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CTI PFAN Africa Forum for Clean Energy Financing

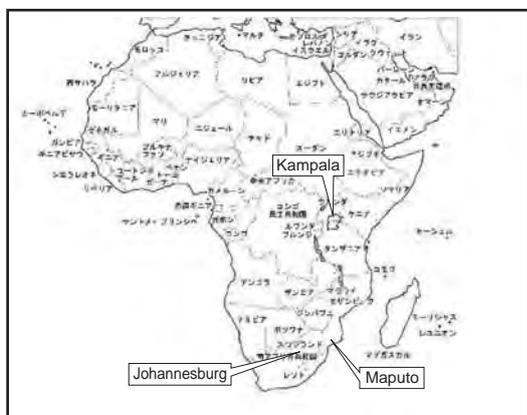
Outline

CTI PFAN Africa Forum for Clean Energy Financing (AFRICEF) was held on 14-15 September 2010 in Johannesburg, South Africa. During the course of May, three Project Development & Financing Workshops for the 16 short-listed projects participating in the AFRICEF were held in Uganda, Mozambique and South Africa.

Background

Since FY 2008, ICETT has been organising fora in Asia with aims to provide business-matching opportunities for both clean energy project developers and investors, and to enhance the fund-raising ability of project developers. This forum was also held in Africa in 2010. Among the 65 applications received from 16 countries, 16 projects were short-listed to participate in the AFRICEF process.

There is a lack of understanding (gap) which we call the “missing middle” between project developers and investors. The Project Development and Financing workshops held in Kampala, Uganda (May 21, 25 participants), Maputo, Mozambique (May 24, 13 participants) and Johannesburg, South Africa (May 26, 21 participants) also served as a preparatory workshop, coaching and learning sessions to fulfill this gap.



Workshop in Uganda: Enthusiastically explaining that many projects can lie under a single umbrella



Workshop in Mozambique

Visiting Africa

Although this was my first visit to the African Region, unfortunately, there was not much opportunity to experience the atmosphere and features unique to Africa, as not to mention the danger of going out at night but going out alone even in the daytime can be equally dangerous, our scope of activity was limited to the trip between the workshop venues and our accommodations.



Zakumi, the mascot for the 2010 FIFA World Cup

With the whole of South Africa already enthralled in the atmosphere of the World Cup, we could find the various national flags, “Zakumi”, the official mascot for the 2010 FIFA World Cup, and various related decorations such as soccer balls around the city. Although it was physically demanding event, taking about two days for the one-way trip including waiting time in transit with seven hours time difference, I was happy to see the workshop going over well and being appreciated by the participants. (Kawaguchi)

CTI Activities at COP 16

December, 2010

Cancun, Mexico

Outline

The United Nations Climate Change Conference was held in Cancun, Mexico from November 29 to December 11, 2010. The 16th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 16) and the 6th session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (COP/MOP6) as well as the 33rd Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) and the 15th Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA) were held at the conference where Parties discussed the ways forward in strengthening international cooperation for the long-term climate change regime under the Framework Convention and the Kyoto Protocol.

ICETT participated in the Conference as the CTI Programme Secretariat to hold side events as well as set up an information booth to enhance better understanding of our activities. At the conference, 12,000 representatives from governments, UN agencies, international organizations, and NGOs were in attendance.



Side event panelists

■ Efforts to combat climate change as an international society began with the adoption of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992. This Convention provided an action framework for stabilizing atmospheric concentrations of greenhouse gases in order to avoid “dangerous anthropogenic interference” of climate change. The UNFCCC went into effect on March 21, 1994, and has currently been ratified by 194 countries.

■ The Climate Technology Initiative (CTI), established by the International Energy Agency (IEA)/OECD member countries and the European Commission at the first Conference of the Parties (COP1) to the UNFCCC held in 1995, is a multilateral initiative for international cooperation.

Its mission is to bring countries together to foster international co-operation in the accelerated development and diffusion of climate-friendly and environmentally sound technologies and practices. CTI participating countries have, since its founding, been undertaking a broad range of co-operative activities in partnership with developing and transition countries and other international bodies. The CTI works closely with the United Nations Framework Convention on Climate Change (UNFCCC) process, including its Secretariat and the Expert Group on Technology Transfer (EGTT), relevant IEA Implementing Agreements and other international organizations or initiatives. The CTI implements a wide range of activities to provide assistance in technology needs assessments, awareness-raising, capacity building, and technical support in keeping with the technology transfer framework established at the UNFCCC’s Marrakech Accord. In 2003, the CTI was reformed as an Implementing Agreement of the IEA and established an international secretariat at ICETT broadening the scope of its activities.

■ Financing issues have been one of the main focus of discussion for technology transfer under the UNFCCC. To respond to these issues, CTI has been contributing to the

UNFCCC’s technology transfer objectives in close cooperation with the UNFCCC secretariat by launching the CTI Private Financing Advisory Network (PFAN) as a means of promoting the access to financing necessary to implement climate-friendly projects in developing countries.

The CTI PFAN, which is a highly effective endeavor, facilitates furthering the opportunities for financing of project developers and entrepreneurs involved in clean energy, renewable energy, and energy efficiency projects, via public-private sector partnerships, and encouraging technology transfer to developing countries and countries with economies in transition. The CTI PFAN network consists of private financial institutions, project finance experts, non-profit organizations, multilateral organizations, and governmental organizations. In order to participate in the CTI PFAN program, members must have track record of investing in climate-friendly projects in developing countries, and providing financial services.

■ The CTI has positioned the PFAN programme at its core in order to guide discussion at the UNFCCC, and at this conference reported the progress and plans for the future by holding two side events. It was noted that the CTI has supported over 100 projects through its PFAN activities in the four years of operation since its establishment in 2006, and 21 projects reached financial closure securing private-sector financing of aggregate 232 million US dollars. By implementing these projects, 240 megawatts of clean energy will be provided and greenhouse gases will be reduced by 1,260,000 tons of CO₂ per annum. Four of these projects are energy efficiency improvement projects, which will result in 61.3 GWh in energy savings per year.



