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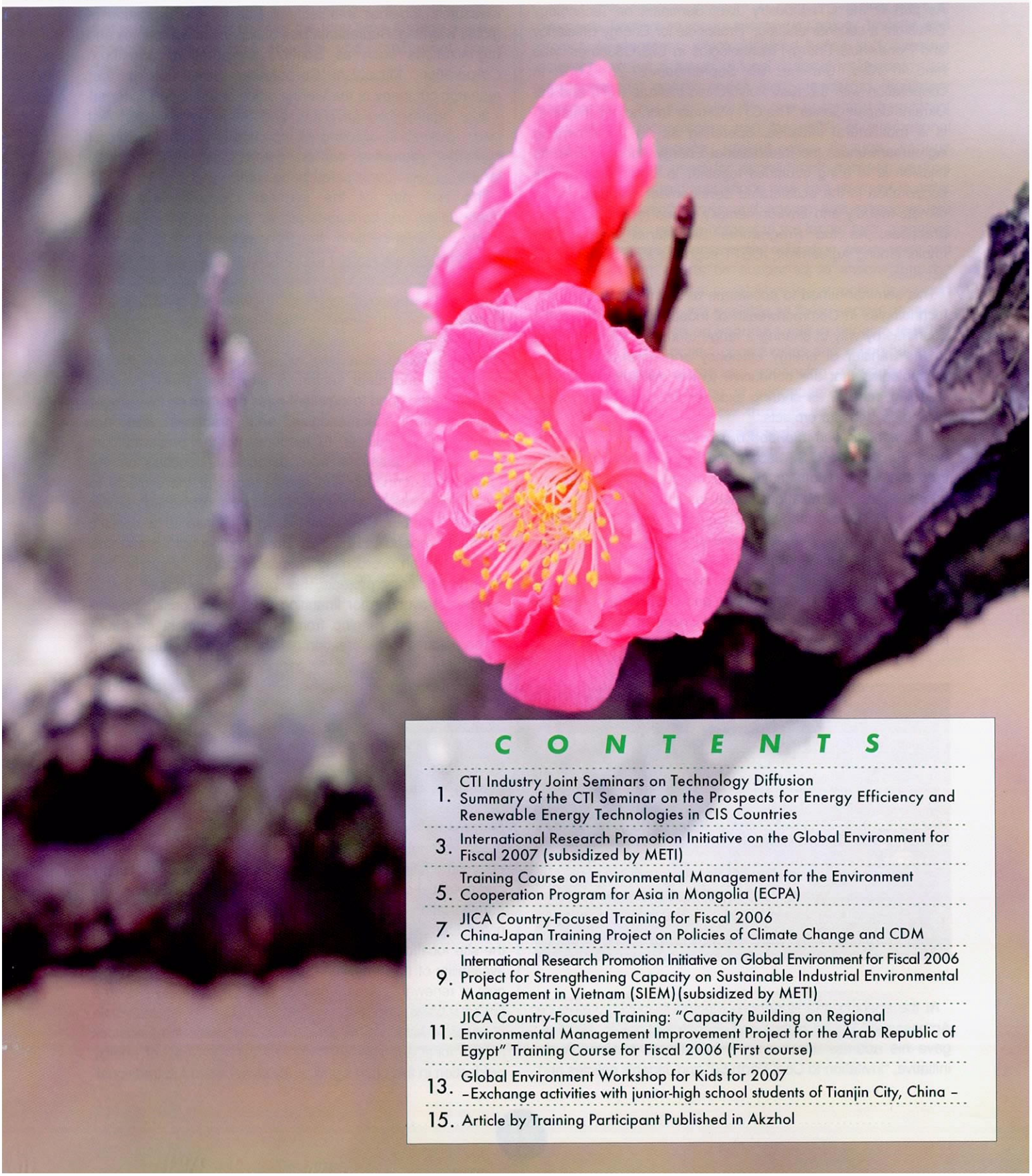


CONTENTS

CTI Industry Joint Seminars on Technology Diffusion

Summary of the CTI Seminar on the Prospects for Energy Efficiency and Renewable Energy Technologies in CIS Countries

As part of the CTI Industry Joint Seminars on Technology Diffusion, a seminar entitled, "Prospects for Energy Efficiency and Renewable Energy Technologies in CIS Countries" was held in Kiev, Ukraine, on September 27-28, 2007 in cooperation with the Kiev Polytechnic Institute (KPI) and the Ukraine-Japan Center. The CTI (Climate Technology Initiative) is a multilateral initiative, operating as an Implementing Agreement under the International Energy Agency (IEA). Its mission is to bring countries together to foster international cooperation in the accelerated development and diffusion of climate-friendly and environmentally sound technologies and practices. As the Programme Secretariat of the CTI Implementing Agreement, ICETT supports all aspects of CTI activities.

This seminar aimed to accelerate diffusion of clean energy technologies in Commonwealth of Independent States (CIS) countries by way of sharing a range of knowledge pertaining to the transfer of energy efficiency and renewable energy technologies that are conducive to the mitigation of global warming, as well as sharing experiences gained from such technology transfer projects.

This seminar was attended by government representatives from Europe, the U.S., Japan and the CIS, as well as the industrial sector both inside and outside the region, and international organizations such as the United Nations Framework Convention on Climate Change (UNFCCC), United Nations Industrial Development Organization (UNIDO), and the Renewable Energy and Energy Efficiency Partnership (REEEP), financial institutions such as the European Bank for Reconstruction and Development (EBRD) and the Japan Bank for International Cooperation (JBIC), and KPI.

At the opening, the Honorable Mutsuo Mabuchi, Japanese Ambassador Extraordinary and Plenipotentiary to Ukraine, gave his address introducing former Prime Minister Abe's initiative, "Invitation to Cool Earth 50" and Japan's policies and measures, together with technologies for the mitigation of global warming. Representatives of Japanese companies and organizations such as Shimizu Corporation, Sumitomo Corporation, Mitsubishi Corporation, JBIC, the partner research company of the Vienna office of the Japan External Trade Organization (JETRO), and Shinshu University, that have interest in working in cooperation with the target countries regarding carbon credits and environmental technology also participated in the seminar.

The first day of the seminar focused on specific opportunities and barriers to project development in both the energy efficiency and the renewable energy sectors. Presentations were given to provide insights from the project development community and private sector as well as the finance and policy community that are seeking ways to accelerate the growth of these sectors. In the energy efficiency sector, a number of practical examples of cost effective project examples were provided in the energy production and steel sector. In all cases, these projects demonstrated good to excellent rates of return on investment drawing upon technologies and practices that are commercially available. In response to the presentations, many of the questions from participants focused on the technical performance and specifications of the projects to gain greater insight on the practicality of implementing similar projects in other CIS countries. In response to a specific question posed to the representative of Sumitomo Corporation on overcoming finance barriers to implementing energy efficiency projects, the presenter indicated that a number of avenues for financing have been considered and are being used, ranging from advance payment for future carbon offsets to the creation of joint ventures to raise capital and share risk among project partners.

