

Major Symposia and Seminars

1. 30th Symposium on Agro-Environmental Science, “How Can Greenhouse Gas Emissions Be Reduced? — Measures to Combat Global Warming in Agriculture, Forestry, and Fisheries”

On Wednesday, May 14, 2008 we held the 30th Symposium on Agro-Environmental Science with the theme “How Can Greenhouse Gas Emissions Be Reduced? — Measures to Combat Global Warming in Agriculture, Forestry, and Fisheries” at the Shinjuku Meiji-Yasuda Life Hall in Tokyo. The previous year the Intergovernmental Panel on Climate Change (IPCC) had released its Fourth Assessment Report, which says that the increase in greenhouse gases due to human activities is unequivocally causing global warming. And 2008 was the first year of the first commitment period under the Kyoto Protocol, whose aim is to reduce greenhouse gas emissions. Japan’s target for this period is to reduce its emissions 6% from the 1990 level, but as of 2006 Japan’s emissions had instead increased 6.4%. Against this backdrop, the symposium attempted to promote broad public understanding among the public about what measures could conceivably be taken in agriculture, forestry, and fisheries. We had the participation of 294 people from outside NIAES including the general public, people in public administration, the private sector, universities, public institutions, and other research institutes, and 34 NIAES people, for a total of 328.

NIAES President Yohei Sato kicked off the symposium with his welcoming remarks, which were followed by a keynote speech titled “Expectations for Global Warming Mitigation by Agriculture and Forestry” by Prof. Ryusuke Hatano of Hokkaido University. Lectures began with a report by Moriyoshi Ishizuka, research coordinator at the Forestry and Forest Products Research Institute, on the carbon cycle in the forest sector, the Kyoto Protocol’s method of calculating carbon dioxide uptake amount, and initiatives aimed at increasing the carbon sequestration capacity of forests. This was followed by lectures on the agriculture sector, first by Yasuhito Shirato, chief researcher of the Natural Resources Inventory Center, who said that while the ability of farmland soil to store carbon is larger than the abilities of vegetation and the atmosphere, it requires the appropriate application of organic material. Next, Senior Researcher Kazuyuki Yagi of the Carbon and Nutrient Cycles Division used specific experimental results to describe effective techniques for managing organic matter, water, fertilization, and other factors to limit

emissions of carbon dioxide, methane, and nitrous oxide from farmland. In the livestock sector, Chief Researcher Takashi Osada of the National Institute of Livestock and Grassland Science described the latest measures for reducing the methane and nitrous oxide emitted from livestock enteric fermentation and waste, and stated that it is not easy to reduce nitrous oxide in the process of managing livestock waste. Finally, Shusaku Katayama, director of the Biomass Research Center at the National Agriculture and Food Research Organization, delivered a report on biomass energy, which people hope will replace the fossil fuels that are the main cause of global warming, covering areas including types of biomass, conversion methods, and efficiency.

In response to these lectures, there were questions from the floor on subjects including the tradeoff between carbon accumulation by accumulation in forest soil and by applying organic matter to farmland on the one hand and the generation of greenhouse gases on the other hand, the impacts of using chemical fertilizers, and the possibility of participation by agriculture in emissions trading. It was also observed that, whatever problem we are dealing with, from now on it will be essential to perform LCAs when considering the introduction of future technologies.

Questionnaires given to participants elicited 141 responses, many of which made favorable remarks such as “The content was substantial” and “It was easy to understand even for a non-specialist.” Together with the symposium on global warming adaptation strategies held last December, we have expectations as the sponsor that participants’ interest in and understanding of global warming have increased, even if only by a small measure.



Hokkaido University Prof. Ryusuke Hatano delivering the keynote speech

2. Research Presentation 2008, “Linking the Safety of Agriculture and the Environment to the Future”

On November 28, 2008 we held the above research presentation at Shinjuku Meiji Yasuda Seimei Hall in Tokyo. Such presentations have been held every two years since NIAES became an independent administrative institution, and this one was the fourth. There were 207 participants including 42 from the general public and 91 from the private sector and organizations.

After opening remarks from NIAES President Yohei Sato and from Research and Development Officer Takeshi Arai of the Agriculture, Forestry and Fisheries Research Council Secretariat, Professor Tetsukazu Yahara of Kyushu University Graduate School delivered a special lecture titled “Biodiversity Conservation and Our Future.” He first described the state of biodiversity loss in Japan and around the world, and then used the biodiversity conservation project conducted when the Kyushu University campus relocated as an example to show the possibilities for reconciling conservation with development, and raised questions about issues such as the role of science in doing so, and the importance of values in building a future vision. Next came presentations on NIAES research: The impact of global warming on rice yields (Agro-Meteorology Division, Masayuki Yokozawa), an “Historical Agro-Environmental Browsing System” enabling comparison of maps of agricultural use in the Kanto region 120 years ago and at present (Ecosystem Informatics Division, Nobusuke Iwasaki), impacts on Japan’s natural environment by the spread of exotic plants (Biodiversity Division, Hiroaki Ikeda), the discovery and use of molds which live on plant leaf surfaces and can decompose biodegradable plastic (Environmental Biofunction Division, Hiroko Kitamoto), and soil environment remediation using the power of plants (Organochemicals Division, Takashi Otani). There were many questions and opinions, and there was animated discussion on topics such as introducing economic principles into *satoyama* conservation and the problem of exotic plants on farmland.