Side event participants

■ As CTI PFAN program makes effective use of the limited public resources and are highly effective in facilitating access to private sector financing and direct investment, CTI is planning to work toward incorporating PFAN-like tool in the post-2012 framework in order to contribute to achieving the goals of the UNFCCC. (T. Kuroda)

A Project to Promote Reduction of Greenhouse

India

CTI Dissemination of Energy Efficiency Technology in the Rolling Mill Cluster in Gujarat, India in FY2010

Outline

ICETT has implemented a program to reduce greenhouse gas emissions through resource and energy efficiency, targeting rolling mills in India, as a subsidiary project of the Ministry of Economy, Trade and Industry. This project involved partnering with the Climate Technology Initiative (CTI) and working with the cooperation of technical specialists involved in energy efficiency in Japan as well as India. We would like to show you the results that have been achieved in the region where we implemented this program last year.

Background and Objectives

India, which continues to experience economic growth, emits the largest volume of greenhouse gases after the United States, China, and Russia, and energy conservation policies are being developed. India's industrial structure is characterized by the national development of small and medium-sized industry hubs called industrial clusters, and in these regions, many issues remain regarding greenhouse gas emission reduction and energy conservation through more effective energy use. For this project, we implemented technological assistance in connection with factory facility improvement and operational management, aiming at resource and energy efficiency-related technology transfer and dissemination in the rolling mill cluster in the state of Gujarat in western India.



Bhavnagar,
Gujarat, India

Project Specifics and Results

Last year, rolling mills in Bhavnagar, Gujarat were selected to be the focus of our efforts, and we carried out energy efficiency examinations, inspected improvement measures for effective furnaces, and implemented improvement renovations at a model factory. Once the improvement renovations were done, we conducted measurements for different kinds of data, analyzed the results of our improvements, and held workshops to explain our activities and showcase our results in order to disseminate these improvements throughout the area.



Furnace construction

Dissemination Activities in the Bhavnagar Area

This fiscal year, we provided technical support through workshops and guidance visits for factory owners and site supervisors in order to disseminate the results of our model factory to the rolling mills in the cluster. In addition to improving the energy efficiency of previous furnace installations, we instituted new technical guidance, including detailed analysis of rolling processes in target factories and temperature management optimization. The result is that as of this year, we have carried out renovations for improving the furnaces of three companies.



Technical guidance through factory visits

Wide Dissemination of Energy Efficiency Improvements

Through our activities in Bhavnagar, we were able to develop an energy efficiency improvement system with our Indian partners, furnace installation companies, and local consultants. We had factory owners consult with us regarding the causes of problems in manufacturing processes and maintaining reliable product quality. Through the great trust placed in technical assistance offered by Japanese specialists and energy efficiency assistance for industry clusters in those areas most important for India's development, we expect to keep encouraging the reduction of greenhouse gas emissions. (Tabata)



A workshop for factory engineers

Gases Emitted by Industries in Developing Countries

China

Energy Efficiency Improvement Program in China FY2010

Outline

As part of an assistance program by the Ministry of Economy, Trade and Industry, we have formed partnerships with organizations in China and, on April 1, 2008, began a project to reduce greenhouse gas emissions in China. In fiscal 2010, we began activities to disseminate and develop, in Jiangsu Province, the energy efficiency improvements we had previously implemented in the chemical fertilizer industry in the southern Chinese province of Yunnan.

Background of the Project

As a result of China's economic growth, the volume of fossil fuels consumed by the country has increased rapidly. According to "2009 Greenhouse Gas Emission Statistics" published by the International Energy Agency (IEA), China overtook the United States in 2007 to become the world's biggest CO₂ emissions producer. This is an energy issue as well as an environmental one that needs to be solved promptly. As part of its eleventh five-year plan, China has been aiming to reduce energy consumption per GDP unit by 20%. In order to achieve that objective this year, the final year of that plan, it is considered essential to take these efforts to the next level.

In fiscal 2008, our foundation carried out resource and energy efficiency assistance in the chemical fertilizer industry in Yunnan Province as a project for supporting the reduction of greenhouse gas emissions in an effort to target high-energy-consuming industries within China. We implemented support activities to reduce greenhouse gas emissions at two chemical fertilizer

of resources and energy more widely available, and we worked on ways to promote and firmly establish activities for improving business. This fiscal year, we are aiming to reduce greenhouse gas emissions further by repeating the successes we had with our program in Yunnan and extending them to chemical fertilizer companies in Jiangsu.



Technical guidance at a factory

Project Implementation Site: Jiangsu, China



companies, In addition to reducing the combined CO₂ emissions of those companies by 120,000 tons per year, we succeeded in reducing atmospheric pollutants and improving productivity by lowering coal consumption. In 2009, we implemented an assistance program to widely disseminate those results to other chemical fertilizer businesses in the province. As a result, we were able to reduce the total annual CO₂ emissions by 160,000 tons, reduce the industry's environmental burden, and lower coal consumption through activities targeted at six chemical fertilizer companies, and in doing so we succeeded in improving productivity. In addition, our activities in fiscal 2009 consisted of producing textbooks on resource and energy efficiency to use as tools making information on our project results and efficient use

Objective and Specifics of the Project

The objective of our activities in fiscal 2010 was to reduce greenhouse gas emissions by improving the efficiency with which resources and energy were used by chemical fertilizer companies in Jiangsu, China. In June, we implemented training related to resource and energy efficiency, targeting energy efficiency managers and engineers at chemical fertilizer companies in the province as well as staff of energy conservation organizations. Japanese expert along with engineers from model companies in Yunnan gave presentations at chemical fertilizer companies to demonstrate examples of resource and energy savings at chemical fertilizer plants in Yunnan, and participants appeared to gain ideas for improving resource and energy efficiency at their own companies.