Presentations in the renewable energy sector covered a wide range of technologies but highlighted opportunities in the biomass to power production area in particular. As most countries in the region have large agricultural sectors, it was noted that this condition presents many opportunities for power projects relying on agricultural residues and biogas. In response to these presentations, questions from the participants tended to focus on the cost and performance of these technologies including ways to overcome some of potential challenges associated with intermittency of supply and potential supply constraints related to the production and transportation of biomass feedstocks. In response, presenters noted that each country's conditions are indeed unique and the site location of renewable power is critical to ensure the availability of the renewable resource, but the low or no fuel cost of renewable energy often offsets these other risks on a financial basis. One example provided was that of straw bale biomass to energy projects in Moldova, where the feedstock is both local and plentiful, bringing down the cost of energy production in this case significantly as compared to traditional

distributed power generation using fossil fuels.

Seminar participants expressed interest in further promoting dialogue between policy makers and project developers, which may be a manifestation of high expectation for project implementation in the CIS countries. There was also some discussion around the structural changes in CIS economies since the early 1990s and barriers related to these changes including issues around managerial practices and capacity, governance, and energy pricing. In response to these questions, the presenters noted that these challenges are not unique to the region, but are recognized as real challenges that must be addressed over the long term through training, capacity building, and effective and transparent policy development.

The second day of the Seminar focused on the issue of finance for projects in the cleaner energy sector and opportunities in the CIS region. Presentations were given by both entities supporting project development and finance locally as well as international financial institutions that were looking across the region for new project opportunities to support through lines of credit, equity, debt, or insurance mechanisms to reduce project risk for investors. Insights were also provided by multilateral agencies on activities related to capacity building and training to accelerate the number and quality of sound project proposals as well as initiatives like the Private Financing Advisory Network (PFAN) to help match project developers with expertise in the financial sector to help move project concepts to project implementation. There was high expectation among the participants for international support activities through multilateral initiatives such as PFAN that may reduce financial risks in project development by providing advice from the perspective of private sector financing experts at an early stage.

The panel discussion sought to identify practical ways to overcome barriers to clean energy technology transfer and project development, which included policy and incentive development; engagement of local financial institutions; clear and consistent policy; codes and standards; regulatory environments that internalize the true costs and benefits of clean energy technologies; and the ability of international institutions to reduce project risk through various mechanisms. The need for coordination between various initiatives and international efforts was also stressed in order to leverage existing efforts and ensure that resources are being effectively used. In respect to the longer term, panelists also noted the need to ensure that education, awareness, and capacity-building efforts be supported to ensure that the managerial and technical capabilities in the region to support clean energy markets are available as these sectors grow.

The Seminar played an important role in bringing together willing providers of project opportunities and willing buyers in the clean energy sector and enhancing networks of key players through exchange of information and views. The challenge now is to follow through on these networks, relationships, and ideas to make real projects happen on the ground.

<Reference>
CTI web site (Introduction to the Seminar)
http://www.climatetech.net/events/index_new_detail.cfm?Page=1&EventsID=5363

International Research Promotion Initiative on the Global Environment for Fiscal 2007 (subsidized by METI)

Human Capacity Development Project for Improvement of Productivity and Environment in China (IPEC)

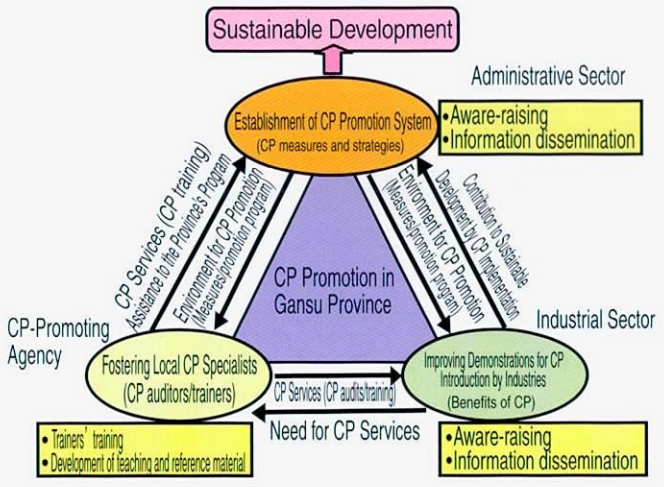
Outline

From fiscal 2005, ICETT has been implementing the Human Capacity Development Project for Improvement of Productivity and Environment in China (IPEC project) for Gansu Province, China. By promoting initiatives such as Cleaner Production (CP)[1], this project aims to contribute to the sustainable development of Gansu Province that is in harmony with nature. For the past two years, the IPEC project has fostered the development of CP specialists for Gansu, and conducted demonstration projects that advertised CP benefits as well as workshops to disseminate relevant information and study tours to Japan.

For this fiscal year, Advanced Training Courses and Workshops are being held as part of follow-up activities on themes that include energy saving and emissions reduction, topics that have been drawing increasing attention in China in recent years. (For IPEC project homepage, see http://ipec-gansu.com)

Background

In China, environmental issues are reaching serious proportions as the country undergoes rapid industrialization and experiences annual GDP growth surpassing 10 per cent. In recent years, emphasis has been placed on the necessity for "Scientific Development" that is in harmony with society and the environment. Furthermore, the *Eleventh Five-Year Plan* (2006-2010) has set targets for a 20 per cent reduction per GDP unit in energy consumption and 10 per cent reduction in major polluting substances. As a means of achieving these goals, greater attention is being given to CP due to its effectiveness in reducing resource and energy consumption at companies as well as fundamentally reducing environmental pollution. Although such efforts are increasingly being undertaken, in reality, efforts for effective and concrete CP implementation, and measures to improve energy saving and reduce emissions through CP, are not being carried out at a uniform level due to inadequacies in human resources and information of the government and companies.



Note 1: This was promulgated by the United Nations Environment Programme (UNEP) in 1989 in the following statement: "Cleaner Production is the continuous application of integrated environmental conservation strategies to processes, products, and services to increase overall efficiency, and reduce risks to humans and the environment."

