research and Training Center (ERTC) project started in 1990 (an agreement was reached in 1989), which was the final phase of the system-making stage, and ERTC appears to have been implemented prior to the transitional period to the system-working stage. The Thai administration and economy began a restructuring period after the completion of the project in 1997 and it was impossible to predict conditions like this in the latter half of the 1980s. So, it may be said that the entry point of the Environmental Center project in Thailand was consistent with the background in those days. Furthermore, although the ERTC project ended in 1997, the input of the project should have been continued a little more longer to be more rational, considering that the system was at the beginning phase of the system-working stage and far behind the time when it could be in full operation.

(4) Indonesia

Environmental law and administration in Indonesia were developed in the late 1980s and early 1990s. Nevertheless, Indonesia is behind in terms of the development of its environmental information, that is, a nationwide monitoring network is not established, and periodical dissemination of the state of the environment is not being done, either. Under these conditions, this country appears to have been at a standstill in the final phase of the system-making stage since the beginning of the 1990s. Furthermore, Indonesia went through social and economic confusion due to the change of the Suharto administration along with the currency crisis in 1997, the independence movement of East Timor, and the restructuring of all administrative bodies with establishment of the new Ministry of the Environment (January, 2002) from the State Ministry of Environment and BAPEDAL (Environmental Impact Management Agency) in the revision of central ministries, and enactment of the Decentralization Act (2001). Under unstable administrative conditions like these, they may remain in the final phase of the system-making stage.

The analysis of the development process of the SEMS in Indonesia leads to the conclusion that that the start of project input of the Indonesia Environmental Management Center (EMC) in the beginning of the 1990s and also in the final phase of the system-making stage (an agreement for the grant aid in 1991, and the start of project-type technical cooperation in 1993) was appropriate timing.

On the other hand, regarding the accomplishment of the project, there are often remarks made that the EMC still has a long way to go to become self-sustaining and the project is subject to being continued. From the viewpoint of development of the SEMS, the analysis goes as follows. Indonesia's own particular conditions led to need a much longer time in years for the final phase of the system-making stage because of external factors and other problems, and in consideration of concrete needs, such as preparation of an environmental information system and development of environmental experts, it is relevant to continue inputting aid funds into the EMC project for a while longer.

The second phase of the EMC project, which is aimed to support the decentralized environment management system, started in July, 2002. Although the project design, such as the way to connect with environmental policy and the definition of the scope, is controversial, it is expected to contribute to social capacity development for environmental management in Indonesia in the future.

(5) Mexico

In Mexico the environmental law and administration was developed from the end of the 1980s to the middle of the 1990s (SEMARNAP, Ministry of the Environment, Natural Resources and Fishery started in 1994). Environmental information was also established and introduced to the public around the same time. The development of the social environment management system in Mexico was finished in the mid 1990s and now appears to be shifting to the self-management stage from the system-working stage. However, for Mexico City there was a turning point for SO_2 emissions from 1992 to 1993, and according to this data, the system-working stage already started in the first half of the 1990s. Moreover, the Action Plan for Air Pollution Control (in 1988) and the Integral Program for Air Pollution Control (PICCA, 1990-1995) were implemented. With this evidence and these countermeasures, it can be said that the system had already been in the system-working stage and also in the final phase of the system-making stage simultaneously in the late 1980s. The analysis stated above suggests that the start of CENICA (National Center for Environmental Research and Training of Mexico) in 1992 was a little too late to contribute significantly to Mexico's social capacity development for environmental management.

The project ended in June 2002, after a follow-up period of two years. When it is seen from the viewpoint of the development of the SCEM, the CENICA project started from the early phase of the

system-working stage, and the project input could have been terminated before 2002, because Mexico had the technology for environmental management and policy study of an adequate level. Unlike the case of China, whose Environmental Center has renewed and furthered the scope of its functions in the middle of its course, CENICA does not seem to have a clear and newly developed target to achieve. CENICA should have been given an opportunity to search for a fresher approach to development of the Environmental Center at an earlier stage of consideration of the development of its SEMS. Therefore, it was possible for Japan to offer different assistance other than the prior Environmental Center project.

1.3.4. Development of Environmental Center Approach and Environmental Cooperation in the Future: Lessons and Recommendations

Recommendations made in this report are roughly categorized into two levels. The first level is aimed at organizations comparatively directly concerned with the Environmental Center projects or other environmental cooperation, including JICA, the project implementing agency. Recommendations at this level suggest how to make a supportive Environmental Center to contribute to developing countries' social capacity development for environmental management, and what an ideal environmental cooperation partnership between developing countries and Japan and among developing counties through the Environmental Center approach should be.

The second level is aimed at stakeholders at a higher level or in a broader area from the perspective of social capacity development for environmental management in developing countries and the improvement of Japan's international environmental cooperation. This level comprises three suggestions: development of comprehensive assistance in the environmental field and other fields; environmental cooperation in the global economy; and a developed system for providing assistance and environmental cooperation with significant impact.

(1) Environmental Center Projects in Social Capacity Development for Environmental Management

① Administrative Status of the Environmental Centers

In order to contribute more to the development of environmental monitoring, research and training, it is fundamental to give a relevant administrative status to the Environmental Center, so that the Environmental Center can make an impact on environmental policy-making. To achieve this, it is important to identify what specific authority in the environmental administration it belongs to during the development process and implementation of the project. Moreover, it is important to

work out how the Environmental Center could be freed from the authority of any specific department office in order for it to perform effectively in the environmental administration system.

When considering the Environmental Center's contribution to the social capacity development for environmental management in the long run, it is more important to set up a wide scope of functions or a wide support system in the project. The support system should be prepared to be flexible so that the cooperation approach can be altered to improve its effectiveness according to the development of the Environmental Center, to expand its cooperation range or to shift focus to policy study even in the middle of the project.

② Entry Point and Exit Point of the Environmental Center Projects

As mentioned earlier, the final phase of the system-making stage, in which the fundamental features of the SEMS such as environmental law and administration are well prepared, is an optimum entry point (a project starting time) for the Environmental Center projects. Furthermore, the time when the turning point for decrease in pollution appears in the system-working stage, showing that the stage is fully functioning, is the preferable exit point to impel the Environmental Center to become self-sustaining. At that time, the project should shift emphasis to a horizontal cooperation type of partnership. Investigating, from the viewpoint mentioned above, whether the counterpart country is in the appropriate time of the planning process for the Environmental Center project implementation and setting up necessary cooperation items in advance are key procedures. Finally, taking advantage of the entry and exit points, Japan should not disrupt the relationship with the Environmental Center after the exit point nor stick to the Environmental Center as the sole cooperation approach but should continue flexible cooperation according to the development of the SEMS.

(2) Future Perspectives of the Environmental Centers

① The Environmental Centers and the Capacity Development for Environmental Management in Firms, Citizens and the Local Actors

In order to make a further contribution to the social capacity development for environmental management of the counterpart countries, the Environmental Center should strengthen ties with firms and citizens and make a greater impact on these primary actors of the system. At the same time, assistance to local actors to increase their capacity for environmental management will be indispensable in the tide toward the local decentralization in developing countries, which is anticipated to accelerate.

② Further Qualitative Improvement of the Environmental Centers

As mentioned above, it is imperative for the Environmental Centers to improve their staff member's capacity for contribution to the development of SCEM. Although pieces of important research have been done in the Environmental Centers, in terms of doctoral degrees, there are only 16 in China (about 20% of the total number of researchers in the Center), five in Thailand (about 10%) and none in Indonesia. They do not need to match the case of developed countries (about 90% of researchers at Japan's National Institute of Environmental Studies are doctoral degree holders), but in order to become a leading research center for environmental studies in and outside of the country, at least one third to one half of the researchers should hold a doctoral degrees and efforts to increase the number of research workers who have a degree is necessary.

(3) Further Impact of the Environmental Centers: Building Partnerships

① Partnership between Japan and Developing Countries

It is important for Japan to make the most of both tangible and intangible assets in Environmental Centers, to bring about a relationship of mutual trust with developing countries, and to develop partnerships in different levels of the government, firms, citizens and local actors. This will lead to creation of social capital. Through exchange activities like this, the relationships between Japan and counterpart countries can blossom into a horizontal form of cooperation, in which both sides follow a give and take system with interest and concern for each other, separate from the vertical one influenced by ODA.

② Partnership among the Environmental Centers

In terms of future capacity improvement of the Environmental Centers or development of the new Centers, it is very useful to exchange experiences and to undertake collaborative research between Environmental Centers. For instance, China's and Indonesia's Environmental Centers have taken part in the Acid Deposition Monitoring Network in East Asia (EANET). Thailand's Center is expected to join them. Furthermore, there is a hope that each Center will start South-South cooperation to neighboring countries by becoming a regional center.

(4) Further Environmental Cooperation in the Future by Japan: Recommendations from the Broader Point of View

① Development of Assistance Programs and Assistance Coordination

When Japan pursues ideal environmental cooperation in the future, programmed assistance aiming to develop the capacity of the entire field of the environment, that is, social capacity development for environmental management, is fundamental. In the assistance programs for the environment in counterpart countries like China, Thailand, Indonesia and others, there is insufficient coordination between the program for brown issues (air and water pollution) and green issues (forest preservation and diversity preservation). Commitment to structuring a link between the problem-countering project and the system-developing program is not strong enough either. Environmental cooperation policy should be clarified, with the linkage of brown and green environmental issues, such as countermeasures to pollution and forest preservation, and global environmental issues, such as global warming, desertification, and the decrease in biodiversity, within the larger movement for social capacity development for environmental management in countries of interest. Moreover, a cooperative relationship at the program level will be also fundamental, such as cooperation to counter the vicious circle of poverty and environment degradation, which have not always been organized together.

② Globalization of Economy and Environmental Cooperation

There are more free trade agreements (FTA) being concluded between two countries and even among several countries, as well as active free trade among WTO (World Trade Organization) member countries along with globalization of the economy and environmental cooperation. In future free trade agreement negotiations, Japan should call for a many-sided cooperative agreement, including, not only mutual cooperation between economies, but also environmental preservation, following NAFTA's leadership. In terms of implementation of future environmental cooperation, Japan should give full attention to the trend toward economic agreements like this.

③ Establishment of an Aid Supply System and the Impact of Environmental Cooperation

In order to realize the new policy of environmental cooperation stated above, drastic reform of Japan's aid supply system is required. Japan has usually depended on central ministries, including the Ministry of Environment, and local public bodies for technical expertise and experts required for cooperation programs. However, as a consequence of recent progressive administrative and fiscal reform, the Ministry of Environment is finding it difficult to send new staff members to the

programs. Moreover, the ministry does not seem to have sufficient expertise or knowledge regarding international cooperation. The local public bodies, as well, are operating under the same conditions. When it comes to thinking of the future social capacity development for environmental management, it is imperative to make the most of expertise from firms and citizens, and to search widely for and foster human resources, because there is a shortage in staff and knowledge from the central and local government. In preparation for that, the administration, firms and NGOs should jointly contemplate how to foster advanced experts and re-educate people who have a certain level of experience, in graduate schools focusing on international cooperation and the environment, and the academic society JASID and other societies should also be involved in these efforts.

2. Evaluation Feedback Seminars

(Domestic and International Approaches)

2.1. Seminars in Japan

The evaluation seminar in Japan was held mainly to disseminate the results of the evaluation report to the wide range of persons involved. Its other objectives were to exchange views and find a consensus among the persons involved in Japan, serving as a preliminary stage for the symposium and seminar in the recipient countries. The Evaluation Seminar in Japan was held at the Institute of International Cooperation of the Japan International Cooperation Agency (JICA) on Friday, May 16, 2003. It was held for the domestic assistance institutions, Japan branches of the international assistance institutions, universities, research institutes, and also for civilian participants. A-mini seminar for JICA staff members was also given at the JICA Headquarters on Thursday, June 26, 2003. This report also provides information about the Symposium on International Environmental Cooperation (February 16, 2004) hosted by the Graduate School of Environmental Studies of Nagoya University where Masaharu Yagishita, Chairperson of the Supporting Committee in Japan for the Phase III project of the Sino-Japan Friendship Center for Environmental Protection, is a staff member. It involved discussions concerning policy direction after phase III in an attempt to reach a common recognition of that issue.

2.1.1. Evaluation Seminar in Japan

Objectives	: to introduce evaluation results to involved domestic persons and discuss measures to utilize the result in the future Environmental Center approach through exchanging opinions on the evaluation methods and the result of the analysis.
Date and hour	: May 16, 2003 14:00-17:00
Venue	: International Conference Hall, JICA Institute of International Cooperation
Participants	:108

(1) Evaluation Results Report
(Shunji Matsuoka, JASID, Hiroshima University)

This report evaluates the achievements of the Environmental Center project at the program level

to evaluate Japan's environmental cooperation from a broader perspective. In other words, an evaluation analysis of the contribution of the Environmental Center approach to the development of Social Capacity for Environmental Management (SCEM) in developing countries. Among the 3-stage development model of SCEM, the most efficient entry and exit points for the Environmental Center project are respectively the final phase of the System-making stage, and the period when the System-working stage has sufficiently developed. In addition, it is important for the Environmental Center to enlarge and diversify the scope of its given function (positioning in the environmental administration) to contribute sufficiently to capacity development. In evaluating the Environmental Centers of the four recipient countries from these points of view, it could be said that the Sino-Japan Friendship Center (SJC) in China has achieved significant results and Environmental Centers in Thailand and Indonesia have made some contributions, in spite of undergoing some restriction by their environmental administrations. Regarding the development period of SCEM, the implementation and completion of the environmental policies of the Environmental Center in Mexico was rather late and its contribution was limited.

The report presents lessons and proposals for the future development of Environmental Centers and Japan's environmental cooperation. In the future, cooperation is required to ensure the ownership by the developing countries and to promote partnership between Japan and the recipient country including its firms and citizens. Additionally, reviewing the programming process for assistance is also necessary. Furthermore, continuance of long-lasting, accumulative evaluation research and knowledge creation with the collaboration between the recipient site and the academic society will become particularly important in realizing efficient organization.

(2) Reports and Comments from the Panelists

Hiromitsu Muta (Tokyo Institute of Technology)

To analyze whether the respective assistance cases including the Environmental Centers were practically being helpful in comprehensively resolving the environmental problems in the developing countries, not only the evaluation of outputs, but also the evaluation of the outcome impact, in other words program evaluation, is necessary. Discussion of the efficacy of the Environmental Centers from a broad perspective, such as the theory of the development of Social Capacity for Environmental Management (SCEM) leads to the evaluation of the contribution to the outcome. This report excels at analyzing program efficacy by providing an analytical framework. However, from the principle of program evaluation which compares with other alternatives and evaluates contribution of the outputs to the impact of the outcome impact, it may be necessary to make a comparison/contrast pointing analysis in a logical manner, apart from whether a quantitative

analysis is possible or not.

Masaharu Yagishita (Nagoya University)

Japan's past experience with overcoming pollution and the reality of environmental problems that the present developing countries face are totally different. Thus the needs of the developing countries could not be addressed simply by adopting the Japanese experience. For example, I doubt whether there is an exit point for the assistance to the Sino-Japan Friendship Center, since the developing countries carry the traditional pollution-type environmental problems while also suffering from the latest environmental problems that the developed countries face. However, it could be said that the Sino-Japan Friendship Center played its role in laying the groundwork for an approach to the problems. Environmental Centers could possibly play a main role in an environmental management regime in an entire region (such as East Asia). In addition to the current Environmental Center assistance (grant aid and technical aid), it is important to expand the scope of assistance, such as seeking other ways of Official Development Assistance (ODA) and participation from the private sector.

Senro Imai (JICA)

A viewpoint that discusses the entry/exit points of Environmental Center assistance according to the development stages of Social Capacity for Environmental Management (SCEM) is extremely important. However introducing a Japanese expert (preferably the leader) with extensive experience in the early stages is indispensable for the development of the Environmental Centers, as well as recognizing the entry point. It is also necessary for those groups with abundant knowledge, such as research bodies, local governments, universities, and private firms, to actively join in the project through their support for the expert team. The exit point is not the end of the relationship between Japan and the developing countries, but should be the starting point of a new partnership cooperation. This is the time when more participation from the knowledgeable groups is needed. As the Environmental Center enters the self-management stage, the activities at the Center should exert a strong attraction for Japanese researchers and private firms.

Akira Endoh (Ministry of Foreign Affairs)

The necessity of evaluation is increasing from two perspectives: internationally, to produce an effective and efficient assistance that puts emphasis on results, and domestically, to insure of transparency and efficiency. The Ministry of Foreign Affairs implements evaluations at the policy level and the program level. Currently no international method has been established for these evaluations; thus it is advisable to accumulate achievements in evaluation studies as reported in this symposium, and transmit Japan's experience as a good example to the world. The Environmental

Center is a fine example that has been implemented through the coordination between grant aid and technical aid which corresponds with the proposal for efficient assistance and collaboration among schemes that was raised as part of the ODA reform. Continued collaboration with various schemes and a whole-Japan approach with a wide range of actors including NGOs is essential.

Akinori Ogawa (Ministry of the Environment)

Excellent human resources from the public and private sectors are vital above all, to appropriately understand the backgrounds of the developing countries and the various situations they now confront, as well as the potential of applying Japan's experience to their cases. The future challenges in assistance to the developing countries are the development of Social Capacity for Environmental Management (SCEM) in local areas along with the process of decentralization and South-South cooperation. It is also necessary to promote environmental cooperation based on Japan's interests (merits). Furthermore, we should deeply consider Japan taking initiatives towards the resolution of global environmental issues such as global warming by promoting utilization of the Environmental Centers as contact points with Japan if needed in the course of collaborative research.

Eiji Inui (JICA)

This evaluation report is significant in emphasizing the necessity of understanding the current situation by evaluating the Environmental Center through the perspective of its contribution to the social system. As for the decentralization of the environmental administration, which is currently an important challenge for the developing countries, while development of laws and adjustment among regions is being required at the national level, a concrete approach to environmental management is a pressing need at the local level. We will consider how JICA can contribute to the challenges of the decentralization at the two levels. In addition, the Environmental Center has been a bridge between the assistance of JICA and others, for example, placing an expert on yen credit (in China), and acting as a contact point for Japan's environmental cooperation. JICA is willing to continuously offer assistance in specific areas such as South-South cooperation.

(3) Abstract of Panel Discussion

① Discussion on Program Evaluation Methods through Environmental Center Approach

Although a with/without evaluation is necessary for program evaluation of Environmental Centers (Muta), when we observe the Environmental Centers as a 'function', they would be consequently needed in the initial stage of administrative capacity for environmental management. Thus the with/without logic is not applicable (Matsuoka). However, some type of logical analysis is required to make the evaluation compelling, no matter how difficult it is to evaluate the efficacy and

effectiveness of Japan's assistance through the Environmental Centers in terms of developing 'function' (Muta).