Currently, we're conducting on-site examinations at three target companies. We're also offering proposals on how to improve resource and energy efficiency as well as technical guidance for implementing those improvement methods. Going forward, we plan to apply our successes in Jiangsu and examine methods of disseminating them in order to have these successes widely shared among the chemical fertilizer industry in China. (Oya, Nagasaki)

Project based on International Expansion of Japan-model Environmental Control Technologies and Techniques in China

Outline

The “Clean Asia Initiative,” which was proposed by the Ministry of the Environment in June 2008, stipulates that packages of environmental measures, measurement technologies, regulation systems, human resources, etc., will be disseminated and further developed based on Japan’s experience in successful pollution control, thereby promoting measures that help to achieve a low-carbon/low-pollution society.

In this project, under the above-mentioned purpose, we implemented the following three activities as an individual cooperative project in China: 1. Understanding the needs for environmental countermeasure technologies in China and creating a list of technologies, 2. Training courses to enhance the capacity for environmental management of local provinces such as Panzhuhua city, Sichuan Province, China, and 3. Conducting a seminar on reduction of the total amount of nitrogen oxide and on-site investigation at the relevant facilities in Japan.

1. Understanding the needs for environmental countermeasure technologies in China and creating a list of technologies

We conducted a survey on the needs for environmental countermeasure technologies in the fields of air and water quality, based on the current environmental situation and the future plans of China. We conducted surveys on nitrogen oxide (NOx), which is being considered for total amount reduction from 2011 in the field of atmosphere; and on nitrogen & phosphorus, which are considered some of the serious problems to be dealt with in the field of water quality.* Moreover, based on the gathered information, we listed technologies applicable to China, in both Chinese and Japanese, including low NOx burners, flue gas denitrification equipment, and denitration catalysts and nitrogen oxide monitoring, as technologies for measures against nitrogen oxide emissions from fixed sources.

* Some of literature surveys were outsourced.

2. Training courses to enhance the capacity for environmental management of local provinces such as Panzhuhua City

Japan’s Ministry of the Environment and China’s Ministry of Environmental Protection have jointly implemented the Japan-China co-benefit model project in order to promote the “Co-benefit Approach,” which is designed to simultaneously realize both environmental improvement and global warming countermeasures. Also, they have implemented a Japan-China joint research project and other projects for the assessment of environmental pollutant reduction programs from a perspective of “co-benefit” for Panzhuhua City, Sichuan Province. In this project, training on environmental management, prevention of air pollution and co-benefit technologies was implemented both in Japan and Panzhuhua City in cooperation with the Japan-China co-benefit model project, to enhance the abilities of persons in charge of environmental management in Panzhuhua City and in companies toward higher effectiveness.



Training in Japan for officials from Panzhuhua City, etc.

The training in Japan was conducted from October 18 to 24, 2009, in Yokkaichi City, Tokai City in Aichi Prefecture, Kawasaki City, and Tokyo, with 10 persons invited, including officials from Panzhuhua and other cities and representatives from

companies, who are expected to take the leadership in the environmental field in the future. The focus of the training was to deepen understanding on environmental management among the participants through visits to monitoring stations and companies in addition to classroom learning.

The training in Panzhuhua City, Sichuan Province was conducted for four days from November 10 to 13, 2009. This training was implemented for about 20 participants, including environmental officials of Panzhuhua City and representatives from companies on subjects such as co-benefit, administrative methods and techniques for the preservation of the atmospheric environment, and climate change issues.

3. Conducting a seminar on the reduction of the total amount of nitrogen oxide and on-site investigation at the relevant facilities in Japan

To contribute to formulating a policy and plans for China on the reduction of the total amount of nitrogen oxide, the “Second Workshop for Japan-China Joint Research on the Reduction of Total Mass of Nitrogen Oxides” (NOx) was held for two days on November 4 and 5, 2009 in Beijing, focusing on measures to reduce the total amount of nitrogen oxide in the field of atmosphere.

The first workshop was held in Beijing in July 2009, focusing on legal regulations and administrative measures on the reduction of NOx. The focus of this second workshop was the technical aspects. The workshop, which was attended by environmental officials from Japan and China and representatives of companies, included presentations from participants from both Japan and China and exchanges of opinions.

Furthermore, to deepen understanding of the actual status of technologies for the reduction of NOx, we invited six persons from the Ministry of Environmental Protection of China, etc., to study tours in Japan from

December 1 to 5, 2009. The participants visited relevant facilities such as a coal fired power plant, a cement plant and an automotive factory and exchanged opinions on designing systems for the reduction of the total amount of NOx, as well as cooperation between Japan and China to reduce NOx in the future with officials from the Ministry of the Environment. (Asano)



The Second Workshop (Beijing, China)

Overall Waste Management for Promoting Recycling-oriented Societies in Peru

Outline

ICETT held training under the theme of overall waste management for 10 local administrators from Peru for 37 days from February 4 to March 12 in 2010.

Background

In Peru, the Ministry of the Environment was newly established in May 2008, and began to take charge of waste management, which was previously under the jurisdiction of the Ministry of Health (MINSA). However, this transfer has yet to be completely implemented, with management being duplicated between the two Ministries. The Ministry of the Environment has no local agencies due to its incomplete establishment, and cannot be expected to implement local activities related to waste management. Moreover, most local governments, which are entities in charge of implementing waste management, fall far short of providing basic services to their citizens. Aiming to enhance the daily management and control capacity of local governments, this training was held with a focus on techniques and methods used in Japan that led to the improvement of waste management.