▼Gansu Province's First Provincial Assessment Meeting on CP Audit Reports

▲On-site exercise during Trainers' Training

Outline of the Project and Outcome

With this background, ICETT has been undertaking the IPEC project in Gansu Province, China, since fiscal 2005 in order to contribute towards achieving sustainable environmental improvements in China. Working in close cooperation with the Centre for Environmentally Sound Technology Transfer (CESTT, the Administrative Centre of China's Agenda 21, Ministry of Science and Technology) and the Center for Development and Promotion of Science and Technology of Gansu Province, ICETT gained the cooperation of Japanese and Chinese experts in conducting a wide range of activities including fostering CP specialists (Trainers' Training) for Gansu through in-class learning and on-site exercises in the province and study tours to Japan. CP demonstrations at companies and workshops were also conducted and the CP Handbook was compiled. In this way, CP was promoted at companies and thirteen CP specialists for Gansu have been fostered who are currently taking the lead in promoting CP activities at companies. Model companies implemented proposals for improvement based on the CP concept, and achieved

energy saving and reduction of the environmental load. These companies are being introduced in various places as model companies of Gansu Province that were first in the province to pass CP audits. Furthermore, the workshop conducted in Gansu Province's major industrial city and the CP guideline that was prepared as a CP informational magazine of Gansu Province greatly contributed to enhancing the understanding of the CP concept and its benefits of government officials, companies, and those who support these companies.

IPEC Project Follow-up Phase

Although the IPEC project achieved considerable results during its activities conducted over a two-year period, China's awareness towards energy saving and reduction of environmental pollutants also heightened immensely during this time. This resulted in provincial governments and companies seeking even more efficient and effective CP activities. With this background, in response to the strong request of Gansu Province, the IPEC project conducted two activities as part of its follow-up phase which included: (1) Advanced Training Courses, and (2) Workshops.

(1) Advanced Training Courses

Advanced Training Courses were held for the purpose of strengthening effective CP activities on the factory floor. In addition to the CP specialists who had been fostered through the IPEC project, these courses that focused on QC (Quality Control) and energy saving targeted other CP and energy specialists in the province, and technical specialists of companies.

Practice in problem analysis during on-site training for the Training on QC

Participants receiving technical advice during Training on Energy Saving

The Training on Quality Control (QC) that was held from September 3 to 7, 2007 was designed to enhance the abilities of those involved in CP activities at companies in problem-solving and formulating improvement proposals. It gained the cooperation of Director Toru Inagaki of the Inagaki System Consulting Office in conducting the training. Through in-class learning and on-site exercises, the training participants learned about the QC concept and its seven tools. They came to understand that application of the QC concept not only makes it possible to improve product quality, but also reduce energy consumption and minimize the emission of environmental pollutants during the production process. The participants also used the seven tools to analyze problems during seminars and on-site training, and were thereby able to recognize their effectiveness. Discussion was also held on how the QC concept and the seven tools can be used in companies' CP activities and CP audits. Participants realized that this concept and its tools learned for the first time could be effectively applied to various aspects of existing activities.

On the other hand, the Training on Energy Saving that was held from November 12 to 16, 2007 was conducted for the purpose of promoting effective energy-saving measures on the factory floor. During the training, Professor Meng Zhaoli of China's Tsinghua University spoke on the energy-related measures and energy audits of China. Mr. Shigeru Kurihara, Head of Kurihara Environmental Technical Office in Japan, lectured on the technical aspects of, and management methods for, energy saving at factories. The participants were able to deepen their understanding of the recommended energy-saving measures and of the possibilities for energy saving in factories. They also studied about pertinent data for energy saving and items to be examined, energy-saving technologies, and management methods necessary for sustaining and improving on the outcome. Furthermore, the IPEC project requested Mr. Kurihara to visit Lanzhou again in January 2008, during which time he conducted on-site training at Tengda Xibei Ferroalloy Co., Ltd. and Lanzhou Vinylon (Group) Corp. Ltd., recipients of this training course, that enabled the training participants to enhance their ability on energy-saving measures.

(2) Workshops

The IPEC project conducted Workshops in Lanzhou City and Bayin City in order to examine Gansu Province's efforts in energy saving and reduction of carbon emissions, and thereby enhance the training participants' understanding of CP activities that would help companies effectively deal with these issues.

The Workshop on Energy Conservation and Industrial Emission Reduction was successfully held on January 9, 2008, with the cooperation of the Gansu Provincial Science and Technology Department, Gansu Provincial Economic Commission, and Gansu Provincial Environmental Protection Bureau. Dignitaries from the People's Government of Gansu Province and the Japanese embassy for China were in attendance, and the Workshop had more than 160 participants mainly from companies in the province. The participants deepened their understanding of the urgency of energy saving as an energy-saving measure and countermeasure against climate change for Gansu Province.

The Workshop on Energy Conservation and Industrial Emission Reduction

A CP specialist of Gansu Province speaking about the benefits of CP at the Workshop on Cleaner Production in Gansu Province

They were also able to gain an understanding of energy-saving measures that have been cultivated by Japanese companies, and of concrete activities to reduce emissions through CP. The participants were also able to gain a new perception regarding energy saving and emissions reduction. Many of the comments from the questionnaire reflected the participants' impression of the workshop themes as having been timely, and that each of the presentations provided them with helpful information and knowledge that they would be able to use in preparing concrete measures and activities in the future. The pamphlet on the energy-saving equipment of a Japanese company that was provided during the workshop also drew much interest.

The Workshop for Cleaner Production in Gansu Province was held on January 11, 2008, in Bayin City, which is the second largest industrial city in Gansu Province, after being held in the province's major industrial cities of Jiayuguan City, Jiuquan City, and Tianshui City last year. With the cooperation of the People's Government and Bayin's Science and Technology Bureau, there were approximately eighty participants from local governments and companies in the province. Through the workshop, the participants were able to deepen their understanding of the national policy that gives emphasis to development that is in harmony with the ecosystem. They were also able to gain an understanding of the contribution of CP towards this end, CP benefits, and case examples from companies in the province, in addition to CP activities in Japan. The CP specialists who were fostered through the IPEC project also gave presentations based on their experiences gained from activities conducted following the training, and they called on the training participants to actively introduce CP.

Expectations for Development following the IPEC Project

Through the IPEC project, the groundwork for achieving energy saving and emissions reduction through CP in Gansu Province has been established. In future, it is hoped that the people of Gansu Province will use the knowledge and experience gained through the project as well as the project results achieved to date as the foundation for realizing sustainable development.

Training Course on Environmental Management for the Environment Cooperation Program for Asia in Mongolia (ECPA)

(commissioned by Mie Prefectural Government)

As part of Mie Prefecture's activities for international cooperation, this project targets specific Asian local governments and involves working in cooperation with local government officials in making improvements to the environment of the given locality. The program targeting the Bayanzurkh district of Ulaanbaatar, Mongolia entered its second year, in continuation of the previous year. In the context of this program in its entirety, Mongolia is the fifth target country[1] for implementation. Mongolia oftentimes projects the image of expansive grasslands but, in actuality, it is suffering from serious environmental pollution. There is rising concern regarding the issues of air pollution and the trash problem in cities such as Ulaanbaatar, and even destruction of the ecosystem in grasslands of rural areas.