② Entry/Exit points of the Environmental Center

Considering the timing of assistance through entry/exit points is an effective analysis method (Imura). However, it is difficult to find the exit point for assistance from an Environmental Center project. We should continuously give some kind of assistance and gradually transfer the role to the 'knowledgeable groups', i.e. the public-private sector (Imura, Yagishita, and Imai).

③ Evaluation Process, Utilization of the Evaluation Results

We should utilize evaluation methods that observe the impacts on the recipient countries, like this evaluation, and require third-party evaluation of the local specialists (opinion from the audience). (This evaluation report contains a separate volume which includes reports from local researchers who conducted sponsored research.) It is important to make efforts to establish a system that can reflect these evaluation results in future international cooperation with Japan (opinion from the audience). What is necessary in the future environmental approach is to utilize the concepts used in this evaluation at the policy, program and project levels, to make a thorough study of the context, and to implement effective programs through reducing the scale and narrowing down the targets. This evaluation group will conduct feedback seminars in Indonesia, Thailand and China in this fiscal year to make efforts to promote our evaluation methods and results as well as to utilize them in the development of a similar project in the future (Miwa of JICA, as a summary of the discussion).

2.1.2. Mini-Seminar for JICA Staff Members

Objectives	: to report the evaluation result to JICA internals staff members as feedback for the current Environmental Center project operation and for the development of a similar project in the future.
Date and hour	: June 26, 2003 14:00 – 15:30
Venue	: JICA Headquarters, Meeting room 13B

Participants

JASID, Graduate School for International Development and Cooperation, Hiroshima University
Shunji Matsuoka (Professor), Naoko Honda (Doctoral Course Student)

Planning and Evaluation Department (Office of Evaluation and Post Project Monitoring)
Kaoru Suzuki (Deputy Director), Chihiro Saito, Hiromi Takenaka

Social Development Cooperation Department (First Technical Cooperation Division)
Jun Sakuma (Deputy Director), Mimpei Itoh, Sogawa Yoshiko

Social Development Cooperation Department (Second Technical Cooperation Division)
Eiji Iwasaki (Deputy Director), Minoru Kobayashi, Chika Takabatake

First Southeast Asia Division, Regional Department I (Southeast Asia)
Tsuyoshi Komori

Central America and the Caribbean Division, Regional Department III (Latin America and the Caribbean)
Nami Hongo

(1) Evaluation Results Report

(Shunji Matsuoka, JASID, Hiroshima University)

The report was composed of three sections; i.e. methodology of program evaluation, evaluation results and lessons. The three essential points of the evaluation research are as follows.

① It describes the formulation of a concept required in program evaluation through social capacity for environmental management (SCEM) discussions and social environmental management system (SEMS) discussions.

② It models the development process of SCEM into three stages, namely the system-making, system-working and self-sustaining stages.

③ It clarifies the appropriate timing for implementation of the Environmental Centers that promote the development of SCEM as being from the last phase of the system-making stage to the late system-working stage. From this point of view, the closing of the Environmental Research and Training Center (ERTC) project in Thailand might have been a little premature. On one hand, the Phase III project of the Sino-Japan Friendship Center for Environmental Protection in China is now beyond the scope of the project. On the other hand, Mexico had already entered the system-working stage when the National Center for Environmental Research and Training (CENICA) project started. Hence, the impact of the development of SCEM was considered to be not so significant.

The report emphasizes the importance of programming as a lesson and a proposal. We came to the conclusion that it is necessary to show an index box for the development of SCEM and its programming, and to simplify the analysis to cover programming, implementation and evaluation.

(2) Abstract of the Questions & Answers

The administrative positioning of the Environmental Center and its contribution attracted a high level of interest. Support at the Environmental Center is based on monitoring, research and training, and in many cases special emphasis is placed on monitoring technology. There was a question, taking the case of Egypt for example, of whether the Environmental Center is effective from the

perspective of contribution to the development of Social Capacity for Environmental Management (SCEM), although it mainly assists infrastructure of the monitoring system including local regions, thus having a slightly different feature from what is generally called an 'Environmental Center'.

To recognize the extent of the pollution by monitoring is an extremely important step in environmental management. It is one of the benchmarks in the system-making stage of the social environmental management system (SEMS). It is necessary for the monitoring data to be collected and analysis technology to be transferred within Environmental Centers including the case of Egypt.

On the other hand, methods to connect the collected data to the planning of policy and to the grounds for restriction have not yet been thoroughly discussed. Administrative positioning is needed where the Environmental Center can fully reflect its influence on environmental policy, to make an impact using its achievements through activities. It is also important that the level of the administrative capacity for environmental management in the recipient countries be commensurate with the Environmental Center cooperation.

When implementing projects that involve environmental cooperation, we should keep in mind that administrative regimes in developing countries are unstable. There was a voice from the hall that pointed out such situation in Vietnam, where an Environmental Center is planned to be launched in 2003. The environmental administration system is unstable there, thus for the time being, instead of the Ministry of Natural Resources and Environment, a subordinate organization of the national research organization similar to its level is planned to direct the implementation. It is of concern whether the Environmental Center will be favorably positioned in terms of a sufficient contribution to the policy planning of Vietnam.

The administrative regimes in developing countries are often reorganized on a large scale, thus it is important to carefully decide which department should be the counterpart for the Environmental Center and to recognize that there is no ideal condition. The positioning and the project of the Environmental Center must be durable to administrative reorganization.

Another opinion expressed regarding the strengthening of cooperation among the actors in SEMS. In the case of the Indonesian Environmental Management Center (EMC), while emphasizing on policy support, it is facing difficulty realizing assistance which promotes collaboration among the actors in SEMS. There is a limit of what it can do as an Environmental Center.

It is indeed not easy for Environmental Centers to make an impact on non-administrative sectors, as they are positioned as a regular administrative organization. It is important to combine various schemes including training when doing the programming, establishing the Environmental Center as a core.

2.1.3. Another Supplemental or Subsidiary Approaches

Symposium on International Environmental Cooperation
"Seeking a future direction for Japan-China Environmental Protection Cooperation"

Organizer: Sustainable Development Project Team of Graduate School of Environmental Studies, Nagoya University

Co-organizer: Japan Society for International Development (JASID), Tokai Branch

Objectives	: to discuss the future direction of the Sino-Japan Friendship Center for Environmental Protection (SJC) and harmonize views within Japan on Japan-China environmental cooperation and the potential of the environmental regime in the East Asian region
Date and hour	:February 16, 2004 13:30-18:00
Venue	:4F Main Conference Room, 4th Building of School of Engineering, Nagoya University
Participants	: approximately 20

Participants related to the feedback program:

Hidefumi Imura
(Vice President of JASID, Professor of Graduate School of Environmental Studies, Nagoya University)

Masaharu Yagishita
(Chairperson of the Supporting Committee in Japan for the Phase III project of the Sino-Japan Friendship Center for Environmental Protection, Professor of Graduate School of Environmental Studies, Nagoya University)

Hiromi Chihara
(Project Leader of SJC)

Shunji Matsuoka
(Principal Researcher, Professor of Graduate School for International Development and Cooperation, Hiroshima University)

Sara Okada
(Assistant Researcher, Doctoral Course Student of Graduate School for International Development and Cooperation, Hiroshima University)

(1) Contents of the Reports

Hiromi Chihara

'In the future Japan-China relationships, the issues of scale differences among regions and the

promotion of environmental diplomacy should be focused on. To realize a thoroughly modern society in current China, disparities 1) among provinces, 2) between urban area and rural areas and 3) between the rich and the poor must be redressed. The government is proceeding towards the enforcement and enhancement of the environmental system, especially by promoting the participation of citizens and locals. After Phase III, it is desirable for the Environmental Center to support the Chinese government to effectively address environmental issues in terms of research and policy through strengthening the Japan-China relationship.'

Shunji Matsuoka

Matsuoka indicated the importance of capacity development which contributes to the capacity development of the whole society, basing this opinion on the criticism against the existing technical cooperation such as that of the UNDP.

'It can be said that the social environmental management system (SEMS) of China is now in the period of transition from the system-making stage to the self-management stage; hence the Environmental Center project will end with Phase III. From now on, it is important that the Chinese government take the initiative in addressing environmental challenges particularly regarding capacity development in the western and inland areas. Japan-China cooperation should be discussed on these premises.'

Masaharu Yagishita

Yagishita's discussion focused on how to apply the Baltic States' experience with regional environmental policy to that in the Northeast Asia.

'The problem in Asia is that the direction as a whole area is unclear, because many program initiatives exist. It is necessary to understand the difference between the approaches of the Baltic States and Asia, and adopt what is applicable here. It is also important to offer a place where Asia can share a common understanding.

While China is now in a situation that it must review its entire economic system from an environmental perspective, while implementing the "end-of pipe" type solution to the environmental problems, it should be discussed as an issue for the whole of Asia, rather than discussing the SCEM of China itself. Regarding the Japan-China relationship of mutual trust and networks built in the history of the SJC project, the project should not be ended because China had entered the self-management stage, but should remain as a regime that co-addresses common issues between Japan and China or among all of Asia.

(2) Abstract of the Panel Discussion

① It is important to promote assistance that will be in Japan's national interest and raise accountability to the public.
② It is desired for the central government to take initiatives in the capacity development of rural and remote areas.
③ When considering the environmental issues in China, economic growth must, in parallel, also be taken into account.
④ Neither Japan nor China should act unilaterally, but both must take initiatives to lead all of Asia.
⑤ As for the consideration of a regional environmental regime, a decision based on the following priorities is desired: how much the cost burden would be for the developing countries, whether it will meet the needs of the developing countries and whether it will increase ownership.

2.1.4. Significance of the Evaluation Seminars in Japan

In this seminar, the methods and results of the program evaluation which set the development of SCEM as an analytic framework were analyzed. Discussion of the future direction of the Environmental Center project was held with JICA, the organization that executed the project. This discussion can be considered as an extension of opinion exchange with the execution organization which has been held separately from the actual evaluation. It served as a good opportunity to make a compromise evaluation and analysis between the academic perspective -- the Japan Society for International Development (JASID)--and the working level. It was also highly significant in bridging academic research and policy gaps through frank exchange of views on future roles for the Environmental Centers.

On the other hand, it is regrettable that the representatives from environmental management NGOs and firms had not been invited to express their opinions. In this seminar, it was determined that the capacity for environmental management showed certain improvement at the government level through the Environmental Center approaches. Hence the mainstream of the discussion argued that the future development process of social capacity for environmental management (SCEM) in developing countries should put special emphasis on the two actors, namely citizens and firms. Although the actual conditions and needs of citizens, firms and government must be shared to discuss the strengthening of the relationship among the three actors, it is undeniable that the scope was limited, as the discussion was restricted to remain within the research bodies and the working level participants. Considering the current situation of shifting to a new environmental problem from the industrial pollution problem that was the target of the evaluation, the participation of citizens and

firms is indispensable for the Environmental Center to sufficiently play its role. It is also essential for the Environmental Center to offer a place of opinion-and information-exchange where these sectors are actively involved.

In addition, the visibility of Environmental Centers was not high even among the Japanese persons involved in environmental development as well as the Japanese public. Its existence and function must be widely publicized in the nation to support proposals for further environmental assistance utilizing the Environmental Centers. Seeking ways to make use of the media as a method of feedback is also thought to be an effective means for gaining higher accountability.

2.2. Feedback Symposium and Seminar in the Recipient Countries

The objectives of the feedback symposium and seminar in the recipient countries included the following two points.

(1) To disseminate evaluation results to the involved persons in the recipient countries. The results are reported in the Third Party Evaluation Report of fiscal year 2002 of Japan International Cooperation Agency (JICA), *Environmental Center Approach: Social Capacity for Environmental Management and Environmental Cooperation in Developing Countries and Japan's Environmental Cooperation* (the Evaluation Team on Environmental Cooperation in the Japan Society for International Development (JASID)).

(2) To discuss the ownership towards development of Social Capacity for Environmental Management (SCEM) and the future of the international cooperation based on the results of the evaluation.

In the Symposium held in Indonesia, Thailand and China, reports and discussions took place including the evaluation analyses by the involved institutions from the recipient countries. A multiple evaluation was possible because analyses by the recipient countries themselves were included rather than adhering to the one-sided approach of the evaluation by external organizations. The following summarizes the discussions in each symposium.

2.2.1. Symposium in Indonesia

Symposium on Japan's Environmental Center Approach to Social Capacity Development for Environmental Management in Indonesia
(Organized by JASID & JICA and supported by PPMSL-UI)

Date and Hour ：Tuesday, July 22, 2004　09:30-15:30
Venue ：Mandarin Oriental Hotel Jakarta
Number of Participants ：approximately 60
Main Participating Organizations：

Ministry of Environment
Environmental Management Center
University of Indonesia
JICA Indonesia Office
JBIC Indonesia Office
UNDP Indonesia Office
Environmental Management Bureau, North Sumatra
Jakarta Environmental Management Board
Jakarta State University
Core Lab
Indonesia Center for Sustainable Development
University Pakuan Bogor
ICEL

Program

09:30-11:35	**SESSION I** **MC: Dr. Retno Soetaryono**
09:30-10:20	**Opening Addresses**
	Dr. Imura Hidefumi Vice President, Japan Society for International Development (JASID) Professor, Graduate School for Environmental Studies, Nagoya University
	Dr. Budhi Santoso Professor, Graduate Study Program in Environmental Science, University of Indonesia
	Mr. Hoetomo Deputy I, Ministry of the Environment
	Mr. Yuji Otake Deputy Resident Representative, JICA Indonesia Office
10:20-10:35	Coffee break
10:35-11:35	**Evaluation Presentations**

	Dr. Matsuoka Shunji Secretary General, Japan Society for International Development (JASID) Professor, Graduate School for International Development and Cooperation, Hiroshima University
	Dr. Setyo Sarwanto Moersidik Director, Centre for Research of Human Resources and the Environment, University of Indonesia
11:35-13:00	Lunch break
13:00-14:00	**SESSION II: Panel Discussion** **Chair: Dr. Hidefumi Imura**
	Drs. Muns Hilman, MSc Head of Environmental Laboratory Management Division, Environmental Impact Control Facility, Deputy VII, Ministry of Environment
	Drs. H. Hakimil Nasution Chief Director, North Sumatra Environmental Bureau
	Mr. Tetsuro Fujitsuka JICA Policy Advisor for Ministry of Environment
	Ir. Dana A, Kartakusuma, MSc Head of Bureau for Planning Administration and International Cooperation, Ministry of the Environment
	Dr. Budhi Sayoko Environment Unit, UNDP
	Mr. Tsuneyuki Sakai JBIC Indonesia Office
14:00-14:50	**Open Discussion**
14:50-14:55	**Concluding Remarks**
14:55-15:00	**Closing Address**

(1) Presentation on the Evaluation Results

(Matsuoka Shunji, JASID, Hiroshima University)

As written in the evaluation report, the evaluation was made with the unique and broader viewpoint of taking the environmental center projects as the environmental center approach at the program level. Indonesia is still in the final phase of the system-making stage in social capacity development for environmental management due to its premature environmental information management. The entry point and continuous supports of the EMC project since 1993 (scheduled up to 2006) can be regarded reasonable.

Taking substantial Japan's supports into account on the other hand, EMC has not been entitled with expected scope of function. For instance, partly due to unstable administrative system of the country, EMC is not necessarily taking an active role in environmental information management, which is an important factor in shifting from the system-making to system-working stage in SCEM.

Currently EMC is supported by JICA as the second phase of the project since July 2002. This project aims to strengthen local environmental management capacity especially supporting water resource management in the Deli River, Medan, North Sumatra. The project has two important aspects; supporting local environmental management and supporting EMC to build its supporting

capacity to local governments, and is expected to give EMC a new substantial role in environmental administration in Indonesia.

(2) Presentation on the Evaluation Results by the Local Researcher (Setyo S. Moersidik　University of Indonesia)

Although people's environmental awareness is not so high in Indonesia, more policy-makers and experts pay attention to similar ideas to social capacity development for environmental management. Since social capacity development involves economic conditions, education, political background, interactive relationships among stakeholders, it is important for universities, NGOs and the Ministry of Environment to take initiatives in capacity development.

Japan's supports to EMC to present are pretty successful. For future cooperation, we need to consider how EMC can contribute to the society.

(3) Panelist presentation and comments

① Muns Hilman (EMC)

EMC makes efforts to build environmental monitoring techniques as a national environmental reference laboratory and to introduce the techniques to staffs at local environmental management bureaus through the training programs. EMC is willing to supply environmental monitoring information to the ministry and local environmental management bureaus as before and to accept consulting projects such as environmental impact assessment and monitoring activities for the business sector.

② Hakimil Nasution (North Sumatra Environmental Management Bureau)

Since July 2002, North Sumatra province is receiving JICA's support for local environmental management capacity strengthening as a pilot case. This project is especially for capacity development for environmental management in the Deli River, environmental laboratory management and monitoring enforcement. Developing countermeasure for pollution control is also our future goal. social capacity development such as environmental education and policy participation of various social actors is essential to make these realized.

③ Fujitsuka Tetsuro (JICA experts to Ministry of Environment, Indonesia)

In order to achieve environmental management, Indonesia needs pollution control capacity, law enforcement, national local administration capacity and environmental awareness building. The second phase of EMC project (Decentralized Environmental Management System Strengthening

Project) is a pilot case to support these important challenges. While Indonesia needs to overcome domestic environmental issues, it faces global issues such as climate change and acid rain, and Japan also supports Indonesia to manage these issues by holding workshops and sending experts.

④ Dana A. Kartakusuma (Ministry of Environment, Indonesia)

The ministry is implementing environmental projects with supports from Japan, AusAID, GTZ, CIDA, Asian Development Bank, the World Bank, UNDP and so on. They also actively support NGO activities in Indonesia. Recently donor agencies have more interests in social capacity development as well as technical supports for environmental management. In this regard, it is important to assist capacity development of citizens and firms as environmental resources users.

⑤ Budhi Sayoko (UNDP Indonesia office)

There are several important factors in capacity development in environment; understanding overall problems and social needs in environmental management, involving important stakeholders in setting priorities to short, mid and long term challenges, and donor coordination. UNDP's mission is to support capacity development and building good governance, and we are willing to collaborate with the government, firms and citizens for better environmental management in the country.

⑥ Sakai Tsuneyuki (JBIC Indonesia office)

JBIC implemented BAPEDAL (now Ministry of Environment) Regional Monitoring Capacity Development Project, synchronized with JICA's support to EMC. The project period is, according to the country analysis in the evaluation report by JASID, just the final phase of the system-making stage of social capacity development for environmental management in Indonesia. The project mission was expected to contribute to shifting Indonesia to the system-working stage, but at this moment, partly due to recent reorganization of the ministries, we do not have an evident clue for evaluation whether it really did.

Two interesting suggestions were made in the evaluation report by JASID; programmed assistance aiming to develop the capacity of the entire field of the environment, and the involvement of private firms and NGOs in environmental cooperation. Further concreted implications for policy-makers are expected.