Training details

In the training, participants aimed to improve daily governmental management and control of waste disposal, to enhance the daily management and control capacity of local governments, to create a recycling-oriented society, and to promote the 3Rs in Peru. To that end, adopting tips from the characteristics and efforts of Japan's waste management administration and waste disposal technologies, the participants compared Japan's style with that of Peru. The training was divided mainly into three themes—"Japan's waste management system," "solid waste management technologies" and "environmental awareness education," in order to analyze Peru's waste disposal system and seek reform measures against the problems. During classroom learning, sufficient time was allocated to the Q & A session in order for participants to find solutions to their challenges. Also, depending on the class, some time was spent on discussion in which instructors and participants exchanged opinions. In the study tour, participants learned about Japan's various waste disposal technologies by actually observing a landfill site and efforts for recycling, and identified the tools to be adopted to improve waste management in their home country. In the entire course of this training, participants could recognize the necessity of cooperation and clarification of the roles of administration and the private sector, and consider what should be their first step toward reforming and improving the mindsets of residents. Moreover, participatory training,

such as a cleanup activity in the local community and a follow-up survey intended to improve the efficiency of the garbage collection routes, allowed participants to identify cooperative-type activities between local residents and the local government and come up with ideas for the activities. To establish an action plan for the improvement of waste management to be implemented by the participants themselves after returning to Peru, participants presented concrete measures according to their duties as feasible ideas after returning to Peru.

Participatory cleanup activity

As a part of residents' participatory activities, participants joined in the cleanup activity of Oyodo Beach in Meiwa-cho, Mie Prefecture on February 14 (Sun). That day, approximately 50 people, including local elementary school students and participants engaged in this activity. This cleanup activity was organized by Beach Clean, a group which was formed two years ago by seven local young persons and has continued to conduct voluntary cleanup activities. The representative of Beach Clean conveyed to the participants the wish of the group, saying "In addition to the continuance of our cleanup activities in the future, we hope to see the formation of other groups in other areas that engage in activities like ours." The participants did the best they could to pick up trash by hand on the beach and in the surrounding open spaces. From the comments from the participants, such as "Participating in the cleanup activity and interacting with local residents was a truly precious experience for me," we understood that they enjoyed the activity. The participants seemed to be deeply impressed with young people taking the lead in the environmental preservation effort and commented that they wished to engage in activities like that in cooperation with students after returning Peru. (Nagasaka)



Tour to the Yokkaichi City Southern Landfill Site



Participating in a cleanup activity



Interacting with local residents in the cleanup activity

Baotou Atmospheric Environmental Improvement Project, Inner Mongolia, China

Project Objectives

Baotou, the principle industrial center of Inner Mongolia, is planning ways to reduce the emission of atmospheric pollutants by constructing natural gas pipelines and converting from coal to natural gas energy. As a JICA yen credit project, ICETT conducted two weeks of training in order to help improve air quality and raise environmental and living standards of residence in Baotou.

Baotou, Inner Mongolia



The autonomous region of Inner Mongolia is situated in northern China along the border with Mongolia. The name Baotou comes from the Mongolian language and means “place with deer.” The Yellow River runs through the southern portion of Baotou, which is situated at the south edge of the Inner Mongolian Highlands. The average year-round temperature is 6.4°C, with annual rainfall of 310 mm. 27,768 km² in area, the city is rich in mineral resources. It has a population of 2,457,600 people composed of 31 ethnicities, including Mongolians, Han, and Hui.

Baotou is the biggest industrial city in Inner Mongolia and an important part of China’s industrial base.

Participants

Our participants were the president, two vice-presidents, accounting department head, and an executive assistant of the Baotou Gas Company Ltd.-five people in total. From their titles, one would imagine people well along in years, but in actuality, the participants who came to Japan were youthful and energetic, ranging in age from their mid-thirties to their early forties.



A lecture

Training Specifics

The participants studied the case of Yokkaichi city from the experience of the dealing with the pollution. They learned about the effectiveness of converting to natural gas as a fuel for improving air quality, as well as the damaging effects on residents’ health, consideration regarding the cost of Pollution control measures, and the necessity of instituting measures early on.

Then a discussion was held to allow the exchange of opinions between the participants and Japanese energy specialists and lecturers from gas company, regarding the gas supply business in their countries.

We learned that in China, they don’t install gas meters outside the house as we do it in Japan, and they install it inside the house often in the kitchen. So, it is inconvenient for measurement of gas amount.

Participants were taken on observational tours at Hokkaido Gas, Tokyo Gas, Toho Gas, Osaka Gas, and Ueno Gas in Iga, where they were able to receive explanations on a variety of important topics from each respective gas company.

Participants received explanations from Hokkaido Gas regarding the burying and maintenance of pipelines in cold regions, and from Tokyo Gas regarding gas companies' environmental efforts, while at Toho Gas, they were able to observe a natural gas filling station for automobiles and were introduced to Offshore gas pipe lines currently being built. At Osaka Gas, they learned about the opportunity that



Gas pipeline site

the Great Hanshin Earthquake provided for helping that company improve its earthquake-proofing measures, and the participants gained a new awareness of the importance of ensuring lifelines in the case of a disaster. Continuing onward, at Ueno Gas in Iga, the participants showed the most interest in learning about the construction of gas meters and gas utility billing systems, about which the participants had many questions.

Besides gas companies, the participants were introduced to maintenance methods and inspection and troubleshooting techniques for pipelines at JFE Engineering Corporation, and they were taken on a tour of the Chubu Electric Power Company's Kawagoe thermoelectric power station, which uses natural gas as its fuel.

In Kobe, they were given a tour of the Disaster Reduction and Human Renovation Institution, where they received instruction regarding the Great Hanshin Earthquake which would also apply to earthquake-prone China. They watched a re-enactment film, and, in the corner dedicated to "disaster reduction," or solutions for reducing casualties during unavoidable disasters, they had an opportunity to consider earthquake protection measures. The participants were greatly appreciative of this.

The Participants' Free Time

During the duration of training, Japanese language classes were held. The participants learned about the differences between Chinese and Japanese etiquette and transportation methods as well as studying the hiragana and learning basic conversational Japanese. The participants seemed to enjoy diving into Japanese, and walked around with their notebook-style textbooks, practicing their Japanese wherever they went. They also took their own notes regarding the Japanese they encountered and ended up compiling their own Japanese conversation handbook.