Air pollution in Ulaanbaatar in winter

The Basic Plan for Environmental Improvement of Bayanzurkh district has been formulated as a result of the activities undertaken in cooperation by Mie Prefecture and the town office of Bayanzurkh district beginning from the last fiscal year. Since this Plan will serve as the basis for all activities, concrete projects will be proceeded with based on it. Just as Japanese local governments also have a Basic Plan, Mongolia has completed a portion of its Action Plan for the purpose of carrying out concrete projects. This is the result of the local officials who came to Japan last year for training having understood what was necessary for them to undertake first in order to improve the environment of their district, and putting it into practice. Although the people of Mongolia themselves realize that the current situation such as air pollution and the trash problem should not be allowed to continue, they are unsure as to where to begin since activities to educate the public are not proceeding well. They, however, have begun to make a remarkable start in their activities by devising the first-ever Basic Plan for Mongolia within the short period of one year, and formulating detailed plans based on it.

During this fiscal year, which was the second year of program implementation, a visit was made to Bayanzurkh district to verify the situation. Although the district is being

Note 1: To date, this program has been provided for two-year periods to the Philippines, Thailand, Indonesia, and Vietnam.

faced with many environmental issues, lectures were requested by experts on topics such as the planting of trees in the district (landscape gardening) and air pollution countermeasures. It was therefore decided to have experts provide them with such instruction in January. The theme of the training upon their arrival in Japan was environmental education. As previously mentioned, although each person understands that current conditions must be improved, education of the average citizen is far from adequate in Mongolia. The training participants learned how this is being carried out in Japan and they are now attempting to carry out similar efforts in Bayanzurkh district.

Training in Japan (November 11 to December 1, 2007)

Participants of the training held in Japan comprised seven officials from the town office of Bayanzurkh district, including Deputy Governor Mr. Sukhbaatar and three other participants composed of a leading official of Sukhbaatar district in Ulaanbaatar, the president of a professional school in Nalaikh district, and staff from ECO ASIA, a private university specializing in the environment. Part through the training, the former Minister of the Environment and current president of ECO ASIA University, Mr. Adyasuren, also took part in the course. He listened to lectures during the daytime and gave lectures to the other participants at night on Ulaanbaatar's environmental issues as well as diligently engaged in independent study.

Courtesy visit to the Governor of Mie Prefecture

The training curriculum covered a broad range of subjects. Participants were provided opportunities to learn about activities to educate the public being undertaken by local governments such as Mie Prefecture, make field visits to see how companies are carrying out environment-related activities and view their facilities, and be introduced to the efforts of NPOs. At the start of the training, a courtesy visit was made to the Governor Noro of Mie Prefecture, commissioner of the program, and it seemed to have been a memorable experience for the participants. At the end of the training, the participants presented reports on what they intended to do upon return to Mongolia. Particularly due to the fact that the participants of this training were officials responsible for devising policies, their proposed policies had a high probability of being realized, which resulted in the reporting of concrete plans. They received high evaluation from the experts as well as from others attending this reporting session. Similar to

Training exercise using a game for a shopping experience

the last fiscal year, anticipation is high as to how they will develop and implement those plans.

Moreover, on November 23 during the training course, the participants took it upon themselves to hold a party to celebrate Mongolia's Independence Day. Training participants of other courses who were staying at ICETT also joined the party, and it was a pleasant and enjoyable gathering. One of the training participants from Mongolia was a singer, so he took the lead in singing songs. Also, a Mongolian singer, Oyunna, who is also famous in Japan happened to be visiting and attended the party with her family. Everyone who attended the party was very fortunate to be able to listen to the beautiful voices of the two singers.

Training participants from various countries surrounding Oyunna

Conclusion

Until the conclusion of this project in March 2008, as mentioned above, visits to Bayanzurkh district will be made together with experts to provide advice on environmental improvement. The activities of the participants who came to Japan for training are looked forward to with great expectations.

Before closing, this opportunity would like to be taken to express our deepest appreciation to the relevant persons who assisted with this training by accepting field visits and providing lectures. This training course had meaningful results and all participants were appreciative for having been able to take part in it. Thank you very much.

JICA Country-Focused Training for Fiscal 2006

China-Japan Training Project on Policies of Climate Change and CDM

Training background

An environmental issue currently being faced by all countries of the world is that of global warming. The Kyoto Protocol was adopted in order to resolve this issue and developed countries have been given numerical targets for reducing greenhouse gases (GHG). It went into effect in 2005 and, currently, eighty-four countries are signatories and 172 countries have concluded agreements. However, the reality is that the range of targets set for these countries only make up approximately 60 per cent of the total carbon emissions of developed countries. Furthermore, developing countries such as China and India that are responsible for almost half of the world's carbon emissions are under no obligation to reduce their output.

China comprises about 15 per cent of the world's total emissions, which comprises approximately 50 per cent of total emissions of developing countries. It is thus clearly apparent that China is among the countries that must give foremost priority to carrying out measures to prevent global warming.

Since it is difficult for the numerical targets of the Kyoto Protocol to be achieved only by developed countries due to cost and other reasons, a flexible mechanism referred to as the Clean Development Mechanism (CDM) has been introduced. This mechanism is one of the systems that allow developed and developing countries to trade GHG emissions. It allows developed countries to provide financing and technology to GHG reduction projects of developing countries, and purchase carbon credits according to the amount of GHG that has been reduced as a result to use in meeting their countries' own targets.

Each country invests in a project that will lead to GHG emission reductions, prepares a Project Design Document regarding that project, and submits it to a third-party agency, the CDM Board of Directors of the United Nations Framework Convention on Climate Change (UNFCCC). It is there that the document undergoes validation, which is screening to judge whether it meets the necessary requirements of a CDM project. Once it has been recognized as having met those conditions, it is registered as a CDM project and credits gained are counted towards reduction of that country's target.

In China, the setting up of a system to identify possible CDM projects has suffered a delay. In order to lend its support in setting up a system to screen and examine the information included in the CDM Project Design Document that is submitted by project applicants, and to provide the opportunity to come into contact with the superior energy and resource conservation technologies of Japanese companies, the Japan International Cooperation Agency (JICA) devised this training project and conducted it at ICETT as a commissioned project.

Training period

The training was held from April 2 to 13, 2007. Thirteen officials from local governments and relevant agencies of one city, six provinces, and one autonomous region including Beijing and Hebei province, who will be responsible for screening the CDM project applications and providing technical advice to those involved in those projects, came to Japan. The participants studied the basics about systematic aspects of CDM beforehand at a seminar held in Beijing.