(4) Discussions at the seminar

① Environmental management in local cities

Currently Indonesia is experiencing rapid decentralization and therefore it is quite important and urgent to build technical and administrative environmental management capacity in local

governments. The EMC second phase project, which mainly supports capacity development for environmental management in Medan, North Sumatra, can be a good example in this trend. However, we need to keep paying attention how the second phase project can produce expected outputs and impacts on other local cities since the decentralization situations of environmental administration are different among provinces and yet stable.

② Donor coordination

There are several projects related to the EMC activities such as monitoring station (59 units) development projects by AusAID and JBIC and the monitoring network supporting project (10 cities) by Austria but the coordination among the donors have been far behind satisfaction. Although the Indonesian government seems to pay its most attention to economic recovery and much less to environmental issues after the financial and political crisis in the late 1990s, it is very important that international and bilateral donors coordinate their supports and find efficient approaches of international cooperation.

2.2.2. Symposium in Thailand

Symposium on Social Capacity Development for Environmental Management in Thailand and Japan's Environmental Cooperation
（主催：JASID・JICA、協力：TEI）

Date and Hour ：Thursday, July 24, 2004　09:00-15:30
Venue ：Westin Grande Sukhumvit, Bangkok
Number of Participants ：Approximately 60
Main Participating Organizations：

Embassy of Japan in Thailand
JBIC Thailand Office
UNESCAP
ERTC
Chulalungkorn University
Huachiew Chalermprakiet University (SES)
Kenan Institute Asia
Samut Prakarn Environmental Society
TEI
JICA Thailand Office
TEI

DEQP-MONRE

Institute of Environmental Technology, Vietnam

Department of Environment and Natural Resources

City of Phuket

Bangkok Metropolitan Administration

ERTC

MONRE (OEPP, PCD, DEQP)

Department of Industrial Works

NESDB

UNDP

Kasetsart University

Mahidol University

TEAM Consulting Engineering and Management

Federation of Thai Industries

SES

Program

09:00-12:30	**SESSION I** **M.C.: TEI**
09:00-09:50	**Opening Addresses**
	Dr. Imura Hidefumi Executive Board, Japan Society for International Development (JASID) Professor, Graduate School for Environmental Studies, Nagoya University
	Dr. Thongchai Panswad President, TEI
	Dr. Monthip Sriratana Tabucanon Director General, Department of Environmental Quality Promotion
	Mr. Nakai Shinya Resident Representative, JICA Thailand Office
09:50-10:05	Coffee break
10:05-11:05	**Evaluation Presentations (Chaired by Dr. Imura)**
	Dr. Matsuoka Shunji Secretary General, Japan Society for International Development (JASID) Professor, Graduate School for International Development and Cooperation, Hiroshima University
	Dr. Qwanruedee Chotichanathawewong Program Director, Thailand Environment Institute
11:05-12:30	**Panel Discussion** **Chair: Dr. Hidefumi Imura**
	Dr. Monthip Sriratana Tabucanon Director General, Department of Environmental Quality Promotion
	Dr. Nguyen The Dong Director, Institute of Environmental Technology

	Ms. Ella S. Deocadiz Chief Science Research Specialist, Department of Environment and Natural Resources
	Questions and Answers
12:30-13:30	**Lunch break**
13:30-15:00	**SESSION II: Special Discussion** *Making social environmental management systems at provincial level in Thailand* **Chair: Dr. Thongchai Panswad**
	Mr. Prasai Wangpanish Vice President, Samut Prakarn Environmental Society
	Dr Thussanee Aikvanich Acting Director of Health and Environment Division, City of Phuket, Phuket Municipality
	Dr. Somporn Kamolsiripichaiporn Deputy Director, National Research Center for Environmental and Hazardous Waste Management, Chulalongkorn University
	Dr. Matsuoka Shunji Professor, Graduate School for International Development and Cooperation, Hiroshima University
	Dr. Monthip Sriratana Tabucanon Director General, Department of Environmental Quality Promotion
14:30-15:00	**Questions and Answers**
15:00-15:05	**Concluding Remarks**

(1) Presentation on the Evaluation Results

(Matsuoka Shunji　JASID, Hiroshima University)

As written in the evaluation report, the evaluation was made with the unique and broader viewpoint of taking the environmental center projects as the environmental center approach at the program level. Thailand's social capacity for environmental management has shifted from the system-making stage to the system-working stage in the mid 1990s but it is in the very first phase still now and yet to have fully developed environmental policy and management. Taking the project period of Environmental Research and Training Center (ERTC) into consideration of SCEM development, one possible idea would be that we should have continued supporting the center after 1997 in some other ways.

To present, ERTC has limited scope of function (research and training) and it will need to coordinate with other similar research institutes for its roles in environmental policy in Thailand. However, as a whole, we highly evaluate ERTC's efforts and achievements on training a lot of local government officials and NGO staffs since its foundation and expect that the center has sustainable management capability of their activities.

(2) Presentation on the Evaluation Report by the Local Researcher
(Qwanruedee Chotichanathawewong　TEI)

ERTC has done environmental research and training courses and gained a certain evaluation from government officials according to our questionnaire survey. Issues influencing its future direction are personnel development, privatization and budget management. To present (July 2003), ERTC activities are funded 100% by the government but it is expected that research funds are to be cut off by more than 50%. Therefore ERTC needs to raise funds for its management and to make efforts to improve research outputs.

(3) Panelist presentation and comment

① Monthip Sriratana Tabucanon (Department of Environmental Quality Promotion, Ministry of Natural Resources and Environment)

From my experiences as the Director of ERTC during the project period, there would be some dissatisfaction to then and present JICA's attitudes. After the termination of the project in 1997, ERTC has been managed by the Thai government with other donor agencies' supports, not JICA. Currently it takes a role mainly as a training institute for local government officials and contributes to capacity development for environmental administration in local cities, which is one of the most important issues.

② Nguen The Dong (Institute of Environmental Technology, National Centre for Natural Science and Technology, Vietnam)

Recently Vietnam faces various environmental problems such as water and air pollution, solid waste management, and the government is realizing the importance of environmental policies. We have a number of international cooperation projects, and Institute of Environmental Technology will start one project supported by JICA "Enhancing Capacity in Water Environment Protection" in November 2003.

③ Ella S. Deocadiz (Environmental Management Bureau, Department of Environment and Natural Resources, the Philippines)

Applying benchmarks of social capacity development for environmental management by JASID to our country, currently the Philippines seems to stand on the latter phase of the system-making stage and is shifting to the system-working stage. Although the environmental administration body, laws and regulations have been developed, environmental information management and disclosure is still under development. At the same time, however, social actors such as firms and citizens (NGOs)

as well as the government are actively involved in environmental management in recent years.

In this year 2003, we submitted a project proposal for capacity development for environmental management to the Japanese government, which focused on administration enforcement and institutional development rather than technical capacity development, taking the country's issues into consideration.

④ Prasai Wangpanish (Samut Prakarn Environmental Society)

Samut Prakarn Environmental Society (SES) is founded in 1998 with supports by TEI and EC in the aim of involving various social actors to environmental management in the industrial areas of Samut Prakarn Province. The members are local municipalities, the chamber of commerce, NGOs, community leaders, professors and researchers and so on. SES has activity policies such as developing and training cleaner technologies, environmental awareness building and managing environmental conflicts.

⑤ Thussanee Aikvanch (Health and Environment Division, City of Phuket)

The vision of City of Phuket is moving toward Livable City up to 2006. At present the city faces various brown and green issues and is working especially on solid waste management and sewage garden. These efforts are done supported by domestic and international organization such as TEI, ICLEI, CIDA, USAID/USAEP and in coordination with other local authorities.

⑥ Somporn Kamolsiripichaiporn (Chulalongkorn University)

Thailand is in the midst of decentralization and the following issues should be noticed: the unclear power distribution between the central and local authorities, environmental problems being less prioritized. Actually decentralization and deconcentration are happening at the same time and we need to figure out optimal solutions.

(4) Discussions at the seminar

① *Environmental Center Approach* as a new business model

The existing environmental center projects took so-called project type technical cooperation approach, which contains building and facility supply, expert dispatch from Japan and training course supply in Japan. A future environmental center project will need to be designed to make more contribution to soft infrastructure, or social system such as environmental administration capacity and environmental management in private sectors rather than just hard infrastructure. The same should be pointed out regarding further possible support to existing environmental centers.

At the seminar, some Thai government officials had different ideas toward the evaluation results

presented in the report and the project duration of ERTC. However, the report and the seminar aimed to give evaluation and suggestions to Japan's environmental cooperation taking cases of the environmental center projects and the focus was not the project evaluation itself, and this fundamental and unique standpoint was made clear once again.

② Indicators of social capacity for environmental management

Some participants from international organizations were interested in the indicators presented in the report and recognized the importance to analyze capacity development with qualitative indicators while international cooperation strategies often have been made based on one-sided viewpoints such as economic indicators and even with no clear reasonable indicators. The further development of indicator studies of social capacity for environmental management is highly expected.

③ Central and local relationships in government authorities

Decentralization in Thailand is not so radical as in Indonesia but does exist and capacity development for environmental management in local administrations is an important issue. ERTC, which has supplied training courses to local government officials for years, is expected to make continuous and active contributions to this point.

④ Regional environmental management in Asia

At the Thailand seminar, two invited experts, each from Environmental Management Bureau of Department of Environment and Natural Resources, the Philippines and from Institute of Environmental Technology of National Centre for Natural Science and Technology, Vietnam, reported the present situations of environmental management in each country. Environmental cooperation projects in these two countries were under consideration at that moment*, and several participants mentioned about a new model for environmental centers and coordination between ERTC and other environmental centers. In addition, a Thai government official suggested that we ERTC and JICA should have continuous information exchange with other centers such as Sino-Japan Friendship Center and EMC and build an environmental management network in Asia, and this idea would give a quite important implication to Japan's international cooperation to make more sustainable and substantial impacts on capacity development in developing countries.

* Currently a project for water environmental technical capacity development is being implemented as another case of an environmental center project in Vietnam (November 2003 to October 2006).

2.2.3. Seminar in China

Seminar on Social Capacity Development for Environmental Management in the People's Republic of China and Japan's Environmental Cooperation

(Organizers: JASID, JICA, Hiroshima University (21st Century COE Program), Sino-Japan Friendship Center for Environmental Protection)

Date and Hour : Tuesday, April 24, 2004 09:00-15:05

Venue : Sino-Japan Friendship Center for Environmental Protection (SJC), Beijing

Number of Participants : 48

Main Participating Organizations:

JICA China Office
JBIC China
Embassy of Japan
State Environmental Protection Administration（SEPA）
Ministry of Science and Technology
Chinese Academy for Environmental Planning
Policy Research Center for Environment and Economy
The Sino-Japan Friendship Centre for Environmental Management
Renmin University of China
GTZ
U.S.-China Environmental Governance Training Program
China Association for NGO Cooperation（CANGO）
Guiyang EPB
Shenyang EPB

Program

09:00-12:00	**SESSION I**
09:00-09:25	**Opening Addresses** **MC: Dr. Xia Guang**
	Ms. Zhang Qinghong Sino-Japan Friendship Centre for Environmental Protection **Mr. SAKURADA, Yukihisa** Director, Japan International Cooperation Agency (JICA) China Office **Prof. IMURA, Hidefumi** Executive Board, Japan Society for International Development (JASID) **Mr. RUAN Xianping** Ministry of Science and Technology **Mr. KIKUCHI, Hidehiro** First Secretary, Embassy of Japan
09:25-09:55	**Keynote Speech** **Chair: Dr. Ren Yong**
	Dr. MATSUOKA, Shunji Secretary General, Japan Society for International Development (JASID) Professor, Graduate School for International Development and Cooperation, Hiroshima University
09:55-10:05	Coffee Break
10:05-10:50	**Evaluation Report** **Chair: Dr. Ren Yong**, Deputy Director, Policy Research Center for Environment and Economy
	Dr. ZOU, Ji Professor and Head, Department of Environmental Economics and Management, Renmin University of China **Dr. PEI Xiaofei** Research Fellow, SEPA, Policy Research Center for Environment and Economy **Dr. GE Chazhong** Fellow, Chinese Academy for Environmental Planning
10:50-12:00	**Comments** **Chair: Dr. Ren Yong**
	Mr. CHIHARA, Hiromi Chief Advisor, JICA, SEPA, the Sino-Japan Cooperation Project Office **Mr. Edgar ENDRUKAITIS** Program Director, SEPA-GTZ **Mr. KOYANAGI, Hideaki** JICA Expert, SEPA, the Sino-Japan Cooperation Project Office **Mr. MORI, Naoki** JICA Expert, SEPA, the Sino-Japan Cooperation Project Office **Mr. Gordon DAVIS** U.S.-China Environmental Governance Training Program
12:00-13:00	**Lunch break**
13:00-15:00	**SESSION II Panel Discussion** *The future of China- Japan Cooperation in Environmental Issues* **Chair: Dr. IMURA, Hidefumi**

	Prof. YAGISHITA, Masaharu Chairperson, Supporting Committee in Japan of the Sino-Japan Cooperation Project Phase Ⅲ Professor, Graduate School of Environmental Studies, Nagoya University **Mr. XIA Guang** Director, SEPA, Policy Research Center for Environment and Economy **Mr. Huang Haoming** Vice Chairman and Executive Director, China Association for NGO Cooperation (CANGO) **Mr. Cui Hongmei** Guiyang EPB **Ms. WANG Xueyan** Director of International Cooperation Department, Shenyang EPB **Mr. MITAKE, Eiichiro** Senior Representative, Japan Bank for International Cooperation (JBIC) China **Dr. MATSUOKA, Shunji** Secretary General, Japan Society for International Development (JASID) Professor, Graduate School for International Development and Cooperation, Hiroshima University
14:00-15:00	**Discussion**
15:00-15:05	**Concluding Remarks**

(1) Presentation on the Evaluation Results

(Matsuoka Shunji, JASID, Hiroshima University)

China entered its System-making stage in 1979, and shifted to System-working stage in the mid-1990s. Now the country is gradually shifting to Self-management stage as the Beijing Olympics in 2008 and Shanghai Expo in 2010 approach.

It was appropriate that the environmental center project was started in 1992, which was the last stage of System-making stage. The project, now in its 3rd phase, has continued after the last period of System-working stage. We should reconsider the center's roles now.

The center has functioned as a medium of China-Japan environmental cooperation, and contributed to the development of SCEM in China, especially in the government sector. Now the cooperation should shift from government-centered to more of a cross-sector approach. Also, the center needs to focus on the local environmental management capacity development, especially in the western and inland provinces.

Both China and Japan should cope with global environmental problems as a member of Asia. We should emphasize on enhancing dialogues between the two countries, together with Korea, to initiate the East Asian regional environmental regime.

(2) Presentation on the Evaluation Results by the Local Researcher

① Zou Ji (Renmin University of China)

Environmental center has contributed to the development of the capacity of researchers, enhancement of technical cooperation, promotion of citizen participation in environmental activities. We can say that the center has played an important role in bringing up the capacity of Chinese government both at national and local levels.

The center is expected to offer a place to further enhance: R&D, Information collecting and analysis, strategies for policy-making, and education. Especially, targeting the 10^{th} 5-year-plan, the center should focus on high-level research activities for strategic policy-making. Especially, for sustainable development, China should cope both with poverty as well as environmental protection. At the same time it is expected to deal with global environmental problems. In order to realize these, it is important for the citizens, NGO, firms, academics and media to participate. Also, the center should expand its cooperation with other governmental divisions, based on the current relationship with SEPA.

② Xiaofei Pei (PRCEE)

We can observe the activities taken by the 3 actors. Government developed environmental laws (basic laws and specific regulations), environmental administration, environmental information, and investment. Firms established environmental management staffs, conducted monitoring, set up pollution control facilities and made regulations. There is a ranking system for such activities by the firms and more than 60% have met the emission standards. In the citizen sector, especially the roles of NGOs and media have grown.

Future China- Japan cooperation should be more horizontal and open, making it possible for both countries to gain profit. China is going to present its needs, not just accepting what is offered. Also, it is important to build a strong working mechanism so that a comprehensive response to various issues will be possible. Domestically, China should strengthen relationships with local EPB in order to develop local SCEM.

③ Ge Chazhong (Chinese Academy for Environmental Planning)

The environmental center has contributed to the development of the government system. It is shown in the increase in the number of government officials in environmental sector, spread of environmental education and newly established information system. Also, there are more than 2000 new NGOs and citizen participation has grown. Along with this trend, firms have taken active roles

in pollution control. The above shows that the relationships between the 3 actors have strengthened.

As for environmental policies, economic methods as well as “Command and Control” policies have been implemented. Also, the basis of environmental investment system was established, initiated by the government. The ratio of environmental investment to GDP has steadily grown. As a result, main pollution problems have been decreasing, and despite the country’s high economic growth, the ambient quality has been steady. The development of urban infrastructure leads to employment and economic growth. However, investment has not been made enough to solve all the problems and its efficiency is still low.

(3) Panelist presentation and comments

① Chihara Hiromi (SJC)

I am not sure if China has established enough mechanism to be considered to be shifting into self-management stage of SEMS. Since the electricity use has not been increased, SOx problem will take more time to be solved. There are various environmental issues in China and we need various analysis for such problems.

② Edgar Endrukaitis (GTZ)

The environmental center has functioned as a system for environmental research and education. It is expected to connect various actors and build a network. For this purpose, marketing of the center is essential, such as creating a cooperate identity as a center. Also, the network will expand to other organizations if the center works as an education institution within environmental community.

③ Koyanagi Hideaki (SJC)

Before executing a project, we should consider the project’s administrative status and the realm of authorization. At the same time, we need to make clear the share of responsibility with other similar projects. In running a project, the biggest concern would be financial feasibility.

The environmental center has been authorized by the central government to focus on local environmental issues. In this sense, the planning of the project was successful. Phase Ⅲ is an important period when more and more attention has been paid to local roles in SCEM development as a country.

④ Mori Naoki (SJC)

JBIC has worked on a project to support local universities and graduate schools for local human resource development. Seen from the relation to this project, the environmental center could play a

role as a contact between China and Japan in environmental education. Network between local universities is expected to expand to that between local governments, NGOs, firms and so on. The center can play a role as a hub of information.

⑤ Gordon Davis (U.S.-China Environmental Governance Training Program)

In order to develop local capacity, access to information and institutional building are indispensable. Currently, the local governments lack: human resources, financial resources, will to make change, and realization of eco-friendly system.

What we can do for such problems is to financially support local experts. It is not possible to apply a successful case to other region as such, however, we should consider how to extract and utilize useful information/methods of such cases. Joint research or project with donor countries may contribute to this.

(4) Panel Discussion

Yagishita Masaharu (Chairperson, Supporting Committee in Japan of the Sino-Japan Cooperation Project Phase Ⅲ)

Socio-economic development in developing countries takes different pattern than that of developed countries. Therefore, a simple technical transfer will not work. As the socio-economic development in China progresses, horizontal cooperation will be needed, and the environmental center's role will change.