For dinner in Kobe, they went to the Nankinmachi area, where the participants were able to have a good time conversing with the staff at a Chinese restaurant in Chinese. However, the Chinese food in Nankinmachi was flavored to Japanese tastes and differed from how the participants liked it. Since it wasn't spicy enough, they added doubanjiang and cayenne peppers.



Nankinmachi, Kobe

Training Postscript

During a courtesy visit to JICA headquarters, the company president averred with determination that "when we return home, we will take advantage of our training here in our day-to-day work. We will endeavor to make our city a model for improving air quality." As a manager, I think those words hold a great deal of promise. (Kise)



JICA courtesy visit

Pilot demonstration project for Dissemination of Small Wind Turbines in the Republic of the Philippines

Outline

As a part of the “FY 2009 Program to Improve Trade and Investment Environments (pilot demonstration projects)” by the Japan External Trade Organization (JETRO), ICETT formed a consortium with Loopwing Co., Ltd. and implemented a “pilot demonstration project for the widespread use of small wind turbines” under the commission of JETRO in cooperation with the Philippine government and other people concerned.

Background and purpose

This project was launched in order to install Loopwing’s small wind turbines, which were invented in fiscal 2007 through a joint development under METI’s technology development promotion project, to demonstrate the effectiveness of the small wind turbines to the Philippine government and people involved in private enterprises, and to propose an appropriate system and implement promotional activities for that purpose.

The Philippine’s Department of Energy laid down an energy plan in May 2008 for the penetration of renewable energies. Aiming to enhance the self-sufficiency rate in energy and to resolve the constant electric power shortage, the development of renewable energy from wind power occupies an important place in the country’s national development plans. In particular, with the passing of the renewable energy bill in the Philippine Congress in May 2009, the legal framework for this field was established. With only a limited track record regarding small wind turbines in the Philippines, it is expected that a system for widespread use of the turbines will be established in the country. Compared to the regional infrastructure, which requires a large amount of funds, small wind turbines, which can contribute to the practical use of natural energy and lands, are considered very effective for the Philippines.

Project details and achievement

This project was launched in August 2009, and after several discussions and field studies with people related to the project, small wind turbines (with a power rating of 2 kW) were installed in three places in the National Capital Region (Manila metropolitan region) and Region IV (Calabarzon) in November. After the installation, the wind condition data was gathered and analyzed, and the future adaptability and operability of the turbine were demonstrated. Generated power, which will be used for illumination and bioreactors, is expected to contribute to a reduction in power consumption. In December, a promotional seminar was held at a hotel Metro Manila.



A small wind turbine installed on the roof of the Department of Science and Technology

Project Manager

Comment of Mr. Kazuo Kamimura (former Director of R & D Unit of ICETT)

This was a pilot demonstration project aimed at the widespread use of small wind turbines, an idea developed from the desire to make use of the technical expertise accumulated by ICETT for sustainable development in the Philippines. My heart was thrilled to learn that the result of a joint R & D project with private enterprises, which I was in charge of at ICETT using my expertise as an engineer, had materialized into actual business.



Also, ICETT has so far provided support mainly for the environmental and energy fields. I assume that many people may wonder why wind power generation should be developed in the Philippines. I have long regarded the Philippines as a very future-oriented country - English-speaking, located in Asia, and possessing latent potential - even from the perspective of new energy technology transfer. In particular, I was deeply impressed by the fact that the Philippines’ high officials - equivalent to Ministers, Vice Ministers and managers in Japan - took great interest in small wind turbines developed by ICETT, and have worked to advance this project. Above all, being blessed with opportunities to have direct discussions with them can be regarded not only as a personal honor but also as a benefit for ICETT.

Taking this opportunity, as an engineer I would like to continue my effort in some way to spread technologies demanded in developing countries, as a means of further promoting our support for other countries in cooperation with various relevant organizations.

This project ended with the participation of approximately 120 people from central government offices, local governments and private enterprises. However, this is not the end of our activities. We would also like to continue our analysis of the results of this project as well as our efforts to further spread small wind turbines not only in Philippines but also to other countries, using our experience in this pilot demonstration project. (Ohashi)

The Project on Invitation to Japan for Environmental Research (PIER) FY2010

PREFACE

The Aichi EXPO ended with great success in September 2005. To develop and hand down its basic philosophy of "bringing together and internationally exchanging the wisdom of the world to address global issues," ICETT has implemented the project that aims to invite excellent researchers in the environmental field from developing countries and regions, and to help them to bring back the knowledge and technologies they acquired in the research activities in this project. We entered to the forth year of the project and now, 1 researcher from Egypt and 2 from Pakistan are currently doing research in each lab.

RESEARCH OUTLINE in FY2010

Waste & Recycling Field

- Name: Mr. Ashraf (Arab Republic of Egypt)
- Research Title: "Attempt to develop a new chromium-recycling material serviceable to leather tanning industry"
- Supervisor & Laboratory: Prof. Kazuhiro HARA. Graduate School of Engineering (Research Institute of Environment for Sustainability), Kyushu University
- Activity outline: To extract the trivalent chromium from the process of tanning industry with effective way, then reuse it again in the process for Cleaner Production. As absorption medium, a kind of poly-hydrogel (acryl amide/ sodiumacrylate) are used by changing the molar concentration, then their effectiveness was tested. Another effective factor is immersion time. The best-mixed condition for Cr^{3+} capturing is on testing. De-sorption tests are also scheduled.



Water Field

- Name: Dr. Anjum (Islamic Republic of Pakistan)
- Research Title: Molecular genomics work on improving the potential of Phytoremediation for selected plants
- Supervisor & Laboratory: Prof. Tomonobu KUSANO. Graduate School of Life Sciences, Tohoku University
- Activity outline: For effective Phytoremediation of heavy metal (HM) contaminated water & soil, some HM resistant types are explored. In this research, Cd tolerant types are focused. In order to strengthen the function, effective genes were identified through experiments and their clones are isolated. In the next step, selected clones' characteristics are tested by Cd contaminated medium. If the result is good, the cloned genes are supposed to be used for further experiment.