1. Presentation of local information and job reports

At the beginning of the training, each of the training participants were requested to introduce the locality they came from, provide information regarding CDM projects conducted there, summarize the agency of their affiliation and what kind of work they were responsible for, and moreover, what they wished to learn at this training course. Most of the training participants held responsible positions in CDM projects. Among them were many who reported of projects that have hardly made any progress, and of insufficient human resources and funding, and the low level of understanding and recognition of companies, among others.

2. Presentation of CDM project proposals

For the theme for the presentations, three CDM projects that the training participants were actually involved with were selected. Then, assuming how the actual process would take place, from devising the CDM project to application, screening, then approval, training participants were chosen to play the roles of the consultant who gives technical advice to those involved in the project, and of the validator who screens the CDM Project Design Document that has been submitted. Once the roles were decided, the training participants divided into three teams and gave their presentations using the role-playing method. This exercise was carried out for the purpose of enabling the training participants to understand the requirements of a CDM project and information that should be confirmed when undertaking the process to receive certification, as well as providing training to acquire skills that would allow them to respond appropriately to any consultation they receive from project managers.

3. Explanatory lecture

The training participants received an explanation on essential points when devising Project Design Documents for CDM projects and the current state of CDM projects. Summaries of approved projects in China were also introduced.

4. Field visits to companies to view their activities in energy and resource conservation

As case examples of Japan's efforts in applying technologies to

reduce GHG emissions and conserve energy and resources, field visits were made to a thermal power plant, cement factory, oil-refining plant, ironworks, and livestock biomass power plant.

■Chubu Electric Power Co. Yokkaichi Thermal Power Plant

Built forty-four years ago, this thermal power plant began to shift from heavy oil to clean fuel in its operations as part of its countermeasures against environmental pollution. In 1988, the plant introduced environmental conservation countermeasures by making a complete shift to liquefied natural gas (LNG) and liquefied petroleum gas (LPG). The training participants shared their impressions of there being much to learn from Japanese technologies in order to reduce GHG emissions because China's thermal power plants are fueled by coal and measures are yet inadequate for removing NOx. They were also impressed by the serious attitude with which the technicians on site worked to maintain the performance of the equipment in order to sustain the level of thermal efficiency.

■Yagi Town Agricultural Public Corporation, Yagi Bioecology Center

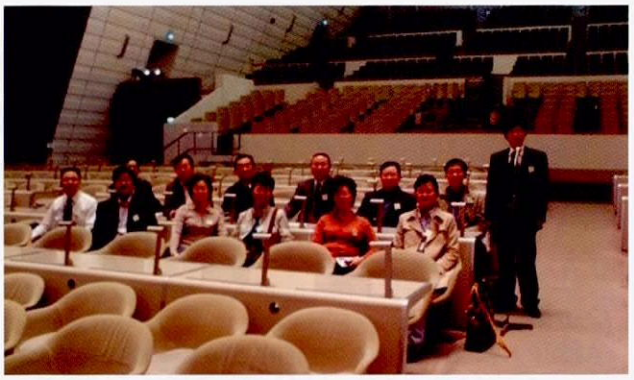
A field visit was made to this facility that processes the waste of milking cows, beef cattle, and pigs and *okara* (byproduct of *tofu*-making) through methane fermentation, and uses the resulting methane gas by burning it as fuel for power plants and boiling water. This facility also re-uses even the digestive juices and remaining dregs that result from the fermentation process as fertilizer for crop cultivation. Thus, the training participants were introduced to an exceptionally excellent case example of a bio power plant.

■Kyoto International Conference Hall

The training participants visited the main hall where the Kyoto Protocol was adopted in 1997.

5. Summary of the training

Each of the groups presented their validation reports, and received practical advice from their lecturers on where they should provide additional information, questionable points, and errors in format.



Next, the participants who had taken the role of consultant for each group revised the CDM Project Design Document by integrating the advice received from the lecturers, and the revised Document was presented.

Through the presentations, it was apparent that the Project Design Documents had been greatly improved on. The training participants also offered constructive comments saying that they were able to gain a good understanding of the theoretical organization of the Project Design Document, assumption of alternative proposals, and other points.

6. On the conclusion of training

The quality of the completed CDM Project Design Documents that had been presented was of a superior level. Furthermore, the manner in which the discussion had been conducted using the role-playing method was appropriate to the theme of this training course and its duration, which resulted in the training participants experiencing a high degree of satisfaction. Moreover, much cooperation was received from a large number of people who served as lecturers and managed the field visits, including Mr. Naoki Matsuo of Climate Experts and Mr. Tatsushi Henmi of Pacific Consultants. It was due to the cooperation received from such people that it was possible to achieve great success in this training and much appreciation is extended to all those involved. In fiscal 2007, there are plans to conduct a similar training course for regions that were unable to attend this one. Every effort will be made to conduct a training course that would be beneficial to all concerned by continuing to request the assistance of the respective agencies that lent us their cooperation during this training course.

International Research Promotion Initiative on Global Environment for Fiscal 2006

Project for Strengthening Capacity on Sustainable Industrial Environmental Management in Vietnam (SIEM) (subsidized by METI)

Outline

As part of a project receiving the subsidy of the Ministry of Economy, Trade and Industry (METI), ICETT implemented the Project for Strengthening Capacity on Sustainable Industrial Environmental Management in Vietnam (SIEM) from April 1, 2006 to March 31, 2007 while working in cooperation with the Ministry of Industry (MOI), Socialist Republic of Vietnam. This project was undertaken for the purpose of human resources development, primarily of the officials of MOI and the Department of Industry (DOI) of local governments. It aimed to enhance their ability in industrial environmental management as a way of contributing to the prevention of global warming by balancing industrial development and environmental conservation in Vietnam, a country currently pursuing development under a strategy of industrialization.
(Homepage of the SIEM project: http://siem-vietnam.com/index.html)

Background

During the period Vietnam achieved the rapid economic growth observed in recent years, environmental degradation spread not only in urban areas but also in rural cities, as a result of the expansion of industries into rural areas. For this reason, there is greater recognition of the need to strengthen environmental measures in rural areas that are expected to undergo even further industrial development. To make this possible, a vital issue is enhancing the environmental management capability of local government officials. In reality, however, barriers exist such as inadequacies in knowledge, information, and experience, and insufficient networking between the central and local governments.