China is now implementing the "end-of pipe" type solution to the environmental problems, at the same time changing the social system to a more ecological one. The environmental center should graduate from ODA and must function as a center of international collaborative research and strategic center for sustainable development.

As for sustainable development, it is time for Asian countries to tackle common environmental problem together. Regional environmental regime in the Baltic States will be a good example for us. It is necessary to understand the difference between the approaches of the Baltic States and Asia, and adopt what is applicable to Asia. It is also important to offer a place where Asia can share a common understanding. Information disclosure and sharing will be the key to cooperation.

Discussion Points

① Roles of the Sino-Japan Friendship Center for Environmental Protection

It is important to open the SJC to the community: The center can play a role as collecting and

publishing information to exchange information. It should promote information exchanges from countries besides Japan and China and non-governmental actors by explicitly accepting them.

One of the challenges is to expand support to local areas: The center could play a role as a place to exchange experts among central, local and local-to-local (including Japan regions), to conduct collaborative research and projects with local sectors, to develop (educate) human resources in the local areas.

The center could also serve as an international collaborative research center: It must offer a place where high-level research takes place and which can be utilized for policy proposals for sustainable development. It is important to recruit and develop human resources for this purpose.

The center could support transfer from the government sector to the private sector in decision-making. It is crucial for the government to make decisions with the participation of various interested parties.

Also, it would be effective to establish an exchange-mechanism in the center for private sectors (firms and NGOs). This will enable the center to sustain human and financial resources.

② Horizontal Cooperation between Japan and China

China-Japan relationship will be based on equal partnership: Environmental problems will enhance such horizontal cooperation and make it possible for the two countries to approach common environmental problems beyond political and cultural differences. It is necessary for both countries to take approaches through understanding the responsibility of each to achieve the goal.

Cost-sharing is important for equal partnership. It is important for the developing countries to consider financial sustainability as one of environmental capacity. The key is to set an appropriate goal to raise bilateral motivation. Promotion of technical innovation will make contribution to economic evolution through the provision of a market for Chinese and Japanese firms.

③ Establishment of an Asian Environmental Regime

It is time to set a common environmental goal in the Asian region to solve global environmental problems. For the goal-setting, it is necessary to coordinate among the interests while respecting the autonomy of each country. Information sharing and policy dialogues is important for collaborative research and policy-making.

Establishment of a financial mechanism is one of the biggest concerns in building such regional regime. It is necessary to establish a financial foundation beyond Official Development Assistance (ODA)

2.2.4. Lessons and Challenges from the Feedback symposium and seminar in the recipient countries

In the symposiums and seminars in the recipient countries, we were able to discuss the positioning of the Environmental Centers at the respective sites, the expected roles of the Centers and the future environmental cooperation regime with Japan, through evaluation reports by the bodies concerned in the recipient countries. As mentioned in the evaluation reports, differences were seen in challenges for and future roles of the Environmental Centers within each of the countries, because the level of social capacity for environmental management (SCEM) differs among the countries. Although there were differences, a consensus was reached on promoting a horizontal approach with Japan, according to the development level of the respective countries.

For the achievement of such an approach, it is important to shift the environmental cooperation regime ① from hard assistance to soft assistance, ② from project base to program base, ③ from bilateral to multilateral or region-to-region cooperation and ④ from unilateral to bilateral aid relationships. The Environmental Center is expected to offer a “place” to realize these goals.

The issue of offering a place for soft assistance was frequently taken up in the symposiums and seminars, discussing the necessity for the firms, citizens and local groups to participate in the approach to the environmental issues to improve capacity for environmental management. Quite a few proposals were made for the realization of the concept. Ideally, it is desirable for the central government to take initiatives in bringing out the voices of firms, citizens and local groups, but as mentioned by a concerned local participant at the Seminar in China, the actual fact is that capacity development has not been implemented through an Environmental Center promoting collaborative research and projects with the local participants. Although there was some consensus regarding the direction of the approach to environmental issues as a whole nation, local residents feel that they have not received sufficient financial and human resource assistance from the central government. This feedback symposium was significant in the terms of opinion-exchange including local interests and NGOs, and it is necessary to continuously offer opportunities for communication among the actors.

As environmental cooperation expands to multilateral and region-to-region levels, and as a bilateral relationship where countries concerned can collaboratively address common tasks which increase each other’s national interests, instead of one-sided aid from Japan, changes are required in the roles of the Environmental Centers. It is important to clarify worthy common tasks and incentives for the countries concerned to be willing to invest in establishing an operating fund

mechanism for the Center and in conducting collaborative studies and research projects by the respective countries. Once again, communication between Japan and the countries concerned is essential. The Environmental Centers are in danger of losing focus after the Environmental Center Projects have ended. We must continuously exchange opinions and information at the nation level, to lead to autonomous social capacity for environmental management, while always keeping in mind the evaluation at the program level.

3. Lessons Learned from the Feedback Seminar

The third-party evaluation, "Environmental Center approach: Development of Social Capacity for Environmental Management in Developing Countries and Environmental Cooperation", carried out in FY 2002 was conducted by JASID. Third-party evaluation enables highly professional evaluation that may lead to new knowledge creation. New evaluation methodology developed through evaluation process needs to be further discussed for future development cooperation. For this purpose, evaluation feedback should be open not only to working organizations but also to various levels of stakeholders. The feedback seminars we held were aimed to JICA and other international organizations, Japanese citizens as well as developing countries.

Evaluation feedback is an opportunity to notify the evaluation results to stakeholders, at the same time, a process to be socially evaluated from them.

In the following sections, we will present the impact the seminars have projected to the society, especially in academic and working field. Next, we will describe the future roles of the environmental centers and prospects of environmental cooperation.

3.1. How to Bring Positive Impact out of the Seminar

The main objectives of the evaluation feedback are to inform the stakeholders of the evaluation results, and to bring impact on future research and policy-making. In order to realize these purposes, it is crucial to plan the feedback projects so it would lead to future steps of international cooperation.

These feedback seminar projects can be seen as the final stage of the environmental assistance evaluation which lasted for three years, following the preparatory meetings of the advisory committee from JICA in December 2001 and the initiation of the evaluation project by the Environmental Protection Center.

The preparatory meetings of the advisory committee set an evaluation scope and analysis framework to perform four review sessions in 3 months. They were discussed not only with the executing organization, but also with observers from related organizations.

After receiving the proposals from the review sessions, this evaluation project in 2002 supported an evaluation of the program, not only by the evaluating side, Japan Society for International Development, but also by the related organizations in the recipient countries. The purpose of these feedback seminars was broadly to provide the results to the related organizations and utilize them for the future execution of environmental assistance policy.

In this series of projects, from the preliminary step of starting the evaluation projects, the necessity of feedback has been within view. Therefore, from the advisory committee to the feedback seminar, programs have been consistently executed along the way and the impact from these programs, which will contribute to future improvement, will be expected by the information sharing stage.

By analyzing the impact on JICA, Japan, and the developing countries, we will observe whether the feedback seminar project has successfully brought out a mechanism that leads to sustainable development

(1) Impact on JICA

Active opinion exchanges were accomplished on the future role of the environmental centers and the direction of environmental cooperation in the feedback seminars which were carried out in Japan, Indonesia, Thailand and China. However, institutional responses to the results of the evaluation and suggestions made at the seminars have not been enough on the JICA side.

In order to utilize the evaluation results in the working field, the possibility of setting a pollution task in JICA in 2002 was discussed at the preparatory meetings of the advisory committee to enhance technical cooperation for pollution control. Such institutional support system was discussed to be important for bridging research and policy, however, the task force has not been realized yet.

Considering the impact after sharing information, it is essential to establish a systematic framework for opening an outlook for the future and should not be limited the seminars simply to mutual knowledge or opinion exchange.

(2) Impact on Japan

Evaluation and feedback project has made a significant impact on academic research in Japan. Through the project, JASID has worked on theoretical development of the analysis framework of social capacity for environmental management. As a branch of such research activities, in September 2003, Graduate School for International Development and Cooperation, Hiroshima University has launched a five-year program, the 21st Century Center of Excellent (COE) Program (“COE for Social Capacity Development for Environmental Management and International Cooperation.” For further information, please visit the flowing website, http://www.jsps.go.jp, http://home.hiroshima-u.ac.jp/hicec/).

The targets of the program research are East Asian countries’ social capacity development. We have developed the analysis framework though the research network between universities, governmental organizations, research institutions, local government and civil society of target

countries. We also work collaboratively with Japanese development organizations such as JICA and JBIC. Through such activities, the concept of SCEM (Social Capacity Development of Environmental Management) has spread both domestically and internationally.

The role of the academic level is theoretical construction of the analysis framework that is useful for policy decision-making. Using the knowledge network we have build through the evaluation and feedback project, we have to further reconsider the concepts used for evaluations and to present a versatile analysis model.

(3) Impact on Developing Countries

Impact of the feedback seminars on the developing countries has been significant. Especially the relationships between universities and research institutions of China and Indonesia have developed, relating to the above mentioned 21st Century COE Program of Hiroshima University. As for building SCEM index, joint research has been conducted with China. Also, research on citizens and firms in SCEM, which is one of the biggest concerns suggested at the seminars, will be jointly studied in the near future.

On the other hand, impact on the development policy and environmental policy in the developing countries needed more consideration. Program approach evaluation for environmental center has gained understanding at the symposium and seminar in the recipient countries. Also though the feedback, each country realized its own weakness and could set up a specific goal for future environmental management. However, there has not been enough environmental policies made by the developing country's initiative. As will be mentioned in 3.2, environmental centers' mutual cooperation is expected for South-south cooperation.

3.2. Future Roles of the Environmental Centers and the Environmental Cooperation

(1) Future Roles of Environmental Center

① Environmental Center Open to Government, Citizens, and Firms

The international cooperation trend is shifting from hard-based technical transfer to more soft-based technology transformation such as system or institutional building. As this change, environmental center needs to focus more on cooperation with citizens and firms more than government-oriented ODA. Therefore, environmental center is expected to be more attractive to researchers, private companies and NGOs. However, since the center has been built to mainly support technical assistant for the government, its impact on other sectors have been relatively small.

In Seminar in Beijing, China, there was an opinion of making the center work as a market, and

make it more open to private organizations. It would be a good way of expanding the information network at the same time maintaining its financial sustainability. For such ideas to be realized, environmental center needs to provide a place for continuous policy dialogues.

② Environmental Center as Human Resource Education Institution

In order to make the environmental center a world-class research institution, enough number of staffs with at least a master's degree (preferably a doctoral degree) is crucial. The Sino-Japan Friendship Center for Environmental Management, with the highest ratio of staffs with master's and doctoral degree among the evaluated countries, has only one-fourth of its total staffs with master's and doctoral degree. If the center is to aim at higher research level, it is urgent to make the center a place to educate human resource.

Also, the environmental center can play a role as a medium between governments and universities for joint research to solve global environmental problems. International cooperation projects such as supporting information network, local university education, local environmental laboratory, and training courses will function more effectively if the environmental center can play more active roles.

③ Environmental Center for Local SCEM Development

As the decentralization progresses in developing countries, it is urgent to develop environmental management capacity of local governments. Especially important are the education for specialists of environmental field, and awareness building and training for local environmental officers. The environmental center has made some achievement in this point.

The center needs to be a place for central and local governments to jointly work on projects and research. It is what the local governments asked for at the seminar in Beijing, China. If there are more interactions between central and local experts, SCEM will develop in a country.

④ Environmental Center for Donor Cooperation

Although there are a number of projects running in a developing country, the interactions among them are scarce. At the feedback seminars in the recipient countries, there were participants from other donor countries. The point was how to enhance donor communication to make a project or program work more efficiently and effectively. By having this kind of opportunity for donors to communicate, there would be more implication for newly arising environmental problems. The environmental center is expected to promote such dialogues.

(2) Environmental Cooperation and East Asian Regional Regime

① Partnership between Japan and Developing Countries

ODA-based, vertical cooperation will shift to horizontal partnership beyond ODA. Also, bi-lateral cooperation will expand to multi-lateral and regional cooperation. International cooperation will be accompanied with more needs of accountability towards the citizens of related countries as well as national profit. Related countries will have to cooperate on equal footing.

② South-south Cooperation and East Asian Regional Environmental Regime

The environmental centers in the recipient countries should conduct a joint research. Acid Deposition Monitoring Network in East Asia (EANET) is one of the regional environmental activities that the environmental centers take initiative of.

Recently, the idea of East Asian regional environmental regime has been popular. Environmental problem has been realized as an issue that East Asian countries as a whole should cope with despite the difference in socio-economic backgrounds. It is important to share common goals to achieve common interests, and the environmental center can play an important role as a place for dialogue.

South-south cooperation will be an introduction to such regional environmental regime. There have been a couple of training program initiated by environmental centers (JICA Third-Country Training program) in China and Thailand. It is expected that these activities will lead to effective regional regime in the future.

4. New Knowledge Creation in Academic Research and the Working Organizations

The most important issue in Japan's international development and cooperation works is to bridge research and policy. Due to lack of the efforts in this regard Japan's contribution to knowledge development may not satisfy developing and donor countries. The evaluation project and feedback seminars for the environmental center approach were conducted in order to challenge this problem. Here we make clear the issues for new knowledge creation in Japan's international development and cooperation.

The evaluation research by JASID is to do academic research for better policy-making and practice in international cooperation from the viewpoint of bridging research and policy. Japan has been recognized as a top-level donor in terms of money amount, but actually not highly appreciated due to the lack of bridging research and policy.

What Japan needs in international cooperation is knowledge creation to promote the unique ideas of Japan's activities. As a trial, the evaluation project by JASID was conducted to bridge the evaluation research by JASID and environmental cooperation by JICA. Below is the summary and generalization of evaluation research and discussions on the environmental center projects and another evaluation project by JASID: Afforestation Project, Aravalli, India funded by JBIC. The discussion also includes Japan's intellectual international competence.

4.1. Location of the Problem: the Lack of the Intelligent Internationally Competitive Power from Japan in the Field of International Development

A recent article by Ohno (2002) concluded that the argument for development cooperation in Japan has been expanding in quite a different direction from the global trend; thus, Japan cannot lead the discussion in the intelligence field even though Japan is quantitatively the largest aid giver. In concrete terms, Japan has studied those items which deeply refer to Japan, such as: (1) the mainstreaming of the PRSP, (2) changing to grant aid (given for free), and (3) the selection of recipient nations which have medium grade income. The concepts of the PRSP and MDGs, both discussed with regard to their availability and effectiveness based on the limited number of results, are largely different from Japan's philosophy for aid, which specifies support activities for long-term economic/social development through self-help efforts as the most effective approach to support. Based on these facts, the Japanese reactions, viewed against the wide difference in philosophies between the rest of the world and Japan, appeared as either blind following or emotional objection to the Western countries. The Ohno article

concluded that the following actions are important: making clear Japan's vision, positive involvement in international organizations; support of international organizations by Japan; and utilization of international organizations. The article confirmed that following items are necessary: establishment of a network among research organizations and policy operative organizations, not only the importance of development of manpower in the field of international cooperation, which is repeatedly recommended; activation of the intellectual environment in the field of development assistance research; and upgrading the political impact of assistance research.

If these ideas by Ohno are affirmed for the most part, the problems might be defined as the lack of Japan's internationally competitive intelligence power in the field of international development. That is to say, Japan's spirit for exporting (international competitive power) their own knowledge production is very low, since both the academic conferences and the working organizations in Japan have been introducing knowledge from Western countries and have been satisfied doing this.

However, the traditional lack in Japan's international competitive power in terms of knowledge has become a big problem, due to the following conditions: Japan’s rapidly having become the largest aid donor country from the end of the 1980s; the budget cuts in ODA during the protracted economic downturn; and the change in the flow of development aid both domestically and internationally in the 21st century, such as the current attention of international society to poverty being the breeding ground for terrorism.

What should we do to improve Japan's competitive power in the field of international development? As Ohno has already proposed, the following items are necessary: establishment of a network between research organizations and political working organizations; activating the knowledge background in the field of development aid research; and upgrading the political impact of assistance research. Although there are many similar arguments, in order to evaluate the adequacy or the feasibility of the ideas, it is necessary to analyze in detail the factors underlying the problems.

4.2. Disincentives for Knowledge Creating

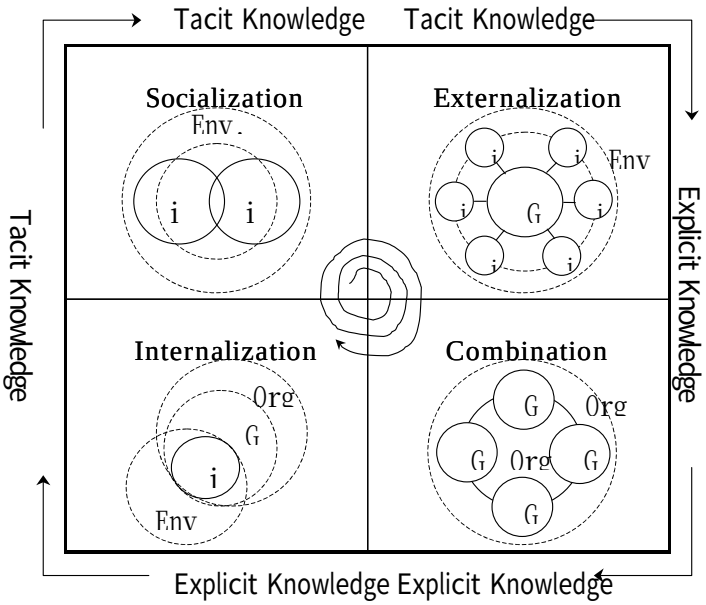
Nonaka and Kon-no (2003), who debated the methodology for knowledge creation, discussed the topic in their article as follows:

> In business enterprises in Japan, the organizations/individuals subliminally have constructive knowledge/capacity in terms of the individual's higher average capacity and attaching importance to field experiences. Nevertheless, it is said that the knowledge/capacity is not as systematized as the thought/concept. This subliminal capacity of Japanese business enterprises seems to be included in the word "(power of) manufacturing". However, now is the time that Japan should

recognize its subliminal capacity in the level of knowledge methodology and should surpass itself. (2003, p. 16)

Nonaka and Konno's arguments against Japanese business enterprises is assumed to be applicable, in most parts, to Japanese support execution organizations, and the debate has been extended based on Nonaka's methodology. The reasons why knowledge creation has not been executed well in the field of Japan's development aid are presumably that the tacit knowledge of the people on site does not get externalized very well as explicit knowledge. The process of externalization from tacit knowledge to explicit knowledge is the transformation to a different type of knowledge. The focal point is the process which requires a large amount of knowledge energy to establish the concept (which provides a new point of view, standpoint, or form of thought) from the on-site based ideas. (See Figure 4.1.)