Waste to Energy Field

- Name: Dr. Asma (Islamic Republic of Pakistan)
- Research Title: Genetic studies on improving the potential of microorganisms for bioethanol production from organic wastes
- Supervisor & Laboratory: Prof. Shuichi KARITA. Graduate School of Regional Innovation Studies, Mie University
- Activity outline: Targeting on lignocellulosic biomass for the source of bioethanol, sugarcane bagasse was selected. For the first step, genetic studies were done for effective hydrolysis of cellulose then one effective gene was selected. Researches are continued for high rate of ethanol production, and then some good yeast strains have been determined. (Minamikawa)



Seminars in Sihanoukville Province, the Kingdom of Cambodia and training of participants invited to Japan

Outline

ICETT has conducted an “Environmental Cooperation Program for Asia (ECPA)” for Sihanoukville Province, the Kingdom of Cambodia for two years since fiscal 2008. Over the two years, seminars in the province and a training program in Japan were conducted, and an environmental action plan was formulated from the basic environmental plan. The ECPA, which had been conducted since fiscal 1998 in six countries in Asia, ended with this year’s program.

Background

Sihanoukville Province, the Kingdom of Cambodia has achieved economic growth since around the beginning of 2000, focusing on manufacturing, trade and port industries. At the same time, the province, where various environmental problems are becoming obvious due to an increase in its population and infrastructural development following rapid economic growth, needs to accelerate its efforts toward environment countermeasures.

To solve this situation, the basic environmental plan was established in fiscal 2008, which was designed to reaffirm the province’s environmental problems and to clarify the ideal future environment to be targeted. Moreover, an environmental action program was established to implement concrete actions in fiscal 2009. The basic environmental plan and environmental action program were established through discussions mainly by the province’s administrators and with the participation of representatives from relevant provincial bodies and the national government as well as local residents.

Training program in Japan in fiscal 2009

Based on the basic environmental plan established in fiscal 2008, the environmental action plan was created in fiscal 2009 for concrete implementation. At the start, officials of the provincial government and workers of the relevant bodies in the province were invited to Japan for about 20 days of training starting from the end of August. In the training, concrete plans for the program were made, throwing light on issues to be dealt with in the province such as waste and sewerage water problems and the conservation of natural resources as priorities.



Training in Japan in August

Seminars in Sihanoukville Province in fiscal 2009

In December, actual implementers of the program, such as officials of the provincial government as well as people involved in education and companies, identified further problems through discussions on the plans for the program.



Group discussion in Sihanoukville Province in December

To close the ECPA in fiscal 2009, a general seminar was held in the province in March. The general seminar was held to announce the plans established through discussions for the environmental action plan and to complete them by asking for the final opinions of the participants. In this seminar, we were able to confirm that the participants certainly enhanced their awareness of the environment through their participation in this ECPA by forming their opinions from acute perspectives, which had not previously been explored. Such opinions included “When implementing the environmental action plan, which department will be in charge of which project should be clarified in the environmental action plan” and “Risks in implementing the program should be taken into consideration.” The concrete plans for the program, which were established in this seminar, will be implemented with the approval of the provincial governor under a detailed schedule. (Matsuoka)

Exhibiting at the Yokkaichi Bazaar 2010



The 19th Yokkaichi Bazaar was held for two days on April 3 (Sat) and 4 (Sun) in 2010. Even though slightly chilly weather returned during the cherry blossom season, many people, including residents of Yokkaichi City, enjoyed the Bazaar under cherry blossoms nearly in full bloom. More than 500 people who visited ICETT’s booth were able to handle rare souvenir products from around the world and watch a video of ICETT’s activities. Visiting children tried to solve environmental quizzes. Visitors to the Bazaar included Chinese and American residents of Yokkaichi City, and everyone learned about the activities of ICETT. (Sonobe)

Public Awareness Seminar and Technical Guidance in Ha Dong District, the capital city of Ha Noi, Vietnam

Outline

This project was launched in fiscal 2007. In December fiscal 2009, the Public Awareness Seminar and Technical Guidance was held in Ha Dong District, in the capital city of Ha Noi, Vietnam.

Background & purpose of the project

Commissioned by Mie Prefecture, ICETT has conducted the "Environmental Cooperation Program for Asia (hereinafter "ECPA")" since fiscal 1998, designed to support local governments in Asia and aimed at establishing environmental preservation and constructing environmental preservation program. Since fiscal 2007, ICETT has implemented the "International Cooperation Network Building Project," which aims to build international cooperation networks through public awareness seminars in the City of Tagaytay, Philippines and Probolinggo City, Indonesia, former locations in which the ECPA was implemented.

In this International Cooperation Network Building Project, a field survey was conducted in order to understand the (social) environmental status of Ha Dong City, Vietnam (present day Ha Dong District in Ha Noi), where the ECPA was implemented, and the progress status of after the ECPA's International Cooperation Network Building Project. Also, a Public Awareness Seminar was held to strengthen the human network that ICETT has built through its former trainees, and to further activate exchanges with Mie Prefecture.

Outline of the seminar

On December 2, 2009, a seminar was held at the Ministry of Defense's lodging training facility (MOD Palace) in the capital city of Ha Noi.

In the seminar, after the introduction of the past efforts of ICETT, the importance of environmental measures by small- and medium-sized business establishments was explained by introducing efforts in Japan. Under the recognition that it is important to address environmental preservation from the issues around us, Ryoza Naito, ICETT's Director of Training Unit and Katsuhiko Yamamoto, Senior of Yokkaichi Agriculture, Forestry, Commerce, Industry and Environment Office, Mie Prefecture gave lectures titled "Environmental Education in Japan" and "Assist for Waste & Water Treatment Problems", respectively.