Project purpose and outline

The SIEM project was implemented with the aim of strengthening the environmental management capabilities of local governments in order to contribute to both Vietnam's industrial growth and environmental conservation. For this purpose, it aimed to: (1) Enhance the abilities of local government officials to achieve sustainable development of the province, (2) Strengthen the commitment and leadership of local government officials towards balancing industrial development and environmental management (increasing productivity and reducing the environmental burden through measures such as resource saving and energy efficiency), (3) Strengthen the system of cooperation between the central and local governments, and (4) Strengthen networking between provinces.

This project was carried out with a focus on human resources development and primarily targeted local government officials who will guide companies in undertaking industrial activities that are in harmony with the environment.

SIEM project activities

The SIEM project comprises four activity components as follows: (1) Fact-finding studies; (2) Stakeholders' meetings; (3) Training; and (4) Study tours.

(1) Fact-finding studies

The project team, consisting of ICETT staff and MOI officials, conducted fact-finding studies twice in Vietnam in order to gain an understanding of the current state of industrial environmental management in the country. In the first study, the project team visited government agencies such as the MOI that are involved in industrial environmental management. They clarified the environmental management activities and respective roles of the central and local governments while also selecting the candidate provinces for the study. In the second study, as a result of the discussion undertaken with MOI, the project team visited the four provinces selected for the project, Bac Giang province, Hai Duong province, Ha Nam province, and Vinh Phuc province. The team investigated the provinces' environmental conditions and needs as well as the human resources to be targeted for training.

Targeted provinces for the study (colored areas)

Source: "60 Chapters for Learning about Modern-Day Vietnam"

(2) Stakeholders' meetings

Stakeholders' meetings were held twice with the participation of the project team and senior officials of the DOI, Department of Natural Resources & Environment (DONRE) and Provincial People's Committee (PPC) of the targeted provinces. These meetings were held for the purpose of enhancing the stakeholders' understanding of the project, to gather information pertaining to their proposals regarding the plan and outcome, and to affirm the guideline for activities following the conclusion of the project.

(3) Training

A total of three training courses (one week each) were held in Hanoi for a total of fifteen officials from MOI, DOI, and DONRE, consisting of in-class learning as well as field visits. The training was conducted with consideration given also to building networks between the central and local governments, and with the experts.

(a) First training

The first training was held for the purpose of enabling the training participants to gain a better understanding of the responsibilities and role of local governments under Vietnam's New Environmental Protection Law and national policies. In addition to in-class learning, the training also used the project cycle management (PCM) method that requires participants to work together in analyzing the current situation and problems of each province, and devise action plans on their own.

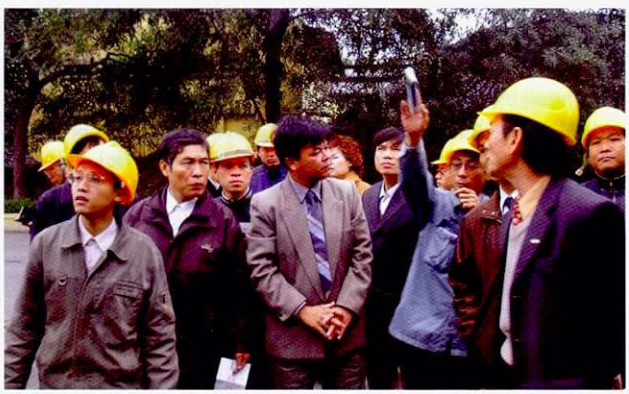
Training participants presenting reports during group exercise

(b) Second training

The second training aimed to enhance the participants' understanding of the method of industrial environmental management from the administrative perspective. Lectures covered topics such as Vietnam's regulations pertaining to the industrial environment and the current state of its companies' environmental management, and Japan's environmental administration and its companies' environmental management systems. The lecturers and training participants held active discussions during periods set aside for the exchange of opinions. Based on the information gained from the lectures and discussion, the participants conducted further discussion on a concrete schedule for implementation of the proposed action plans that were devised during the first training and sources of funding.

(c) Third training

The third training was held so that the training participants would be able to deepen their understanding of environmental conservation and energy-efficient technologies of the industrial sector. During a study tour of a factory located on the outskirts of Hanoi, the Japanese experts proposed how improvements could be made to energy efficiency and the environment, and provided pertinent guidance. The participants were thus able to learn what kind of perspective they should have when providing guidance to companies. Moreover, the training participants presented their proposed action plans for each province that they had worked on from the first training. They also exchanged opinions on the plans proposed by each province that would enable them to carry out their respective action plans on their own initiative and efforts.



Tour of a factory

(d) Study tours

Two study tours to Japan were implemented for the purpose of allowing the training participants to deepen their understanding of Japan's industrial environmental management by observing actual examples for themselves. The first tour aimed to heighten the motivation of the senior officials of DOI, DONRE, and PPC of the targeted provinces so that they would take the initiative in promoting industrial environmental management in the respective provinces. The second tour was held in order to deepen the understanding of the strategists of the DOI and DONRE of the targeted provinces in regards to environmental conservation technologies.

Among the comments received from participants of the study tours was that participation made it possible to heighten their awareness of the issues being faced by the provinces and of the need for environmental improvement. Another comment received was that by actually observing the efforts and activities being undertaken by the Japanese government and companies, it was possible to enhance their understanding of the topics covered during in-class learning. Such opportunities allowed the participants to examine the options available for their governments to adopt in future in order to introduce these technologies and strive for improvements.

Project outcome

Through the total of three training held in Vietnam and two study tours to Japan, it has been determined that the training participants and others who attended them were able to deepen their understanding of topics including Vietnam's and Japan's laws and regulations, policies, the roles that should be fulfilled by the agencies they were affiliated with, and how technologies are developing in relevant fields. Furthermore, it is believed to be highly significant for the promotion of environmental management activities by each of the provinces in the future that this project provided opportunities for interaction between the central and local governments and the local governments and experts.

One of the results of this project is the action plan that was formulated with the DOI of each province playing a central role. Although major issues remain pertaining to the procurement of funds and human resources, it is believed that the fact that each of the provinces are currently taking preparatory measures towards realizing their respective action plans is of major significance.

Future direction

In order to effectively implement the action plans that were formulated during this project period, it is considered necessary to supervise the progress of activities and provide support to DOI as appropriate to the activity. As part of the project for fiscal 2007, ICETT has worked in cooperation with the DOI of two of the four provinces by providing its assistance to activities for promoting environmental conservation and energy efficiency, as stipulated in the Action Plans.

Furthermore, since it has become clearly apparent through this project that there is a need to enhance companies' awareness regarding the environment and energy use, plans are underway to focus on the industrial sector and conduct an investigative study to grasp the current state of environmental and energy issues, and to examine the possibility of future cooperative efforts in the field.