A ceremony was held during the break period to present three young NIAES researchers with encouragement awards. Each researcher received an award certificate and a supplementary prize (see page 10 for details). Posters on display in the lobby described 18 research challenges, including those of the awarded researchers.

For detailed information on the lectures, see National Institute for Agro-Environmental Sciences,

Research Presentation 2008, Lecture Summaries (<http://www.niaes.affrc.go.jp/sinfo/sympo/h20/1128/proceeding.html>).

3. Open Seminar on Agro-Environmental Technology in Fukushima

The “Open Seminar on Agro-Environmental Technology in Fukushima” was held at the Fukushima Agricultural Technology Centre (Fukushima Prefecture, Koriyama City) on Thursday, September 18, 2008, jointly sponsored by the National Institute for Agro-Environmental Sciences (NIAES) and the Fukushima Agricultural Technology Centre. The purpose of these open seminars is to expand the relationships of collaboration, interchange, and cooperation between NIAES and prefectures and municipalities. On this occasion about 100 people attended, including officials from Fukushima Prefecture and municipalities, people in agriculture, and members of the public.

Lectures and posters at the seminar described the achievements of the most recent research on agro-environmental problems. Lectures delivered by NIAES researchers in the multipurpose hall covered several subjects: “Impacts of Global Warming on Crop Production” (Mayumi Yoshimoto), “Exotic Plants and Agricultural Ecosystems: Functions and Uses of Allelopathy” (Yoshiharu Fujii), and “The Quest for Safer Soil Disinfection Methods” (Yuso Kobara). In addition, Fukushima Agricultural Technology Centre personnel described their research on “Managing Water to Reduce the Generation of Methane by Rice Paddies” (Takashi Saito, Assistant-Chief Researcher, Agro-environment Department) and “Expanding Fukushima-Style Organic Cultivation” (Kazuo Ozawa, Director, Organic Farming Promotion Office).

In the research presentation room adjoining the multipurpose hall there was a poster display in which the National Institute for Agro-Environmental Sciences and the Fukushima Agricultural Technology Centre presented their representative research for 2007. In the lecture and poster display venues, participants engaged in enthusiastic discussion on the lectures and presentations.

4. MARCO Workshop, “A New Soil Information System Initiative for Natural Resource Management in Asia”

Soil Information System (SIS) not only provides soil information for crop production but also provides information of value for environmental impact

assessments, environmental conservation, and solving problems related to wildlife habitat, global warming, and energy. In the United States and Europe, SIS use is encouraged in particular from an environmental perspective; however, in Asia, it is limited to SIS development and use in a handful of countries mainly for digitizing soil maps and databasing soil data.

On October 14 and 15, we held a workshop at the Tsukuba International Congress Center to discuss building a common SIS platform for East and Southeast Asia and to share information with researchers in Western countries, East Asia, and Southeast Asia on the research and development of SIS use for crop production and environmental conservation, and its dissemination in production venues. The workshop was co-hosted by the Food and Fertilizer Technology Center for the Asian and Pacific Region (FFTC), and sponsored by entities including the Ministry of Agriculture, Forestry and Fisheries Agricultural Production Bureau.

There were 14 speakers hailing from the United States, Korea, Taiwan, the Philippines, Vietnam, Thailand, Malaysia, and Japan, and there were 11 poster presentations. The workshop had 81 participants from Japan and abroad.

Lectures and poster sessions covered subjects including various countries' soil classification systems, the state of soil maps and soil data compilation, application of soil data to land productivity assessments and environmental assessments, and the state of public access to methods applying models to forecast soil characteristics, and access to soil information systems. Speakers reported on the problems in each of these subject areas and how they will be addressed. The general discussion covered matters associated with building an Asian soil information system, including purpose, the soil classification system, reduction scale, format, and a review of the items included and the analysis methods.

MARCO stands for Monsoon Asia Agro-Environmental Research Consortium, which is an organization created by the National Institute for Agro-Environmental Sciences in 2006 for the advancement of agro-environmental research in Asia. MARCO's activities include information exchange, such as by holding international symposia, and technology transfer, such as by publication on websites and by inviting and sending researchers.