Figure 4.1. SECI Model



Note Env: Environment, G: Group, I:Individual, Org: Organization

Source Nonaka and Kon-no（2003）

Of course, there must be other causes for the problems besides the process of externalization. In order to produce internationally competitive knowledge, the transition process from the concept to the model (theory) is also important. The study of the integration of internationally competitive explicit knowledge must be carried out. Study of the process of combination is also necessary in order to establish a network

system for such internationally competitive explicit knowledge.

Furthermore, the creation of ideal knowledge from the individual perspective for international development aid must be verified. For example, examining the formulation of explicit knowledge through action and practice; studying the process of internalization which produces new tacit knowledge; and researching the process of socialization where the tacit knowledge is shared and created through person to person contact.

An even more important matter is the ideal “Ba” (a room, seat, place, site, situation, etc.) in the individual process.For example, following "Ba" is important: for externalization, group activity as the circle of personal exchange; for combination, organization activity to assume leadership of the group; for internalization, the site of individual activity; for socialization, collaboration person to person.

We can summarize the above-mentioned points as follows; from the analysis based on the SECI Model, the knowledge creating process in international development research that requires the greatest reform is the externalization process which establishes the concept from the idea; thus, the formation of a dialogue-friendly Ba (or circle) during group assembly is important. Furthermore, in order to extend the internationally competitive debate, the combination process which establishes a model (new theory) from the concept should be reformed.

For this purpose, people should work across the boundaries of organizations. Also the formation of a Systematizing Ba (or a universal Ba), which standardizes the concept, is important. Meanwhile, these issues in the externalization process/combination process in Japan's international development research are caused by Japanese style policy formation which discourages person-to-person exchanges between the government/academy/private sector actors. That is, there is a lack of what has been called a, ‘revolving door’.

Koike (1999), who discussed the comparison of policy formation between Japan and the US suggested that the bureaucratic monopoly style policy formation has caused a problem in Japanese society and pointed out the necessity of establishing the revolving door in Japan. Additionally, Koike argued that the function of the revolving door, which is useful in exchange visits between academics and government, related to practical/active knowledge production, is given weight at the university level in the US. (Koike, 1999, p.107)

Consolidating Koike's observations and Nonaka's arguments for knowledge creating, the following recipe is born. First, a confidential relationship between many individuals who have various kinds of tacit knowledge/ideas is necessary to form an effective Dialoging Ba. For that purpose, personnel exchanges between the political government office/working organizations (think-tanks and consultants) and universities should be expanded exponentially. Also, the quality of these exchanges should be drastically improved. In particular, the exchanges at all levels (i.e. from junior to middle-ranking/senior persons) is required.

At the very least, our institutions should much more earnestly consider and make an effort to promote,

as a catalyst, the following items: personnel exchanges between research organizations such as the Foreign Ministry, JICA & JBIC and universities; expansion and promotion of the dispatch of personnel to international organizations from universities/private enterprises.

Although this recipe has been partially followed already, the most important action now is to create a large movement to convert and shift from quantity to quality. When current world trends in development aid are considered, creating such a movement is necessary within the next several years. To this end, an earnest dialog between people from universities and operations (policy government/operative organization) is necessary.

4.3. Requests from Academia to the Working Organizations

In this section, I would like to consider the current situation of the combination/externalization process from my point of view. The author has been engaged in university research and education regarding international cooperation, especially concerning the environment in developing countries. At the same time, I have been in charge of the course regarding on-the-job training as course leader for the JICA group training course (sustained development) for 5 years. I have been involved in the evaluation of assistance aid for JBIC's reforestation project on Alabari Mountain in 2000 and JICA's environmental center approach (to date from 2001).

Especially in the evaluation of assistance aid, I have pointed out the following items: the necessity for an accumulative evaluation study; the necessity of an evaluation study which is able to provide feedback to the site; a combination of the latest academic study achievements and the evaluation study; the necessity of a comprehensive approach in the evaluation study. Furthermore, for this purpose, the author has stated that a long-term evaluation based on study with the researcher's "persistent" attention is necessary. In relation of this article, the author has argued for the necessity of an evaluation study as the key to new knowledge creating.

From the viewpoint of the author, the concept and model establishment have been a priority in practical aid evaluation. The concept, in this case, means the general ideas which bring new forms of thinking. New concepts play the role of a searchlight and define the scope of the subject matter and the problem. They also clarify the assemble of the subject matter and the attributes (parameters) (Nonaka &Kon-no 2003, p. 148-151).

As has been repeatedly mentioned, the concept making process is the externalization process and the establishment of the dialoging Ba is important for it. The model clarifies the cause-and-effect between the underlying factors which compose the concept, and the model should be theorized and constructed. (Nonaka/Kon-no, 2003, page 180)

Two example cases of the concept and model construction are introduced below. One of them is an analysis model of commons (sustainable resource control system) which was developed in the evaluation

of JBIC's Alabari project. The other one is a new concept which consists of Social Capacity for Environmental Management, which was developed during the environmental evaluation and the SEMS (Social Environmental Management System) project. Additionally, there is the SEMS development stage model which is based on the above-mentioned theory.

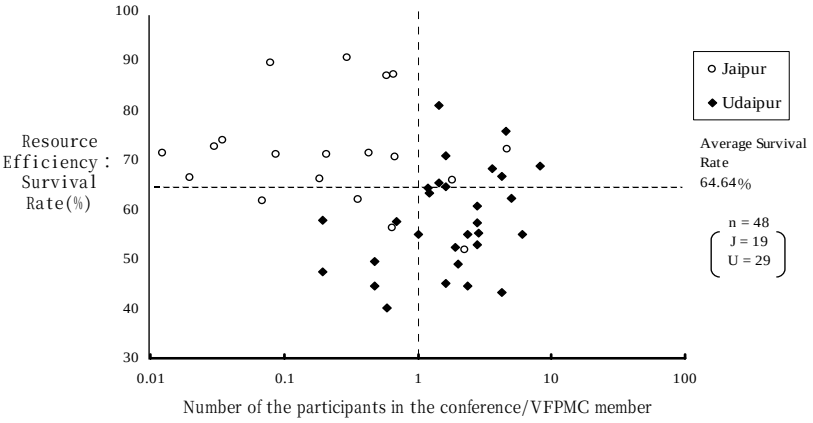
(1) Analysis model of Commons

The Alabari Mountain Tree Plantation Project (Rajasthan state, India) attempted to control the progress of forest devastation which was caused by the increase in population and farm animals. The tree plantation project was planned using the community participation approach (foundation of the Village Forest Protection and Management Committee, VFPMC), and a yen loan was provided. The evaluation of the project focused on how to concretely analyze the maintenance of the project. The task was how to formulate of the analysis results by creating a new, so-called, sustainable resource management mechanism (i.e. Making the Commons).

Because the time of the field investigation was 7 years after the project start and a half year after the termination of the project, it was difficult to estimate the degree of ecological stability/social establishment from a superficial investigation of the current situation of the planted forest. Although there was an assumption that the progress of the project should be evaluated 10 years after the termination of the project, the author believed that it should be verified as to whether or not the mechanism for maintenance of the project was created, even though the project was in operation. During those trial and error periods, the Commons analysis frame (see Figure 4.2) was developed.

The degree of participation by the farmers was plotted on the abscissa axis. It shows maintenance of the resource management organization as its substitute exponent. The survival rate of the planted trees was plotted on the longitudinal axis. It shows the preservation of resources as its substitute exponent.

Figure 4.2 Relationship between the survival rate of the planted trees and VFPMC's activity at Alabari Mountain tree plantation



Source Matsuoka and Sato (2001)

By application of the framework, four types of planted areas are configurable. In the case of Alabari Mountain, two contrasting types are brilliantly revealed: "Udaipur" (south area) which has lower resource preservation and higher organization maintenance, and "Jaipur" (north area) which has higher resource preservation and lower organization maintenance. It is believed that there are project factors and socio-economic factors behind these differences. The importance of properly establishing the scale and the rate (planted area per one person) of each of the factors of VFPMC and the planted site, which can be manipulated in the short term, were determined.

Regarding the reaction to the Commons Analysis Model, which was proposed by the author, the academic circle is interested in it and some people have suggested promotion of it. The local on-site side, however, adhered to the concept of whether or not it is applicable to the traditional analysis model which is already authorized in the academic community. That is to say that they believe that the traditional model (which is an out-dated model) with an established reputation in the academic community is dependable, but that the newly established analysis model is not dependable. It is true that the new model is not always accurate. It must be seen as a mixture of strengths and limitations. Therefore, peer review and feedback from the evaluation research is important. The author feels that the lack of acceptance from the working side of the new model seems not to be based on healthy skepticism, but

intellectual conservatism.

When we treat the problems which are brought up from the aid site as practical academic research, most of the problems cannot be sufficiently interpreted using the existing concept/model. Thus we should establish a new model which can analyze the actual situation and should verify its suitability. Then a potential model should be developed and the impossible model should be abolished. The intellectual idea that conservatism = authoritarianism is strongly observed not only in the academic community, but also in the working group in Japan. It is clear that intellectual conservatism inhibits the externalization and combination of new knowledge.

(2) Development Stage Model of SEMS

The author has concentrated on the evaluation study for programs of the Environmental Center for the past one and a half years. The Environmental Center Project has performed ERTC, starting in Thailand, which is aimed at monitoring the environment and related environmental studies/on-the-job training. To date, the Environmental Center has performed in six countries including China, Indonesia, Mexico, Chile and Egypt. It is the business model for environmental cooperation which is the representative of Japan. Japan offers such aid as the Environmental Center Approach, and also defines it as the support for increasing the capacity of the developing countries to handle the environmental issue by themselves (Foreign Ministry, “ODA White Book” 1997). The approach has supported the self-help effort in the environmental field of the developing countries, and quite simply it is one ideal policy that appears in concrete form in Japan’s philosophy of aid.

What were we (including the author) required to evaluate? It was not the achievement ratio, efficiency or impact analysis of the project. First of all, through Japan’s support to the Environmental Centers in the developing countries, it was how much the developing country’s capacity for handling the environmental issue was increased? It was also whether or not Japan’s support has contributed practically to solve the environmental issue.

We are requested to prepare the answers for the Japanese taxpayer who inquires directly about the effectiveness of aid and also the answers for the questions of the people in the developing countries.

First, it is necessary to establish a concept which can make the program clear. Regarding this, the author proposed the importance of the concept of “SEMS, Social Environmental Management System”. Through the author’s investigation of the situation regarding environmental management in developing countries and survey of the trend toward the decentralization, SEMS as the social system, which consists of not only the central government, but also the social actors such as non-government enterprises, citizen organizations and the local organizations, became important. The concept of Social Capacity Environmental Management is established as the operating capacity of the system.

Social Capacity Environmental Management is the social capacity in environmental management, and

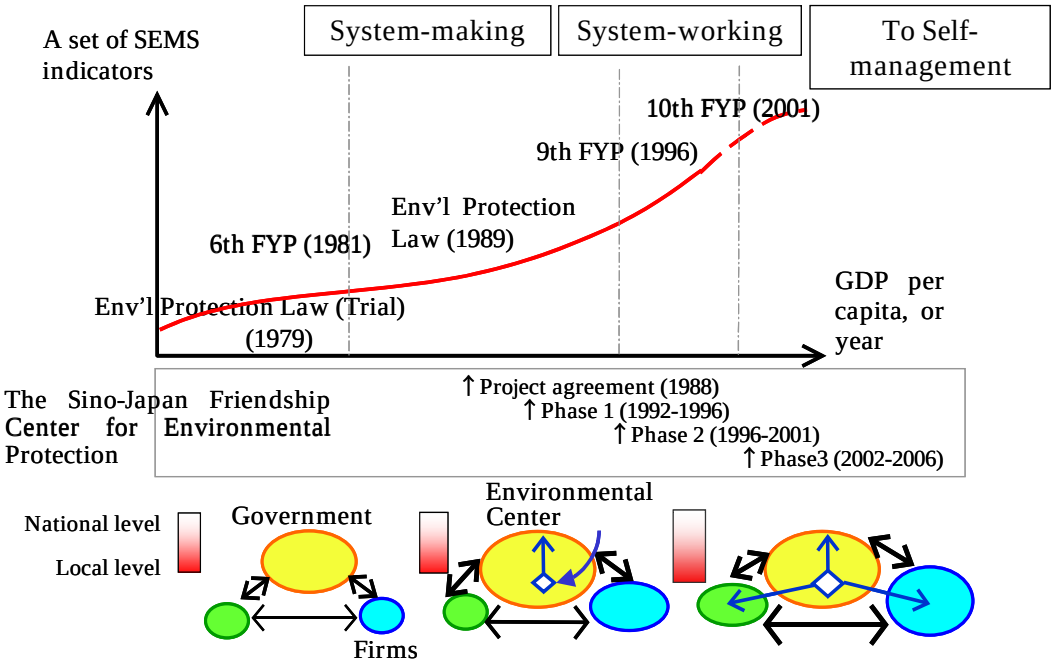
it is re-defined as follows: It is a social system combining UNDP's Capacity Develop theory, its application to OECD's Capacity Development in Environmental theory, and the main social actors.

Subsequently, the model establishment is performed. SEMS development stages are shown in the model as the system formative stage, full-scale stage, and self supporting stage. (Case examples are shown in Figure 4.3)

Furthermore, based on the SEMS stage model, the modeling of an adequate entry point to the project and the exit point for large scale environmental aid, such as the Environmental Center Project, are attempted. Then, the Entry/Exit Model for the Environmental Center Project is established. (See Figure 4.4)

For the establishment of the concept and model, dialog with various parties is greatly beneficial. The various parties are not only the members of the study group, but also the task force from the JICA side and the observers from the Foreign Ministry, Ministry of Environment, and JBIC. Furthermore, the concept model, which the authors developed, is now examined in the feedback process and it is being positively accepted by both the academic community and the operations side, not only in Japan, but also in China, Thailand, and Indonesia. This approach, which attaches importance to the Dialog Ba, i.e., holding any international symposium during the evaluation study, must be effective to achieve positive results, in contrast to the former case of Alabari.

Figure 4.3 The development process of SEMS in China



Source Matsuoka (2002)

Figure 4.4 Entry/exit points of Environmental Center

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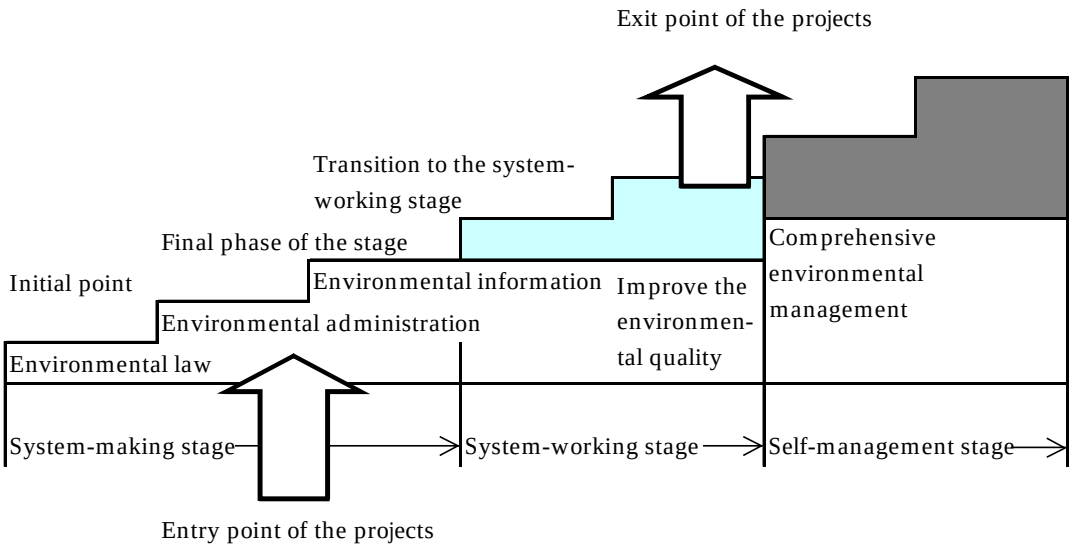


Source: The author

4.4. Conclusion

Regarding the Social Capacity for Environmental Management theory, the author is continuing to work to develop the model and to promote it as an internationally competitive knowledge product. For this purpose, the author thinks that it is important to verify the model at the local site and to trace the knowledge creation cycle, which consists of internalization, socialization, externalization and combination.

When the working side is observed from these points of view, not only the single-occasion evaluation seminar, but also the following actions are necessary: the model is introduced, applied, generalized in the operative organization; the importance of settlement of systematic acceptance for further systematization is established.

The support execution organization should more think about the mechanism for introducing the results of the evaluation study feedback to the organization. The evaluation department of the aid organization should be the vanguard which acts as the bridge between the academic community and the working side. Frankly speaking regarding this point, I feel some frustration over the attitude of the present support executing organizations. They should correspond more systematically and strategically.

Of course, it is important that the academic side engages in voluntary studies through independent

research. At the university where I belong, we established the HICEC (Hiroshima International Center for Environmental Cooperation) in April 2003, as a temporary center for 5 years. It is accelerating the improvement/development of the model, while it reinforces the network between universities, research organizations, government organizations, support execution organization, local governments, industrial circles and civic organizations, etc. at home and abroad.

Important activities are the establishment of a better confidential relationship between the universities and the working organizations, and the maintaining and developing of a Dialog Ba that has a healthy sense of tension.During the accumulation of these achievements, personnel exchanges should be activated.

Remark: This is a partially added/altered version of the underlying report “The Knowledge Creation by Building Network between Academism and Working Field (*Proceedings of the Fourth Spring Convention of Japan Society for International Development*. pp.255-261.)” at the Fourth Spring Convention of Japan Society for International Development/Session for Common Subject for Discussion (June 14, 2003 at Tokyo).

5. Theorization of Development of Social Capacity for Environmental Management

To academically contribute to social capacity development for environmental management in developing countries, the JASID evaluation team and other related institutes have collaboratively worked in developing the theory and model of this concept (Matsuoka et al. 2000a and 2000b, Matsuoka 2000, 2002, 2003a, 2003b, JASID Evaluation Team 2003, Matsuoka and Kuchiki 2003). In the evaluation report for the environmental center approach completed in March 2003, the team analyzed three development stages of social environmental management systems in developing countries and clarified the appropriate entry and exit points of the environmental cooperation.

The report, however, did not necessarily satisfy the readers because of giving only rough ideas of the theory and model of development process of social capacity for environmental management. Evaluation indicators were also the important interest yet to be done. JASID has conducted further studies related above issues through the evaluation feedback project 2003. Below shows the latest discussion on the model of social capacity development for environmental management.

This chapter gives you the concept of social capacity for environmental management with detail observation of development model and institutional change. The methodological validity of the proposed analysis approach is tested with the case of pollution control experiences in Ube City, Yamaguchi Prefecture in 1950s to 1970s.

5.1. Concept of Social Capacity for Environmental Management (SCEM)

Here, a new concept called Social Capacity for Environmental Management (SCEM) is defined from two viewpoints: actor approach and factor approach. Subsequently, the historical origin of SCEM is traced through reference to the history of capacity building discussion in development assistance. Lastly, the necessity, usability and advantages of the SCEM concept are brought out, by explicating the difference between the SCEM concept and the confusingly similar concepts of environmental governance and social capital.