Group photo in front of ICETT (First study tour)

JICA Country-Focused Training: "Capacity Building on Regional Environmental Management Improvement Project for the Arab Republic of Egypt" Training Course for Fiscal 2006 (First course)

1. Introduction

Commissioned by JICA for fiscal 2006, the training was targeted to central government officials of the Environmental Affairs Agency and regional branch offices. It was held for approximately four weeks from January 21 to February 16, 2007.

2. Purpose of the training

Parallel to rapid industrialization, damages due to air and water pollution are now reaching serious proportions. For this reason, the Egyptian Environmental Affairs Agency has been carrying out countermeasures with the cooperation of various countries such as Japan through the technical cooperation projects of JICA, whereby training participants acquire monitoring skills of basic items related to the environment and learn how to conduct on-the-spot inspections of polluting sources such as factories. However, it is necessary to properly manage, analyze, and evaluate data and information obtained through monitoring so that a countermeasure can be proposed for dealing with combined pollution (pollution that is considered to have multiple sources of pollution). For this reason, JICA decided to newly begin the "Capacity Building on Regional Environmental Management Improvement Project for the Arab Republic of Egypt," to be conducted in Egypt from 2006.

This training covers the priority issues among the individual activity themes of the above project: (1) Reinforcement of overall environmental management, (2) Air pollution control, and (3) Management of hazardous chemicals. It targets counterparts (C/Ps) who will assume leadership roles in each aspect of the implementation processes. The training was conducted for the purpose of enabling participants to gain an understanding of Japan's experiences and management system pertaining to each of the themes, and to enhance their ability to present practical countermeasures to deal withemerging pollution-related issues in the respective regions.

The training comprised those involved in the project in Egypt, including the persons-in-charge of environmental management (two persons, director of the Central Monitoring Institute and general manager for hazardous substances), three persons-in-charge of air pollution control (two for administration, one for analysis), and three persons-in-charge of hazardous chemical substances (one for administration, two for analysis). They all attended basic lectures on topics such as the legal system and environmental policies, which was a common part of the curriculum they shared. Efforts were made to allow the persons-in-charge of administration and those in charge of analysis to share their knowledge and communicate with one another. Curriculum including lectures, field visits, and analysis training were also provided for each field of specialty.

3. Content of the training

(1) Curriculum format

Each of the sessions was carried out following a complex format, with all training participants attending a particular activity at times, while at other times the group was divided between the air- and chemical-related fields or between administrators and analysts. The training was conducted in four sessions as follows:

Session 1 : Orientation and Japan's environmental policies (attended by all participants)

Session 2 :Techniques to grasp current situation (administrators in air- and chemical-related fields), analysis training for polychlorinated biphenyl (PCB) (chemical analysts)

Session 3 : Actual management techniques (administrators in air- and chemical-related fields), analysis of air pollutants (air analysts), analysis training for PCB (chemical analysts)

Session 4 : Summarization

Pertaining to the lectures, Prof. Inoue of Okayama Science University who is knowledgeable about the situation in Egypt began with an explanation of Japan's environmental administration, and also presented his proposal as to how the Egyptian government should act from here on. The training participants next studied about the legal system pertaining to air pollution and the Law Concerning Special Measures Against PCB Waste, etc., and then left on a study visit to Tokyo. In Tokyo, the training participants made a courtesy visit to Mr. Yoneya, Director of the Environmental Cooperation

Office, Ministry of the Environment. They enjoyed a lively conversation centering on the small, ornamental pyramid that the training participants brought with them when Mr. Yoneya recalled his trip to Egypt while accompanying the Japanese mission to attend a conference. He had previously thought that pyramids were found in the desert, but was surprised to learn that they are situated quite close to town. The training participants next visited JICA's head office where they reported on the progress of the current project and conveyed their request regarding the future of the project. Following this, two of the training participants who would be conducting PCB analysis training moved to the National Environmental Research and Training Institute of the Ministry of the Environment located in Saitama prefecture, where they received analysis training for long hours during their approximately two-week stay. Although the training was held for an extended period each day, they reviewed what they learned at the end of the day's session and discussed how they might carry out that analysis in Egypt, and were thus able to deepen their understanding. The other training participants also divided into the air- and chemical-related fields at times, and at other times divided into administrator and analyst groups, and received lectures as well as went on field visits appropriate to the subject matter. At the end of the study visit to Tokyo, two of the participants in charge of environmental management were scheduled to return home so a presentation meeting for the action plans of these two participants was held, which was participated in by everyone. The Japanese person-in-charge for the Egyptian side of the project was also present and it was a good opportunity to have him observe how the participants were undergoing training and their progress. Leaving the PCB analysts in Saitama, four of the participants returned to ICETT. They visited several companies and government agencies as well as received lectures and participated in field visits. The persons-in-charge of air-related issues visited a petrochemical plant where they studied countermeasures against emission sources and environmental monitoring. The persons-in-charge of analysis learned about what they should bear in mind when conducting an analysis, and how to select the equipment to be used for analysis and their operation at a private-sector company specializing in analytical work. At the conclusion, time was given to the participants responsible for analysis to conduct a discussion. The curriculum designated as much time as possible for the training participants to exchange opinions with one another and consider the issues among themselves. During the presentation of action reports, the participants received the advice of the training instructors and active discussion was held.

Extracurricular activities

Upon arrival in Tokyo for the study visit, the training participants were immediately taken to Akihabara in order to introduce them to the area. They enjoyed shopping in Akihabara for the duration of their stay. They also visited the Edo-Tokyo Museum. When the participants passed through Ginza in order to exchange currency, they showed an interest in everything they saw such as the townscape, show windows, and attractive posters at the bank, of which they took many photos.

During days when the training was not in session, they set out to Toba and Ise. When the participants were given an explanation of the purifying water at the Ise Shrine, a participant mentioned that they purify themselves before praying in Islam so that idea is something shared in common. While saying this, he scooped up the cold water with the ladle and washed his hands. Everything drew their interest as the training participants saw the water of the Isuzu River, gigantic trees of the shrine, and colorful carps in the pond while walking towards the main hall, and voiced their delight over the beauty of nature at the historically rich Ise Shrine. They later viewed a *taiko* (Japanese drum) performance at *Okage Yokocho* and enjoyed the dynamic rhythm.

Staff observation

Since the training was conducted for a limited period of time, it was apparently not possible to meet all the wishes of the training participants. However, by incorporating the knowledge and information that they gained from the lectures and field visits during their stay in Japan as well as administrative measures that would be suitable to Egypt or measures that have been carried out by Japan and are expected to lead to good results in Egypt, it is hoped that they will work together with the project experts in effectively promoting environmental improvement in Egypt through their own efforts.