As for participants from Vietnam, after the presentation titled the "ECPA's Outcome and Challenges in Ha Dong" by Thi Kim Son, Vice Director of Environmental and Resource Department of Ha Dong City who engaged in the ECPA, Nguyen Thi Lam Giang, a specialist from the Ministry of Industry and Trade of Vietnam, Director Tran Van Nhan of the Vietnam Cleaner Production (CP) Center, and Vice Manager Nguyen Canh Dung of the Institute for Industry Policy and Strategy (IPSI), Vietnam presented their reports titled "Sustainable Development of Small and Medium-sized Businesses in the Capital City of Ha Noi," "CP (Cleaner Production) in Vietnam" and "Environmental Measures in Handy Craft Villages," respectively.

The seminar was participated in by 70 people, including officials from the Ha Dong District Government, the district in which ICETT implemented the ECPA; the People's Committee of Ha Dong District; traders and manufacturers in the district; as well as administrators from Ha Noi City Government in Vietnam, the Ministry of Industry and Trade of Vietnam & Institute for Industry Policy and Strategy (Vietnam), the

Ministry of Trade and Industry of Vietnam, and related Ministries and corporate engineers.



A group shot of seminar participants

Project evaluations

This seminar was held to strengthen the human networks established by Mie Prefecture, ICETT, and the Ha Noi City and Ha Dong District Governments in Vietnam, as well as to introduce the environmental preservation activities of Mie Prefecture. Favorable evaluations in the questionnaire after the seminar are introduced as follow:

Seminar details: 88%, Training: 93%

Teaching materials used in the seminar: 93%

Technical guidance/survey after the seminar

On December 3, the technical guidance & survey was conducted to understand the actual status of environmental education by taking a tour of Nguyen Trai Elementary School, a model school of environmental education. Moreover, the participants visited an Assembly hall of Quan Lan Village, Phu Lam Region and the handy craft village in Ha Dong District to understand the actual situation and provided technical guidance on waste water treatment for small and medium sized employer in the handy craft village.

Future development

The seminar ended with great success, and was, by and large, considered to be favorably regarded. Also, for the question "Would you like to cooperate with ICETT in the future" 67% of the participants expressed their willingness to cooperate with ICETT. In the future, we would like to actively share information with the relevant people, while encouraging the self-help of Ha Dong District, which cooperated with us in these activities. (Sugino and Mashita)



Technical guidance in the handy craft village

Toward Building a Lasting Relationship of Cooperation

— Hosting Seminars in Malaysia and Thailand —

■ Introduction

ICETT was commissioned by the Prefecture of Mie to implement a project to build an international cooperation network. This project took advantage of networks ICETT had already developed and aimed to create an enduring network of wide-ranging cooperative relationships, including an economic relationship between Mie and Asian cities where we already had an environmental foothold.

■ Seminars in Malaysia and Thailand

This fiscal year's project involved hosting environment-related seminars in Malaysia and Thailand. Both countries have strong economic ties to Japan, and we hope for new development in the future.



A seminar in Malaysia

The topic of the Malaysian seminar was "E-Waste." We invited a specialist from Mie Brother Seiki Co., Ltd. to come from Japan and introduce his own company's efforts. The topic of the Thai seminar was "Biomass". These topics were chosen by examining the situation in each country and consulting with our local counterparts. However, these themes were chosen not just as a result of our understanding of local present socio-environmental situation, but also according to the conditions needed to achieve successful international cooperation.

■ Local Familiarization

Familiarizing oneself with a place doesn't end with knowing mere systematic or statistical data. One needs to understand the lifestyle and culture of the local people — their style of dress, food, and homes.

For example, in Malaysia, the majority of people are Malays, Indians, and Chinese, but the sausage served in the breakfast buffet at the hotel where the seminar was held was chicken sausage. There was no pork bacon. This was probably out of concern for the Malays, who are Muslim. In addition, the local Malaysian interpreter we hired refused to eat Chinese food. Often, we would go to a restaurant hoping to have a beer, only to find that many restaurants do not serve alcohol.

And then there are things like national traits and temperaments. At a regular seminar, it would be normal to start with general information and move on to more detailed

discussion. That way, the topic could be explored in a methodical manner, leading to a deeper understanding.

However, there are some countries where the custom is to give an outline of the entire seminar's contents at the beginning. In such countries, it is normal for people to judge the entire seminar by its introduction and, deciding that the seminar will be of little personal interest, to leave the seminar hall. I think that this tendency is strong in Malaysia. Had we known this beforehand, we could have changed the order of presentation in order to accommodate this.

■ What Is Needed for an Enduring Cooperative Relationship

I have already touched on the need for local familiarization in order to build an enduring cooperative relationship. If I think about what else is required, that something else might be continuity.

This time around, we hosted seminars in two countries, Malaysia and Thailand. However, this is basically just a one-year project. If we consider what we would need in the future to maintain a network with these two countries and to develop an enduring cooperative relationship, we would need, for example, to send a specialist to a local seminar every year. To recruit participating companies at local exhibitions, we would need to exhibit every year. Our local human networks can expand through that kind of local continuity. If we did that, wouldn't an enduring cooperative relationship between these places and Mie Prefecture form naturally? Those are the issues that have occupied my thoughts since we held this year's seminars. (Sugino)

Postscript: A Glimpse of Southeast Asian Food

In Japan, food stalls are a place where you grab a quick drink in the evening. However, in Southeast Asia, eating out is commonplace from breakfast onward, and there are food stalls everywhere. Stalls selling cooking ingredients open up and down the street in the morning. I think this has something to do with the liveliness of Southeast Asia. If you have the chance to visit Southeast Asia, why not try having breakfast on the street instead of at the hotel? It seems to me this would be one good way to get to know the place.



For breakfast today, I'm definitely having some of this! I'm starving!