(1) Definition of SCEM

Among the preceding research which attempted to understand environmental management capacity in concrete terms, targeting air quality management capabilities in cities, there was a study jointly conducted by UNEP and WHO[(1)] (UNEP/WHO 1996, hereinafter called the GEMS report[(2)]).

It was the GEMS report that inspired us to address the conceptualization and modeling of SCEM. This section introduces and critically analyzes the GEMS report and states the definition of the new concept, SCEM.

First of all, the GEMS report assumed that the capacity for air quality management is composed of the following four elements:

(1) capacity to measure air quality
(2) capacity to assess and make available data
(3) capacity to estimate emissions and to trace their sources
(4) capacity to devise and implement policies.

It evaluated each capacity element with indexes such as the number of monitoring stations and measurement frequency of certain pollutants, making an attempt to quantitatively evaluate the capacity for air quality management (UNEP/WHO 1996, pp.27-33).

The theory of Capacity Development in Environment (CDE), proposed by several groups including OECD[(3)] since the 1990s, could only discuss the capacity for managing the environment generally as a principle. On the other hand, the GEMS report divided it into four main elements and went further to break them into middle-and-small items. This enabled it to set proxy indexes to attempt a numerical evaluation of capacity for environmental management.

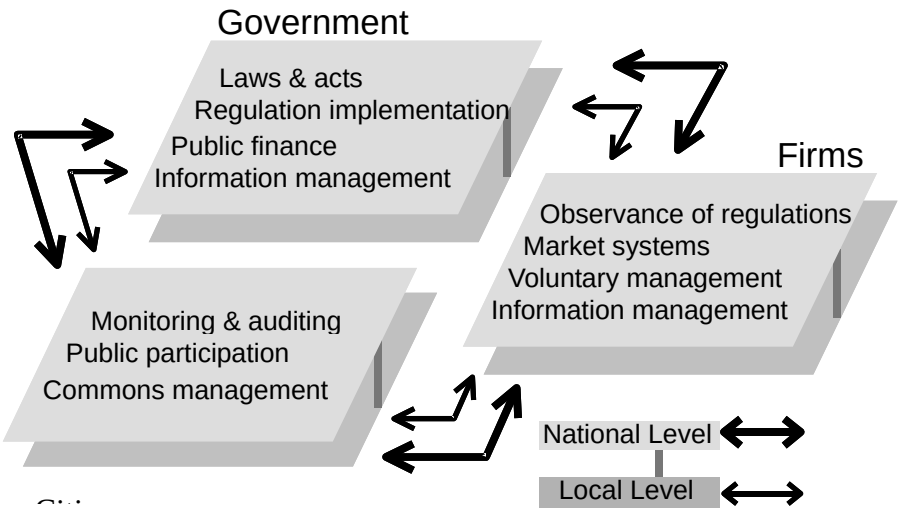
However, the GEMS report's targets were limited to the capacity for air quality management by governments and administrations[(4)]. The 'capacity of firms' which actually reduces pollution and 'capacity of citizens' which puts social pressure on firms and the government were excluded from its targets. The social capacity to cope with environmental issues must not be discussed only in terms of capacity of government but of capacity of firms and capacity of citizens.

SCEM is the social capacity to cope with environmental issues. Our study group defines government, (private, profit) firms and (non-profit) citizens as the three social actors. The environmental management capacity stipulated by each set of capacity standards and the correlation of the three actors is SCEM (Matsuoka & Kuchiki 2003). These capacities are developed from both sides: one from the central government level, which institutes nationwide environmental policies and environmental laws, and the other from the local level, which is made up of local governments, firms and citizens that actually implement them. Hence, the relation between the central entity and the local entities is an important factor in developing SCEM (See Figure 5.1). We call these definitions the "actor approach to social capacity".

Suehiro, who discussed the social capacity for industrialization, included the 'capacity of firms' and the 'capacity of government' as components of the "catch-up type industrialization[(5)]". He concluded that three elements are essential to develop social capacity: planning and implementation of an efficient policy, skill acquisition and information sharing, and human resources that enable them to take place (Suehiro 2000, pp. 60-79). Based on Suehiro's research, we set three factors as

the basic elements of social capacity.

Figure5.1　Social Environmental Management System (SEMS)



Source: Matsuoka, 2002

The first factor concerns policies and measures. With this factor, we see what kind of environmental policies and measures each actor takes. The second factor includes human and organizational resources that stipulate the implementation of those policies and measures. The last one is knowledge, information and technology which realize the other two factors. Contrasted with the above-mentioned actor approach, we named the approach defined from the factors of social capacity as the “factor approach”.

The combined use of the actor and factor approaches makes it possible for us to understand SCEM in a more concrete way.

(2) Conceptual Genealogy of SCEM

In the development assistance field, the idea of emphasizing intangible aspects such as organization-building and institutional design is called the capacity development approach. The concept of SCEM could be positioned as an extension to the capacity development approach in the environment field [(6)]. The discussion of capacity development in development assistance studies started in the 1950s as an approach to strengthen a single system or organization in the public sector. In the 1960s, the necessity of an institutional accumulation approach, which not only looks into a single system, but comprehensively views the public sector, was recognized. Beginning in the 1970s, the method of capacity development was discussed, with a viewpoint expanded to include local

governments and the private sector.

From the 1990s and later, those discussions came to emphasize the relation between sectors (social actors). This developed into a theory of capacity development aimed at human development based on the capability theory[7] of Amartya Kumar Sen. While the capacity development theory of UNDP embraces human development[8] as a strategic goal, SCEM theory targets the development of a social system (a bundle of institutions[9]) which realizes sustainable development, and a social capacity which controls such a system, as well as human development.

Among numerous discussions of sustainable development (another branch of the genealogical tree of social capacity theory), the following two are particularly important: the World Commission on Environment and Development (WCED) report in 1987, which advocates sustainable development[10]T, and the 1992 discussion by OECD, which covered Capacity Development in Environment (CDE) [11], following the Rio Summit. CDE represents the ability of individuals, groups, organizations and institutions in a given context to address environmental issues as part of a range of efforts to achieve sustainable development. The term Capacity Development in Environment (CDE) describes the process by which capacity in the environment and appropriate institutional structure are enhanced (OECD 1995, p.6). CDE theory discussed the entity of capacity, elements and ways to resolve problems, but could not pull out a satisfying achievement as a whole. However, the discussion of CDE is valuable in bringing up the concept of social capacity for realizing sustainable development. SCEM can be seen as a theory that develops the CDE theory along a new dimension.

As mentioned, SCEM theory, which we advocate, and capacity development, which UNDP supports, are deeply related, though large differences exist between the two. UNDP (1994, 1998) understands capacity on three levels – individuals, organizations and society (institutions) – and considers that capacity is developed in the course of correlation of these three. This approach by UNDP lacks the middle system that connects organizations and the society, which might make it difficult to understand the dynamism of micro (individuals, organizations) and macro (society) levels and the mechanism of adjustment.

To conceptualize and theorize the development process of social capacity, it is necessary to clarify: the capacities and actions of various actors that make up a society, the factors that define them, and the social system (a bundle of institutions) which controls capabilities and actions. From this point of view, the theorization and modeling of the development of social capacity would be possible only when social capacity is defined from both the actor approach and the factor approach, so that the middle system that connects the capacity of social actors and ‘a bundle of institutions’ becomes clear.

(3) SCEM, Environmental Governance and Social Capital

SCEM is composed of the three social actors of government, firms and citizens. It also describes the relations among them. The processes of social capacity development and institutional change are closely related to each other, as is explained in the next section.

Among the discussions of environmental management that use the term ‘social actor’ is environmental governance theory in the field of politics. Others include social capital theory, mainly discussed in sociology, and institution theory (new institutional economics) in economics, which study the relations among individual actors and institutions. North’s theory, a representative theory of new institutional economics, will be examined in the next section. Furthermore, we will discuss the differences among environmental governance, social capital and our theory, SCEM, to demonstrate the necessity, usability and advantages of the concept of SCEM.

Rosenau and Czempiel defined the term ‘governance’ as a political system that functions without centralized authority when coping with particular issues. The definition includes social systems such as general regulations and codes of practice, as well as regimes which stipulate multilateral cooperative relationships for certain issues (Rosenau and Czempiel 1992). There are various ideas of governance, though they share a common perception that the essential requirement for good governance is to incorporate various actors into the democratic decision-making process of policy setting, by focusing on the methods and methodologies of the policy[(12)].

Governance theory that discusses how the social actors should approach the policy-making process ultimately could be thought of as discussing a broad meaning of ‘institutions’, a term used in the new institutional economics and our research group. North defines institutions as “rules of the game in a society or, more formally, the humanly devised constraints that shape human interaction”[(13)] (North 1990, p.3). The concept of governance is the institutions themselves, which provide actions of individuals, organizations and society.

The objective of this paper is to theorize the dynamism of social capacity development and institutional change. If it is possible to define environmental governance as a bundle of institutions that relate to the environment, it could be said that environmental governance itself is made up of institutions, and SCEM is its content, as they are complementary to each other.

It is highly important to take institutions into consideration when thinking about social capacity[(14)]. Recently, social capital[(15)] (Coleman 1988, Putnam 1993, Collier 1998, OECD 2001) is attracting attention as a theory that explains the functionality of institutions (as formal rules). Putnam considers social capital as an accumulation of trust, norms and human networks, which were built historically, and it determines the performance of institutions. However, if social capital could be recognized as social norms or customs, it is possible to consider it as institutions (as unspoken informal rules). If so, the relations between SCEM and social capital could also be inter-complementary.

All told, the discussions of governance and social capacity could be thought of as all focusing on institutions (a bundle of institutions, whether formal or informal). Thus, it is important to understand and theorize the relation between social capacity as the content of institutions and institutional change.

In Section 5.2, we will theorize the relation between SCEM and institutional change, and demonstrate the model of social capacity building.

5.2. SCEM-Building and Institutional Change: Model of Social Capacity Building

(1) Social Capacity Building and Institutional Change

North, a representative scholar of new institutional economics described institutional change as follows: “[I]nstitutional change typically consists of marginal adjustments to the complex of rules, norms and enforcement that constitute the institutional framework. The overall stability of an institutional framework enables complex exchange possible across time and space” (North 1990, p.83).

Additionally, North features the process of institutional change in the following way. Institutions gradually change as a result of factors such as changes in relative price. Formal institutions (official, formalized rules such as statute law) may bring about changes in informal institutions (unspoken rules such as social norms and customs). However, changes in formal institutions do not necessarily trigger changes in informal institutions at the same time. Instead, informal institutions may ruin formal institutions. Here, formal and informal institutions are distinguished relatively, and there is no absolute boundary between them (North 1990).

For an effective institutional change, it is necessary for both formal and informal institutions to change, because it is the informal institutions that influence people’s behavior pattern (changes in awareness and attitudes). Suppose a new bill was enacted, but has not been enforced effectively – in other words, informal institutions have not changed, and therefore people’s behavior will not change. If that is the case, the formal institution (the new law) will be a dead letter. As Aoki says, “[L]aw and regulations per se are not institutions if they are not necessarily observed” [(16)] (Aoki 2001, p.13).

Then what gives rise to institutional change? North explains that it comes from changes in relative price triggered by technological innovation, and people’s change in preferences caused by the expansion of knowledge and information. North considers change in people’s preferences as a factor affecting institutional change. Another possibly important factor is the external shock, as argued by Aoki (1996, 2001). Institutions are resistant to internal factors but are vulnerable to external factors.

Nevertheless, as mentioned above, the normal process of institutional change is a slow and progressive flow. The primary feature of institutions lies in their durability and tenacity. In other

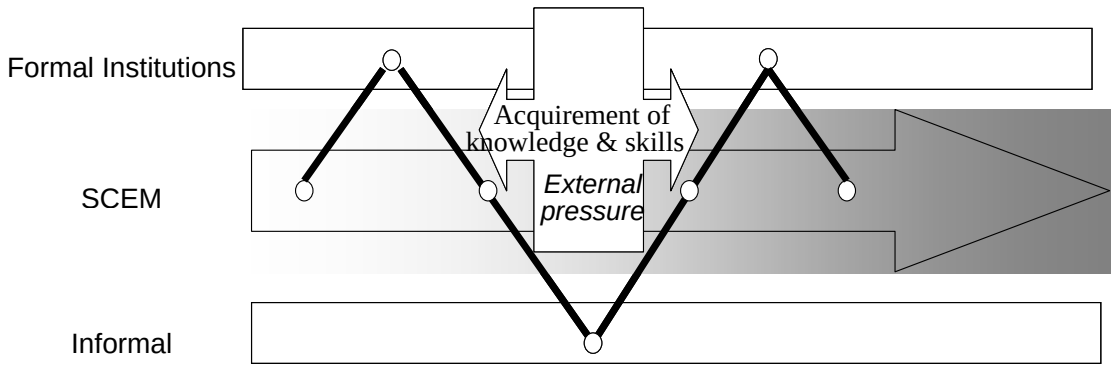
words, institutions are unalterable and hard to change, because institutions exist as institutional framework (North 1990) or a bundle of institutions (Aoki 2001), and their existence is a mixture of various formal or informal institutions that exhibit complementarity and inter-dependency. In addition, if we look at institutions as being powerfully ruled by history, institutions show path dependency, and thus have difficulty in simply shifting to one path from another. New institutional economists have often been criticized as 'historical determinists' (who argue that past defines present), as they emphasize the path dependency of institutions.

Social capacity building is closely related to institutional change, and in a way, they define each other. But while institutional discussion often gets trapped into historical determinism, social capacity discussion intends to break away from it by theorizing the dynamic process of social capacity building and institutional change. Its dynamism can be theorized as follows.

First, technological innovation or creation of new knowledge by an entrepreneur causes a fluctuation in people's sense of value. Together with a major change in international conditions, it may improve social capacity, and trigger changes in formal institutions. Changes in the formal institutions enable further improvement of social capacity and trigger changes in informal institutions, such as social norms and customs. On top of this, changes in informal institutions enable greater improvement in social capacity.

This process of institutional change and SCEM development is described in Figure 5.2. The arrows at the top and bottom describe formal and informal institutions, which indicate vectors of institutional change. The middle one represents SCEM, assuming that the capacity gets higher as it shifts to the right.

Figure 5.2 SCEM and Institutional Change: Capacity Building Model



Drawn by Author

(2) SEMS 3-stage Development Model

Regarding the development stages of SEMS, our study group previously set out a development model composed of three stages, focusing on industrial pollution management (Matsuoka & Kuchiki 2003). The three stages are the (1) System-making stage, (2) System-working stage, and (3) Self-management stage [(17)]. The model is based on the discussion of the preceding studies by Imura and Katsuhara (1995), Harashima and Morita (1995) and Lee (1999).

The system-making stage is a phase in which the Social Environmental Management System (SEMS) – a bundle of institutions for environmental management – is built. In this period, building of "capacity of government (administration)" is important. Basically, there are three benchmarks in the process. The first step is the development of environmental laws such as the Basic Environment Law and the Environmental Regulation Law in each sector: Development of laws. Secondly, the development of an environmental administration system: Restructuring the Ministry of the Environment. Lastly, the development of an environmental information system: Revising pollution monitoring networks; collecting, utilizing and disclosing data. Regarding environmental information, not only is the number of monitoring stations important, but also revising information networks, fostering environmental awareness among citizens and establishing social pressure towards polluters (firms) become specifically necessary.

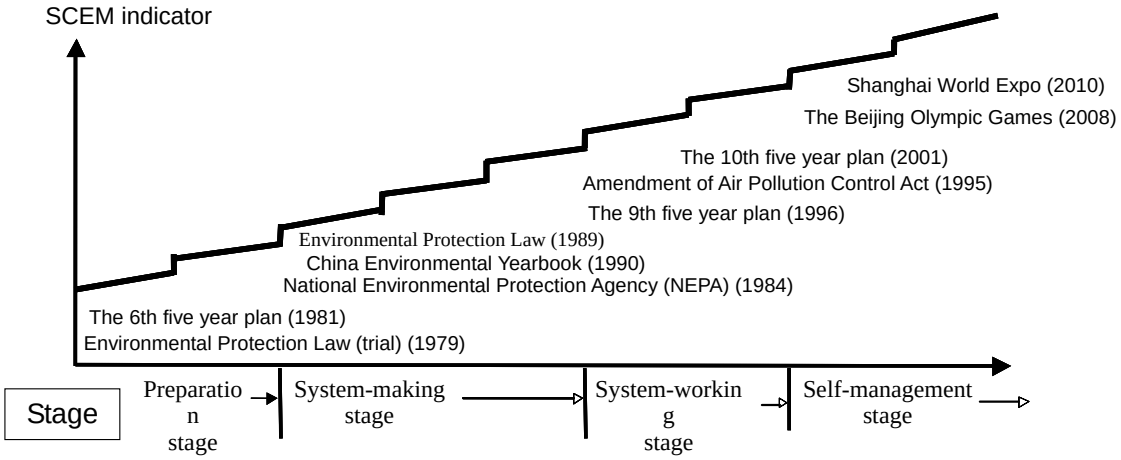
The system-working stage is a phase to reduce pollution in earnest. It is the period when the increased trend in pollution turns into a decreased trend, and the turning point can be observed on the Environmental Kuznets Curve (EKC) [(18)]. In this phase, it is most important to develop and spread technology and knowledge, and to accumulate human and organizational resources that enable firms to take measures for pollution control. Of course the precise environmental policy and its enforcement by the government, the awareness and eyes of the citizens toward environmental problems, and their support of the government are also essential.

The self-management stage is a phase when the relationships among the social actors – government, firms and citizens – become stronger. In this phase, social capacity develops in an autonomous manner, and comprehensive environmental management is practiced. It is also when the private sector (firms and citizens) takes the initiative in environmental management, which makes it possible to flexibly address the newly emerging environmental problems. As for the methods of implementing environmental policy, this is the period when the emphasis shifts to market methods or voluntary approaches from the command-and-control approach. Within the developing countries, this is the time when they graduate from vertical cooperative relations with the developed countries, based mainly on traditional ODA assistance, and establish horizontal cooperative relations such as civil exchange.

(3) Model of SCEM Building and Model of Development Stages

In an attempt to clarify the relations between the 3-stage development model of SCEM and the social capacity development model, we have represented two examples of a model of SCEM development, sulfur oxide (SOx) emission control in China and in Indonesia, in Figures 5.3 and 5.4[(19)], respectively.