Global Environment Workshop for Kids for 2007

- Exchange activities with junior-high school students of Tianjin City, China -

1. Aim of the Project

One of ICETT's major activities is promoting exchange and information dissemination for the purpose of educating the public on environment-related issues. Since 1996, it has conducted the "Summer Vacation Parent-Child Environmental Exchange Classroom" that targets the higher grades of elementary school pupils and junior-high school students, consisting of practical exercises, lectures, and field visits in relation to the environment as well as interaction with overseas training participants. As a form of expanding on the concept of this classroom, from 2002 ICETT has been conducting the Global Environment Workshop for Kids, which has been commissioned by the Yokkaichi City Government to disseminate information and educate as many children as possible (elementary-school pupils) on environment-related issues from a global perspective.

At Chubu Electric Power Co.'s Kawagoe Electric Power Museum "Tera 46"

The Workshop is being held in order to deepen the interest of children who will shoulder responsibility in the next generation in the wide range of global environmental issues. This is being carried out by enabling them to gain an understanding of the current state of environmental problems and issues overseas through interaction with training participants from developing countries staying at ICETT, and of the necessity for collaborative international environmental efforts, as being promoted by Japan. It is also being conducted for the purpose of allowing the children to become aware of the need to carry out extensive activities to deal with environmental issues that are rapidly reaching borderless dimensions.

From this fiscal year, the project has been targeted to junior-high school students and the workshop duration was extended, which made it possible to raise the level and broaden the extent of environment-related issues studied. Furthermore, by encouraging international exchange between the junior-high school students of Yokkaichi City and Tianjin City that enjoy a friendship city relationship, ICETT has been able to further achieve the aims of this project.

2. Summary of the Project

ICETT welcomed junior-high school students from Tianjin City on August 5, and for three days from the 7th to the 9th, they interacted with junior-high school students of Yokkaichi City by studying environment-related issues together with them. They were thus able to deepen their awareness of environmental issues as well as towards each other. A total of nineteen students participated, eight students from the First Junior High School and two other schools of the Tianjin Economic-Technological Development Area (TEDA) and eleven students from Shiohama Junior High School (two leaders also participated from Tianjin City).

Centered on the issue of global warming, lectures covered a variety of facets related to the global environment. The students studied about atmospheric conditions through observation and experiments related to carbon dioxide and suspended particulate matters. They also listened to a lecture on the global energy situation and went on a field trip to a thermal power plant. They also received lectures on the effective utilization of resources using material obtained from separation of garbage, and on the preservation of the water environment. A field trip was also made to a facility generating environmentally friendly energy, and to a complex company that has made the environmental issue part of its business concept. Moreover, the students conducted studies on efforts being made for the environment and safety in the agricultural production sector and on the history of Yokkaichi

Conducting COD measurement experiment at Yokkaichi Port Authority

City's efforts towards overcoming pollution, followed by field trips to examine the city's natural environment. In this way, the students studied environmental issues from a variety of facets, exchanged opinions based on what they learned, and deepened their understanding as to how vital it is to examine environmental issues and make efforts towards their improvement.

Exchange of opinions and presentation

Furthermore, the students were able to interact even more closely while taking part in cooking classes for curry and rice, and boiled pork dumplings which are, respectively, representative dishes of Japan and China, viewing a Japanese fireworks display, eating shaved ice, taking part in classes for learning simple Japanese and Chinese conversation, and making a visit to Japan's ancient capital, Kyoto.

Interaction through cooking - Enjoying rice and curry, and boiled pork dumplings

3. Evaluation of the Project and Future Issues

A questionnaire and survey were conducted pertaining to the degree of satisfaction of the participants towards the overall project, and regarding the importance for environmental conservation and need for efforts towards environmental improvement. Their outcome revealed that the students had been able to gain a certain degree of understanding of the issues. It was also evident from their essays that many of the students felt that through their experience of interacting with students of their own age, they came to feel that they would be able to continue the association as good friends without regard to differences in culture and customs. This project therefore was able to obtain a favorable outcome pertaining to exchange, which is another of the major aims of this project. Overall, this program is considered to have been a success.

For future implementation of the Workshop, consideration should be given to preparing a lighter schedule and providing more opportunities for participants to exchange opinions. The curriculum should also be reviewed to include increased opportunities to experience Japanese daily living and traditional etiquette. It may also be necessary to discuss further issues related to the wide variety of ages of participants resulting from the differences between Tianjin City's and Japan's school systems, and how to deal with the issue of language ability as well as making reciprocal visits between Yokkaichi City and Tianjin City.

4. Remarks

At the meeting held to exchange opinions and share impressions of this past Global Environmental Workshop for Kids, one of the opinions raised was, "Through the learning exchange, as a junior-high school student of the same age, I realized how different our languages, culture, and thinking were, but yet on the other hand, I also, learned how much we shared in common and found it to be an invaluable and meaningful experience." This type of learning exchange between junior-high school students can provide this Internet generation with an invaluable genuine experience. The importance of such environmental learning exchange has been recognized for fostering the needed international sense and enhancing language abilities in order to preserve and improve the global environment.

It is hoped that this project will be conducted on a continuous basis so that this kind of exchange pertaining to environmental issues will develop into environmental cooperation on a global scale.

Article by Training Participant Published in Akzhol

An article by a training participant from Kazakhstan (Mr. Zhakhanger Nazarbekov) in fiscal 2005 for JICA's Training Course on "Water Quality Monitoring for Central Asia", which invites the participation of three training participants each from four countries in Central Asia, was published in Kazakhstan's newspaper, Akzhol (means "White Path" and is the main newspaper of Zhambyl Province).

The article covers how experiences were exchanged with Japanese people and that Japanese people's faces look very similar to the Kazakhstanis'. It also states that Japan has superior scientific technology and that JICA is conducting a project related to water quality in Central Asia. It reports that Japan's research institutes are installed with equipment that can conduct in-depth analysis of the air, water, and soil.

The article provides a description of the approximately two-month training course stating that the participants were guided by a team of lecturers, including Professor Emeritus of the Graduate School of Osaka Prefectural University, Yoshihiko Ogino; Mr. Terumi Mizuno of Techno Chubu Company Ltd.; and Mr. Susumu Kato of the Public Health and Environment Research Division, Mie Prefectural Government. The article reports that the training participants were also able to participate in the research being conducted by the team of lecturers and that they were able to gain valuable experiences. Mr. Zhakhanger stated that he not only studied about Japan, but also introduced the country of Kazakhstan and the Kazakhstanis to the Japan side, and provided information even about his country's unique culture.

Mr. Zhakhanger also shared that he understood the need to study the know-how, experiences, and technologies of developed countries in order to achieve their level of development. The article concluded with his wish that the Kazakhstanis would have the similar diligence of the Japanese people, and not only similarities in appearance. This article enabled us to keenly sense the importance of increased international cooperation.

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