The Thirtieth Anniversary of the Friendship City Affiliation between Yokkaichi and Tianjin — The Tianjin Environmental Protection Seminar (on Preventing Soil Contamination)

Outline

The Tianjin Environmental Protection Seminar began in fiscal 2001 to improve the environmental administration capabilities of the city of Tianjin, a friendship city of Yokkaichi's, in the People's Republic of China. The seminar is held to explore themes such as preventing air pollution and water contamination. In China, a country that has experienced remarkable industrial development, soil contamination is a problem, and taking measures to solving it has become a pressing issue. In fiscal 2010, China considered incorporating "soil contamination reform" into its twelfth five-year plan and hosted a seminar in Tianjin on the subject of preventing soil contamination.

This fiscal year marked the thirtieth anniversary of the friendship city affiliation between Yokkaichi and Tianjin. As part of his official visit to commemorate this anniversary, the mayor of Yokkaichi participated in this seminar.



Official introduction by the director of the Tianjin Environmental Protection Bureau



Enthusiastic attendance by participants

The Tianjin Environmental Protection Seminar was held for three days, from October 27 to 29, 2010, on the topic of "preventing soil contamination," taking place in Tianjin and sponsored by Yokkaichi.

The city of Tianjin is located in northeastern China and is one of the country's four direct-controlled municipalities (equivalent to a province or autonomous region) along with Beijing, Shanghai, and Chongqing. Tianjin has experienced continuous annual growth rates of over 10% for several years, and at the same time has focused efforts on environmental conservation, so that in 2006, it was designated National Model Cities at Environmental Protection.

In this midst of this, there has been a pressing need in recent years to deal with soil contamination, both in Tianjin and in China, and the Central Committee of the Communist Party plans to add "soil contamination reform" to its twelfth five-year plan in 2011.

Every year since 2001, ICETT has implemented the Tianjin Environmental Protection Seminar as a project sponsored by the

City of Yokkaichi. This year, against the backdrop of these circumstances, we hosted a seminar on the topic of "preventing soil contamination" at the multipurpose hall at the Tianjin Environmental Protection Bureau, and 56 employees of the government and companies involved in environmental efforts participated.

2010 marked the thirtieth anniversary of The friendship city affiliation between Yokkaichi and Tianjin (established October 28, 1980). Our seminar began with Yokkaichi mayor Toshiyuki Tanaka and Yokkaichi City Council chairman Shinji Nakamori, who were on an official visit, in attendance, while on the Tianjin side, Li Yali, vice-chairman of the Tianjin Municipal People's Congress, and Yan Dingzhong, director of the Tianjin Environmental Protection Bureau, were in attendance.

At the seminar, lectures and question-and-answer sessions were held regarding the state of soil contamination prevention efforts in Tianjin, steps taken by Japan against soil contamination, the state of soil contamination in Japan as well as contamination study and assessment methods, and restoration techniques and measures taken with regard to soil contamination in Japan. There were so many questions that we ran out of time.

The main questions raised were "what methods are effective for dealing with cadmium and mercury contamination," "what do you do to monitor the soil," "how do you go about preparing to introduce contaminated soil processing equipment to China," and "what methods for dealing with soil contamination are available that don't require too much time or money." A great deal of discussion took place for each question, demonstrating the high level of interest in soil contamination reform at the seminar.

It is our prayer that we can use the opportunity afforded by this seminar to promote measures against soil contamination in Tianjin. (Fukushima)



A lecture given by a Yokkaichi city employee

Tianjin Environmental Protection Seminar Themes

- (1) 2001: Environmental Management Systems
- (2) 2002: Techniques for Preventing Air Pollution
- (3) 2003: Toward Creating a Recycling-Oriented Society and a Sustainable City
- (4) 2004: Promoting and Spreading Environmental Education
- (5) 2005: Industrial Wastewater Management and Techniques for Preventing Water Contamination
- (6) 2006: Household Wastewater Treatment Policies and Effectively Utilizing Treated Water
- (7) 2007: Steps to Maintaining Water Quality in Enclosed Water Areas (Water Quality Volume Regulations)
- (8) 2008: Management Steps for Reducing SO₂
- (9) 2009: Steps for Preventing NO_x Pollution
- (10) 2010: Preventing Soil Contamination

Seminar Topics

A ceremony to celebrate the thirtieth anniversary of the friendship city affiliation between Yokkaichi and Tianjin was held on the evening of October 28 at the Tianjin State Guesthouse, and many employees of the Tianjin Environmental Protection Bureau were invited. Most of them had received lectures from ICETT on environmental-related human resources training*, and we were pleasantly welcomed. We could sense once more the depth of the environmental dialogue between Yokkaichi and Tianjin.

*From 1993 onward, ICETT has been commissioned by the City of Yokkaichi to accept participants for Tianjin's human resources training. In 2010, our fifteenth year doing this, we have a total of 101 participants.



Commemoration ceremony introduction by the mayor of Tianjin

ICETT exhibited at the Interactive Fair for Biodiversity (COP 10).

We had our own exhibitors' booth at the Expo Zone in the Shiratori Park in Nagoya for one week, from October 23 to 29.

Our booth location was at the edge of the zone, so we were worried about how many visitors we would get, but an estimated 1,000 visitors or so came by. On the opening day of the 23rd in particular, our questionnaire response alone came to 300 people because of the nice weather. Over the course of that week, more than 800 people responded to our questionnaire.

The feel we got from exhibition visitors was that few people came with their families, and a lot of the visitors were elderly. As might be expected, compared to other events, we had lots of environmental specialists and students studying in environment-related fields. Foreign visitors also seemed interested.

Overall, we were impressed at how many people were greatly interested in the environment, listened intently to the explanations given by our group, and also listened with

interest to our explanation regarding our novelty items (paper eco-chopsticks).

In addition, we were also asked various questions by people interested in the activities of our group, and we received words of encouragement. That week really made me feel the importance of continuing to participate in these kinds of exhibitions and events, and conducting activities to share information and educate. (Onuma)



The ICETT Booth