Figure 5.3 Development Process of SCEM in China



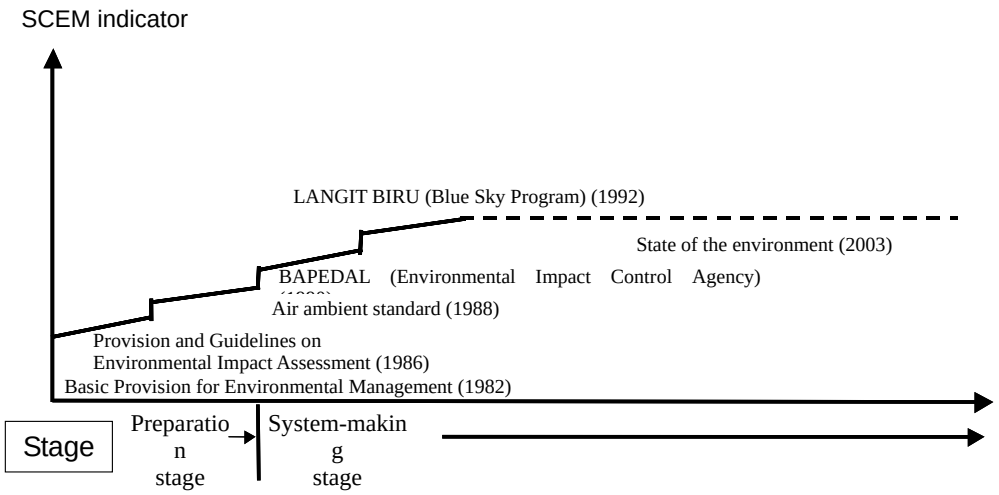
Source: Evaluation Team on Environmental Cooperation, JASID, 2003

The system-making stage in China is assumed to have started from the enforcement of the Environmental Protection Law (Trial) in 1979. It is considered to have shifted to the system-working stage in the mid-1990s based on the following points: the 1995 amendment of the Air Pollution Control Act, emphasis on the eco-policy in the ninth five-year plan in 1996, and observation of the peak of the SOx emission of the industrial sectors in 1996. In the coming years, China is expected to actively promote environmental management with the government, firms and citizens working together towards the Beijing Olympic games in 2008, and the World Exposition in Shanghai in 2010.

In Indonesia, the legal system and the administrative machinery regarding SEMS began with the formulation of the Basic Provision for Environmental Management Act in 1982 (the new Environmental Management Act was enacted in 1997) and were developed in the early 1990s. Concurrently, an air pollution control program was carried on; however, neither has been successful.

Considering that its nationwide monitoring network system remains uncompleted, and its State of the Environment has just started to be issued (as of 2003), Indonesia could be assessed as still being in the final phase of its system-making stage.

Figure 5.4 Stage Model of SCEM Development in Indonesia



Source: Evaluation Team on Environmental Cooperation, JASID, 2003, Modified by Author

China ended its system-making stage and shifted to the system-working stage in about 15 years. As for Indonesia, we need to consider its financial crisis in 1997 and the following collapse of the Suharuto regime. However, we cannot ignore the fact that it has been unable to shift to the system-working stage, apparently staying at the same system-making stage for more than 20 years.

What does the difference between the developmental stages of these two countries result from? Both countries addressed common issues, such as forming an environmental administration, environmental laws and building environmental information system, in the system-making stage. But while China smoothly entered its system-working stage, and has been proceeding towards the self-management stage, Indonesia is struggling at its system-making stage to make a step forward to the system-working stage. These facts indicate that SEMS cannot function only by creating formal institutions.

As the shift from system-making stage to system-working stage occurs, there must be some kind of informal institutional change, such as a change in the actors' behavior. Conceivably in the case of Indonesia, it is possible that the country lacks sufficient social capacity to make informal institutional change.

In the next section, the efficacy of the theoretical model of the SCEM development and institutional change is demonstrated by applying it to the case of the air pollution (dust and SOx) control in Ube City, Japan.

5.3. The Development of Social Capacity for Environmental Management and Pollution-control Measures in Ube City

Using the development model of Social Capacity for Environmental Management, we analyze the policies for overcoming air pollution in Ube City. We particularly looked at the dust control measures started in1949 and sulfur oxide (SOx) control measures started in 1960. We also studied the relationship between the development of Social Capacity for Environmental Management and institutional changes historically. Local governments played a pioneer role in pollution control policy in Japan and we chose Ube City as a typical example. Moreover, it is important to analyze Ube City because the city experienced a significant institutional change from dust to SOx control.

(1) Social and economic background of Ube City

Ube City, located in southwest Yamaguchi Prefecture, faces the Sea of Suoh and is a coal and industry town where Ube Industries is a major company. The village, population 40,000, acquired city status in 1921 [(20)]. The most significant factor in the history of Ube is that the profits obtained from coal were reinvested in social welfare and public work projects, and utilized to maintain the regional social infrastructure[(21)]. The Ube Community (*Ube Kyoudou Gikai*), started in 1886, played the central role in this activity. The community consisted of only village people and the independent spirit of Ube was cultivated in such a history. This spirit made people from the outside feel that Ube was being exclusive at times and it was occasionally called the Ube Monroe Doctrine (Ube City 2002, Nose 1969).

(2) Dust control measures in Ube City

The coal [Ube Coal] mined in Ube was low-grade (an ash content of 40%-45%, calorific values between 3,000kcal and 3,500kcal) in general and was not usable as fuel as is. After the development and implementation of a method that crushes, micronizes and combusts coal with air by jet, Ube coal was utilized as a fuel (mainly for power generation) (Kadowaki 1992). Because Ube was a town dominated by one company (Ube Industries), with 70% of the citizens having direct relations with affiliated companies, the increase of dust accompanying the industrial growth and coal consumption was originally accepted as an unavoidable event (Nose 1969).

Dust control measures started in October, 1949. The damage caused by falling dust in the rapid postwar recovery period became serious and Yoshikazu Yano, a City Council member, made an anti-fallen-dust motion in the City Council in October, 1949. It was passed by common consent, and the Dust Fall Control Committee (chairman: Yano, City Council member) was set up as a special committee of the City Council (Tanimoto 1960).

The Committee requested that Professor Yoshikatsu Nose at Yamaguchi Medical College (presently the Department of Medicine at Yamaguchi University) investigate the damage and actual conditions of the business districts from January to March of 1950. They measured falling dust at ten points in the city and surveyed the influence on the human body from May of the same year. After the monthly survey was completed, the results of the measurement of the amount of falling dust and the epidemiological survey data were published in the local newspaper and they had a big impact on the citizens of Ube. The average amount of dust that fell, especially in 1950 and 1951, was measured as 55.86 t/km/month, and this was the highest value among 43 cities across the world that had been measured by that time. The newspaper announced, “The dust of Ube is the worst in the world,” and a subsequent improvement in the citizens' awareness about information disclosure and dust measures was seen as a result.

Three measures, (1) installation of dust-entrapping devices at the factories, (2) purchase of sprinkler trucks to dustproof the streets, and (3) landscaping along the road to keep the dust down, were submitted to the City Council in March 1951. An ordinance was enacted in the council in June of that same year and the “Ube City Dust Fall Control Committee” was established. A notable characteristic of this ordinance is that it did not establish restrictive standards or penal regulations regarding air pollution. Moreover, committee members were composed of four classifications of representatives, including corporate representatives (four people), administrative representatives (two people), representatives from the City Council (two people), and academic experts (four people). This committee aimed to solve the problem through a voluntary approach by the local society without damaging the industrial characteristics of Ube City, and the system was called the Ube model (Nose 1996).

Although the Ube City Dust Fall Control Committee requested that each company submit proposed dust prevention measures and a current survey report, there was a significant gap in opinions between the committee and the companies that prioritized industrial profit. There was even an incident in which the dust measuring devices set up at ten places in the city were destroyed by someone. In reaction to the slow response by the companies, the citizens held large-scale anti-dust pep rallies in 1952 and 1954. Such pressure by the citizens forced the corporate activity to change in 1953.

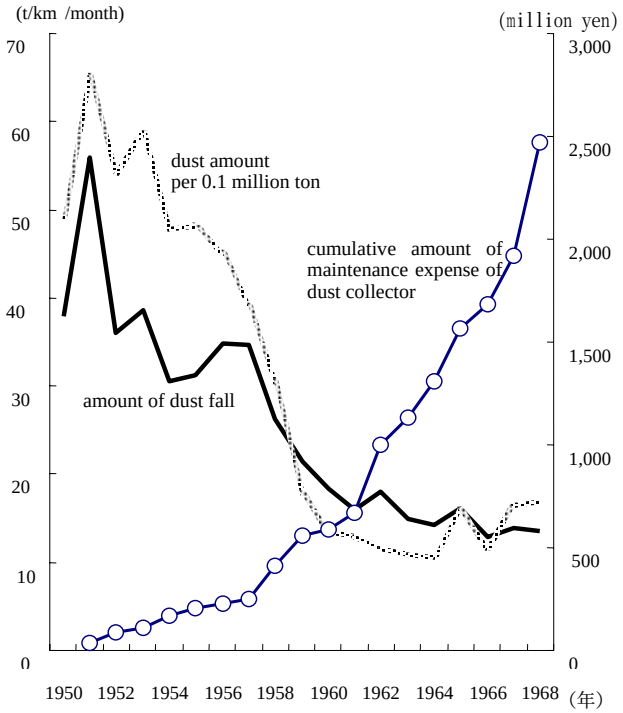
In 1953, Kanichi Nakayasu, Vice President of Ube Industries, visited Pittsburgh City in the United States. The city had changed from a "smoggy town" to a “rich green town.” He realized that dust

control measures were indispensable for the development of the city and industry. After returning from the United States, he proposed strengthening of control measures to the committee and started a positive pollution control policy in the company with the slogan, “Dust is Money”. In 1956, Ube Industries developed Ube pozzoran cement. The coagulation power and water resistance of cement was upgraded by mixing in ash, which was the main ingredient in falling dust. This new cement recorded sales of 1.5 billion yen over ten years, and these sales became the money source for the company’s dust collector. Other main factories in the city also installed new dust collectors. In all, factories in the Ube city area invested 1.13 billion yen in equipment for pollution control measures over 14 years from 1951 to 1964.

As a result, the mayor and main business owners set numerical targets for dust control measures (the efficiency of dust collecting in each factory should reach above 97% and the density of the dust in chimney exhaust gas should reach 1.2g/m by 1960) at a committee meeting in 1957. Moreover, each factory decided to formulate a plan including time limits and expenditures for accomplishment of the goal.

Under such measures, the amount of dust falling in 1961 was lowered to 16.0t/km/month. This meant a substantial success of the measures, through a sharp decrease in ten years to 1/3 or less compared with that in 1951, when the damage by falling dust was the largest. (Refer to Figure 5.5.)

Figure 5.5 Shift in Dust Fall Amount and Maintenance Expense of Dust Collector in Ube City

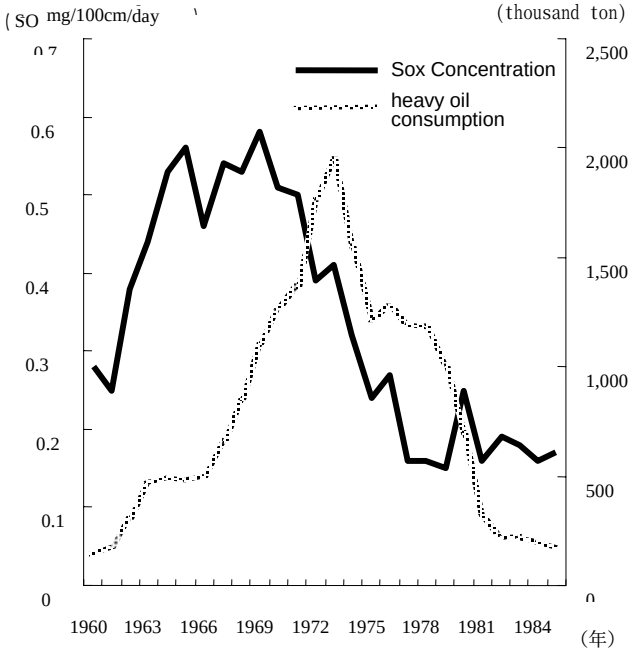


Based on the Data from Ube City, 1971,
Created by Author

(3) SOx measures in Ube City

Figure 5.6 shows the transition of the density of sulfur oxide (SOx) and the amount of crude petroleum use in Ube City. Along with other industrial cities, the amount of crude petroleum use and the resultant exhaust gas of SOx in Ube City increased from 1960 because of fuel conversion from coal to oil. The Ube City Dust Fall Control Committee was reorganized into the Ube City Air Pollution Control Committee in June 1960 because of the necessity for SOx control measures.

Figure 5.6 Shift in SOx Concentration and Heavy Oil Consume in Ube City



Based on the Data from Ube City
Created by Author

City representatives were removed from among the Air Pollution Control Committee members and the committee was composed of three parties, which was different from the Dust Fall Control Committee. However, the committee followed the traditional Ube model system and did not depend on ordinances or punitive regulations. Their discussions were based on scientific research data and its release to the public (Ube City 2002).

SOx monitoring devices were set up (in 17 locations) two months after the Air Pollution Control Committee started, and continuous monitoring began in January 1962.

The factory area of Ube Industries was not included as a monitoring point, at first. However, monitoring devices were set up at two points, on the roof of the Ube Industries headquarters and the roof of the Ube mining office, in 1962. Ube Industries had been pushed by a strong demand from the

city, and SOx emission monitoring in the industrial zone was thus started[22]. The SOx density data of Ube City was widely available to the public through the public relations magazine of the city called *The Pollution in Ube City*. Although a tree planting movement involving all citizens of the city began to blossom at this time, the recorded density of SOx increased every year after installing the monitoring equipment and the pollution control policy did not make much progress.

While the approach to pollution control by Ube City began late, other local governments, such as Yokohama City, Yokkaichi City and Metropolitan Tokyo were advancing their pollution control policies based on pollution control agreements and ordinances. Encouraged by these early local examples, the country enacted the Basic Law for Environmental Pollution Control in 1967, abolished the former Law Concerning Controls on the Emission of Smoke and Soot in 1968, and enacted and began enforcing the Air Pollution Control Law instead.

Influenced by the change of external factors, such as the strengthening of environmental control by the national government, the situation of Ube City changed. Yamaguchi Prefecture established an outline of urgent pollution abatement measures in 1969 based on the Air Pollution Control Law, and the first warning was announced officially in Ube City in that same year. The first air pollution alarm in Yamaguchi prefecture was announced officially in Ube City in 1970. Air pollution warnings and alarms in 1970 occurred 12 times, and Ube City had to take immediate pollution control measures. The industry was ordered to take measures to reduce the number of warnings and alarms and therefore had no other choice but to cooperate with Ube City. In addition, the Ube City Air Pollution Control Committee was reorganized into the Environmental Pollution Control Conference in 1970, and at the conference meetings, active discussions about SOx measures involving civic groups took place.

In 1971, Ube City concluded a pollution control agreement[23] with a total of 17 factories, 11 main factories in the city in April and 6 more factories in October. The participants then worked out full-scale SOx measures and concluded the enforcement details of the pollution control agreement in 1972. The content of the agreement was that the reduction ratio of SOx exhaust amounts was raised from 25% to 30%. After accepting these enforcement details, each factory seriously worked on SOx control and consequently the density of SOx dramatically decreased [24].

(4) Development of social capacity and institutional change in Ube City

The above discussion examined the historical progress of the pollution control policy of Ube City, with a central focus on the dust control measures in the 1950s and SOx control measures in the 1960s and 1970s. In this section, we will apply the development model of Social Capacity for Environmental Management to Ube City. Furthermore, we will analyze SCEM and institutional change in Ube City. In this paper, our analysis will focus on the System-making and System-working

stages.

① System-making stage

The System-making stage of Ube City began with the formation of the Dust Fall Control Committee in the City Council in 1949. Shortly after this, the Ube City Dust Fall Control Committee, composed of representatives from "businesses, government, academics and citizens", was set up in 1951. These are formal institutions of environmental management for air pollution. This Ube model can be called a mechanism of “voluntary problem-solving institutions.” It was a formalization of informal institutions made up historically in Ube City.

However, pollution control measures by industry did not advance as expected after the committee was established, and citizens requested immediate execution of dust control measures twice, in 1952 and 1954. Considering Ube’s problem-solving history through discussion, such a systematic citizens movement was unique. It can be concluded that pressure from the citizens became a significant factor in the pollution control policy of Ube City.

The Vice President of Ube Industries, Kanichi Nakayasu, who returned from the inspection of Pittsburgh in 1953, declared a conversion of corporate activity under the slogan "Dust is money”, and in 1956 they developed Ube Pozzoran Cement to utilize collected dust. This meant that his company had developed a technical and managerial outlook regarding dust control measures. It can be said that the acquisition of knowledge and technology related to dust control in the industrial sector at that time was an important factor in changing the action of the industry (change of informal institutions). Influenced by this informal institutional change, the mayor and the industry began setting up voluntary goals for dust control in 1957, and the dust problem started to improve in 1960. Considering the fact that the voluntary goals created in Ube in 1957 were referred to when the national dust prevention law in 1962 was enacted, it is clear that Ube City was a front-runner in dust control measures in Japan at that time.

On the other hand, SOx control measures were not as progressive. There was a conversion of fuel in Ube City from coal to crude petroleum in 1960, and the Ube City Dust Fall Control Committee was progressively reorganized into the Ube City Air Pollution Control Committee to advance pollution control measures, including SOx reduction measures. However, the problem was not substantially solved until the conclusion of the pollution control agreement in 1971. The time period when the SOx density in Ube City began to decrease (after 1972) was the same as that of an average city in Japan. The next section considers why the Ube model, which had succeeded in terms of dust control, was not useful for SOx control and how the SOx control measures functioned after 1971, from the viewpoint of the development of social capacity and institutional change.

② System-working stage

The SOx pollution in Ube City began to decrease rapidly with the conclusion of the pollution control agreement in 1971. In other words, before 1971 there was not an effective measure for control of SOx pollution. There are two possible reasons for this phenomenon.

The first is the difference in character of the targeted pollutants. Accumulated know-how about the basic technology for dust control measures had already existed in Japan before the Second World War. On the other hand, the introduction of crude petroleum desulfurization technology occurred in 1967 and its commercialization did not start until the beginning of the 1970s. Moreover, although the dust was recyclable by collecting it as a material to be used in cement, it is believed that the ammonium sulfate and gypsum were obtained by methods that produced SOx pollutants as a by-product, which made it difficult for the process to become profitable.

The second is the character of the Ube model. As previously mentioned, it is accepted that the spirit of the Ube model was created by formally institutionalizing the informal institutions based on the history of the city. Decision-making was conducted in a conference composed of representatives of industry, administration, education and civilians without depending on regulations. The guiding principle of decision-making at a conference is unanimous approval, and a decision that is made based on consensus is executed promptly. However, at the same time there is a possibility of corrupt behavior (e.g., offering bribes) to reduce conflicts or save face.

The dust control was relatively easy to achieve based on social actors' consensus because it was technically not too difficult and the collected dust sold well as a by-product. On the other hand, industries did not seriously take actions for SOx control in the 1960s because they lacked both sufficient technology and methods to utilize the by-product. Moreover, the strong influence of opposing industries on the committee may have stagnated proactive discussion at the meetings.

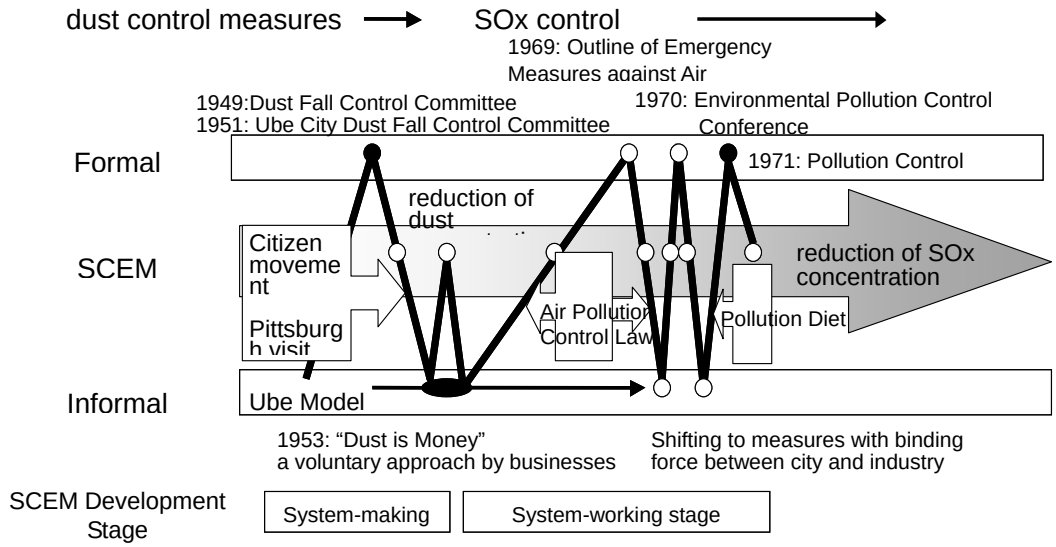
Here, the stagnation of social capacity development caused by the rigidity of institutions can be observed. The dust problem was overcome promptly through the establishment of institutions of the Ube model. Oppositely, it can be said that the SOx problem ended in a stalemate because of the Ube model. Next, we explain how Ube City was able to escape from the standoff and overcome the SOx pollution.

Analyzed from a viewpoint of institutional change, 1968 to 1972 was a time when institutions changed rapidly. First of all, the Air Pollution Control Law was enacted as a national law in 1968.This could be considered the starting point of institutional change in Ube City.

After receiving this external pressure, the outline of emergency measures concerning air pollution in Yamaguchi Prefecture was enacted in 1969 (formal institutional change), and the air pollution warning system was announced officially in Ube City. Responding to the introduction of the national legal system for pollution control policy in the same year, a pollution control measures room was also newly established in Ube City. An air pollution alarm was officially announced in 1970, and

factories were forced to cut operations. This was one of the main factors that made the industry take SOx control measures (informal institutional change). The Ube City Air Pollution Control Committee was reformed into the Environmental Pollution Control Conference in the same year (formal institutional change), and a discussion about the necessity for a pollution control policy by civic representatives was activated in the conference (informal institutional change). During the 1970s a national “Pollution Diet” was held, and nationwide public awareness concerning pollution control was raised. With such a trend toward pollution control at the national level, Ube City strengthened their organization by upgrading the pollution control measures room to a pollution control division (formal institutional change) in the same year. The rapid change of formal and informal institutions can be seen in this context. Ube City concluded the pollution control agreement with industry the next year (formal institutional change) and the arrangement of particulars in 1972. Consequently the SOx problem in Ube City was greatly improved. Figure 5.7 charts these changes conceptually. Regarding the pollution control policy of Ube City, the Ube model was formed as

Figure 5.7 Institutional Change and SCEM of Ube City



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institutions for dust control and continued until 1968. However, Social Capacity for Environmental Management did not improve and the SOx pollution problem was not overcome. Ultimately, both formal and informal institutions changed as a result of various factors, including external pressure and the change in the people's awareness of the pollution. The SOx problem was resolved after the new institutions for pollution control agreement had been established in 1971.

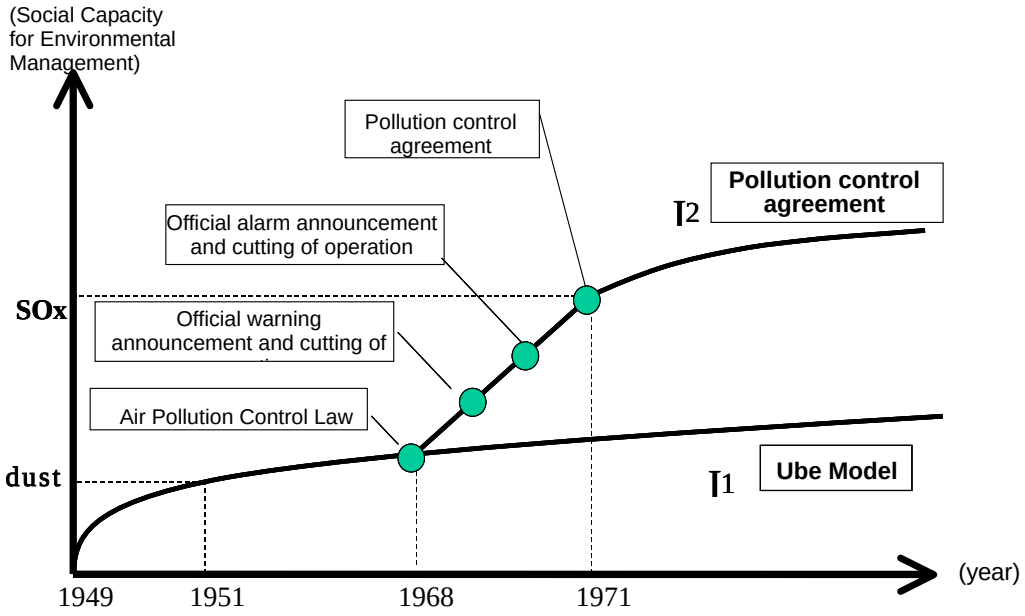
North says that sometimes "formal rules are developed deliberately to overrule and supersede

existing informal constraints that no longer meet the needs of newly evolved bargaining structures" (North 1990, p. 88). We can say that the informal institutions (the Ube model) which did not function for SOx control were replaced by new institutions (the pollution control agreement).

Figure 5.8 shows a conceptual chart of the institutional changes in Ube City and the Social Capacity for Environmental Management. Lines I1 and I2 show the ability curve of the Ube model and the pollution control agreement. The vertical line that represents the index of the Social Capacity for Environmental Management shows relative positions for both institutions (dust management capacity< SOx management capacity) in Ube City.

The pollution control policy concerning dust control, started in 1949 in Ube City, improved the social capacity through the establishment of the Ube City Dust Fall Control Committee as the Ube model (institutions) in 1951. However, because the Ube model did not function effectively for SOx pollution control measures that began after 1960, institutions were forced to change, and social capacity improved after adopting the pollution control agreement in 1971. The process is shown in Figure 5.8.

Figure 5.8 System change and
Social Capacity for Environmental Management in Ube City



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5.4. Conclusion

This paper defined the new concept of Social Capacity for Environmental Management as an operating capacity of the Social Environmental Management System that is formed by three social actors, the government, firms, and citizens and the interrelationship among them. Social Capacity for Environmental Management is also composed of three elements: policy and measures; human and organizational resources; and knowledge, technology and information that comprise each actor's social capacity. The main conclusion of this paper is described as follows.

The Social Capacity for Environmental Management can be placed within the discussion about the capacity development approach and sustainable development that international organizations such as the UNDP and the OECD have addressed in development aid.

Social capacity and institutions complement each other, and it becomes possible to model the development of social capacity in terms of the dynamism of institutional change. Social capacity is formed from tacit informal institutions, such as the social standards and customs formed through a historical course, and the formal institutions are created on the basis of assumptions of such informal institutions. Formal institutional change prompts further development of social capacity, and the improvement of social capacity prompts change of the informal institutions. Such informal institutional changes promote the formation of social capacity.

The above-mentioned dynamic process is a process for improvement of social capacity, and this can be shown as a capacity development model. When thinking within the framework of the Social Environmental Management System with respect to the pollution control measures for industrial pollutants, the development of the Social Capacity for Environmental Management yields a development model classified in three development stages: the System-making stage, System-working stage and Self-management stage.

Thus, two models, the capacity development model, which shows the relationship between the development of Social Capacity for Environmental Management and institutional change, and the 3-stage development model for the Social Environmental Management System, were presented. Stages of the Social Environmental Management System evolve as social capacity develops along with institutional changes.

We applied the methodologies of the capacity development model and the 3-stage development model to the dust and SOx pollution control measures of Ube City, and verified the models. As a result, it became clear that the dust control measures were taken promptly and the problem was resolved because the informal institutions were formalized (into the Ube model) and social capacity was formed. However, the institutions of the Ube method did not function for SOx control measures; therefore social capacity did not improve and sufficient pollution control measures were not taken. Eventually, institutional change in Ube accelerated under the external pressure of the strengthened restrictions at the national level. Also, the improvement of social capacity was accomplished

through the institutional changes brought about by the conclusion of the pollution control agreement in 1971, and the SOx control measures therefore advanced.

We can clarify the process of pollution-abatement measures of Ube City by applying the capacity development model, namely, the Social Capacity for Environmental Management and institutional change, and the 3-stage development model of the Social Environmental Management System. However, the analysis in this text is qualitative and the development of quantitative analysis techniques concerning capacity development is an issue for the future.

Remark: This chapter is a partially added/altered version of the Proceedings of “Social Capacity Development for Environmental Management and International Cooperation in Developing Countries” (January 13, 2004) at the second international symposium under auspices of the 21st Century COE Program, the Graduate School for International Development and Cooperation of Hiroshima University.

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(1) UNEP: United Nations Environment Program, WHO: World Health Organization
(2) GEMS: Global Environmental Monitoring System
(3) OECD: Organization of Economic Cooperation and Development
(4) The GEMS report explains that it selected the minimum capacity required to generate air quality information useful for policy design when making the index (UNEP/WHO 1996, pp. 30-32). However, we would like to point out that there is a bias in the government.
(5) "Catch-up type industrialization" is a pattern that developing countries are obliged to take because they industrialize later than developed countries. The key feature is that they have to develop the production management system to use the technology system and knowledge which developed countries have already created and used, and they have a policy system which includes export-led industrialization and promotion of the export industry connected with foreign capitals (Suehiro 2000, pp. 4-6).
(6) Refer to Matsuoka and Honda (2002) for a detailed discussion concerning capacity development and the Social Capacity for Environmental Management.
(7) Sen discussed the importance of a social framework in which people can combine and choose various alternatives freely to achieve welfare (well-being), and explained the freedom of selection using the concept of capability. Refer to Sen (1985,1992,1997) for details.
(8) According to the UNDP, human development is "the process to expand humans’ selection" (UNDP 1990). "Living long in good health", "obtaining knowledge", and "access to appropriate resources for a desirable living standard" are necessary for human development.
(9) A bundle of institutions is an idea that conceptualizes the social institutions as a complex of various institutions (Aoki 2001, Matsuoka and Kuchiki 2003).
(10) Sustainable development is defined as development that fills the present generation's needs without damaging future generations’ ability to fill their own needs (World Commission on Environment and Development 1987, p. 8).
(11) Details of the discussion over this concept are presented in Matsuoka and Honda (2002).
(12) Refer to UNDP (2002) and World Bank (1994, 2002) regarding the governance that emphasizes democracy, OECD (2002) about the relationship between governance and system, and Auer (2000) concerning the role of non-governmental organizations in environmental governance.
(13) The Japanese translation of the quotation is based on the translation by Takeshita (1994).
(14) While clarifying the complementarity of investment in capital to the environmental management culture and development of institutions, Nogami (2003) argued that it is necessary to form

institutions to prevent environmental destruction in the development process of environmental management capacity. He also pointed out the importance not only of institutional change of individual organizations, but also of the interaction between institutions in order to examine efficiency when we observe the individual organization and institutions that exist in society as a whole.

(15) The social capital used here is different from "social capital" in the meaning of infrastructure that becomes the basis for consumption. Review of the concept of social capital is detailed in Shikage (2002), Miyakawa (2003), and Morotomi (2003).

(16) The Japanese translation of the quotation is from the translation by Takizawa and Taniguchi (2001).

(17) Details concerning the development stage are presented in Matsuoka (2003).

(18) Refer to Nogami (1997) and Matsuoka et al. (1998) concerning the view of the Environmental Kuznets Curve and the economic growth and environmental problems of developing countries.

(19) Refer to the Evaluation Team on Environmental Cooperation of the Japan Association for International Development (2003) for a detailed explanation of the development stage in China and Indonesia.

(20) About 300 years ago coal was discovered around the Tokiwa pond and began to be used as a fuel. Many collieries were established after the Meiji era. However, they were swallowed by Okinoyama Colliery Ltd. in 1928, and it developed into Ube Industries.

(21) It was used not only for projects like the construction of the village-owned junior high school and the improvement of the Prefectural Ube Industrial High School, but also for the installation of the police station and post office, the maintenance of Tokiwa Park and the construction of the library.

(22) The monitoring points increased to 26 locations in 1971.

(23) In this agreement, the target value of SOx for environmental preservation was determined to be 0.034ppm (the national standard is 0.05ppm) average per hour in a year (the target year is the end of 1974).

(24) Afterwards, following the improvement of the situation regarding the environment, revisions of the pollution control agreement were made in April 1975, in September 1976, in October 1978, in August 1982, and in September 1984.

Responses to the Feedback Seminar Report of the Specific Subject Evaluation

In the thematic evaluation (environment) "*Environmental Center Approach: Development of Social Capacity for Environmental Management in Developing Countries and Environmental Capacity*." in 2002, several important suggestions have been made for better future activities. Those suggestions include: (1) an improvement in the internal feedback system of the evaluation results by the supporting organizations; and (2) more systematic and strategic responses.

The report is quite professional due to a commitment by JASID, which has a broad network, both domestic and international, and considerable human resources. More specifically, significant achievements of the report are to: (a) define the environmental management system consisting of the three actors (government, firms, and citizens); (b) analyze the system at different stages (i.e. system-making, system-working, and self-management stages) and roles of the three actors at each stage. These achievements are expected to contribute to future activities in the field of environmental management. To this end, we expect a validation of the model's effectiveness in countries not evaluated in the report. We also expect a development of more specific index of Social Environmental Management System (SEMS), for analyzing which stage each of developing countries currently belongs.

Responding to one of the suggestions related to enhancement of feedback system, we have been assigning the Evaluation Chief positions at both relevant domestic sections and overseas offices since 2003. In addition, we have introduced a feedback framework of evaluation results based on *Ex-ante Evaluation Document*. The document indicates how much previous lessens were reflected to *ex-ante* evaluations. Furthermore, we conducted questionnaire to JICA employees to analyze the issues for an enhancement of feedback system (see *FY 2003 Study Results on Feedback of Evaluation Results* for details). Results suggest that an improvement in evaluation quality, through employees' consciousness-raising, is necessary to facilitate the feedback to activities occurring at our organization. In addition to the institutional and systematic improvements described above, we would like to work towards further utilization of the evaluation results, as well as an enhancement of evaluation seminars and revision of evaluation guideline.

March, 2004

Planning and Evaluation Department

Japan International Cooperation Agency

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Activity Records

1. List of Main Participants at the Seminar in the Recipient Countries

Symposium in Indonesia

Hoetomo	Deputy I, Ministry of Environment
Hendri Bastaman	Ministry of Environment
Fujitsuka Tetsuro	Ministry of Environment (JICA)
Muns Hilman	Environmental Management Center
Kuwata Kazuhiro	Environmental Management Center (JICA)
Kawakita Tsunehiro	Environmental Management Center (JICA)
Hasroel Thayib	University of Indonesia
Setyo S Moersidik	University of Indonesia
Bambang Widianto	University of Indonesia
Nastiti Karliansyah	University of Indonesia
Otake Yuji	JICA Indonesia Office
Naito Tomoyuki	JICA Indonesia Office
Sakai Tsuneyuki	JBIC Indonesia Office
Budhi Sayoko	UNDP Indonesia Office
Hakimil Nasution	Environmental Management Bureau, North Sumatra
Andono Warih	Jakarta Environmental Management Board

Symposium in Thailand

Kamae Kennichi	Embassy of Japan in Thailand
Saito Norio	JBIC Thailand Office
Rodrigo Fuentes	UNESCAP
Sukanya Boonchalermkit	ERTC
Somporn Kamolsiripichaiporn	Chulalungkorn University
Pramote Thongkrajai	Huachiew Chalermprakiet University (SES)
Kitti Kumpeer	Kenan Institute Asia
Prasai Wangpanish	Samut Prakarn Environmental Society
Thongchai Panswad	TEI
Nakai Shinya	JICA Thailand Office
Qwanruedee Chotichanathawewong	TEI
Monthip Sriratana Tabucanon	DEQP-MONRE

Nguyen The Dong	Institute of Environmental Technology, Vietnam
Ella S. Deocadiz	Department of Environment and Natural Resources
Thussanee Aikvanich	City of Phuket
Okiura Fumihiko	JICA Thailand Office

Seminar in China

Sakurada Yukihisa	Director, Japan International Cooperation Agency (JICA) China Office
Mitake Eiichiro	Senior Representative, Japan Bank for International Cooperation (JBIC) China
Yagishita Masaharu	Chairperson, Supporting Committee in Japan of the Sino-Japan Cooperation Project Phase Ⅲ Professor, Graduate School of Environmental Studies, Nagoya University
Kikuchi Hidehiro	First Secretary, Embassy of Japan
Zhang Qinghong	State Environmental Protection Administration（SEPA）
Ruan Xianping	Director, Ministry of Science and Technology
Ge Chazhong	Fellow, Chinese Academy for Environmental Planning
Ren Yong	Deputy Director, Policy Research Center for Environment and Economy
Xiaofei Pei	Research Fellow, SEPA, Policy Research Center for Environment and Economy
Xia Guang	Director, Policy Research Center for Environment and Economy
Chihara Hiromi	Chief Advisor, JICA, SEPA, the Sino-Japan Cooperation Project Office
Mori Naoki	JICA Expert, SEPA, the Sino-Japan Cooperation Project Office
Koyanagi Hideaki	JICA Expert, SEPA, the Sino-Japan Cooperation Project Office
Zou Ji	Professor and Head, Department of Environmental Economics and Management, Renmin University of China
Edgar Endrukaitis	Program Director, GTZ
Gordon Davis	U.S.-China Environmental Governance Training Program
Huang Haoming	Vice Chairman and Executive Director, China Association for NGO Cooperation（CANGO）

Cui Hongmei	Guiyang EPB
Wang Xueyan	Director of International Cooperation Department, Shenyang EPB