

## **Rappoteur's Summary**

**T. Tschang**

## **Rappoteur's Report on Session VIII- How to Increase Future Collaborative IAM Research in the Asian-Pacific Region**

**Rappoteur: Dr. Ted Tschang, UNU/ Institute of Advanced Studies**

This session focused on the types of research and training networks that developed and developing countries collaborated on, in the development and application of integrated assessment models and other related research.

Dr. Nishioka discussed a number of initiatives relating to environmental collaboration in the Asia-Pacific region, with particular attention on some by the Government of Japan's Environment Agency. These fostered collaborative research and policy-making in the Asia-Pacific region, and used integrated assessment (IA) research in doing so. He noted some characteristics of the Asia-Pacific region, including the experience of rapid growth, and many environmental problems, including some of a global nature.

Two initiatives that furthered international and regional environmental collaboration were the Asia-Pacific Network for Global Change (APN) and the Eco-Asia Project. The APN was a collaborative regional research network which was linked with other scientific networks worldwide (and disseminated regional information worldwide), and which acted as a forum for communication amongst governments in the region. Eco-Asia is an annual congress of environment ministers in the Asia-Pacific region, involving thirteen countries and five international organizations. Japan had proposed a long-term project in 1993 that introduced environmental issues (as part of sustainable development). Participants at the Congress also decided to develop the basic concept of an Asia-Pacific "Eco-Consciousness", involving lifestyles consistent with reduced environmental damage.

Other activities which the Government of Japan was also involved in included the UN Environment Program's (UNEP) Global Environmental Outlook (GEO) Initiative, the APEC Asia Pacific Energy Research Centre (APEREC), the Asia-Pacific Climate Change Seminar Series, various country studies, and joint implementation projects.

Many of these activities were supported by integrated assessment models (IAMs). For instance, some of the Eco-Asia congresses' activities used integrated assessment, specifically, the Asia-Pacific Integrated Model's (AIM) results. The AIM was used to make projections for various indices, including regional population. As such, AIM could be used to set targets, and eventually to promote Eco-Consciousness. Other uses of AIM included use in the UNEP Global Environmental Outlook initiative, the assessment of the effectiveness of Activities Implemented Jointly (AIJ) [also known as Joint Implementation activities], and country studies. Some regional networks such as the APN also sought to promote capacity building for implementing IAMs.

The Environment Agency also conducted collaborative research in the Asia-Pacific region. Capacity building activities were conducted to transfer IAM tools and skills to the developing countries in the region. The effort also ensured that developing countries could develop their own methods and data. The cooperative activities included research and training done within developing countries, the "Eco-Frontier" fellows program which invited researchers from developing countries, and the fostering of close connections with institutes within the region as well as outside of it. In transferring IAMs to developing countries, it is vital to collaboratively adapt them to the countries' particular situations and variations in geography, culture and other aspects. Furthermore, in planning research, an integrated approach is necessary, basing it on the characteristics of the IAMs themselves.

Dr. Sathaye said at the outset that he did not feel that a "U.S. network" existed, hence it was not appropriate to talk of it. Instead, he discussed three programmes that involved a variety of country-level studies: the U.S. Country Studies Program, the UN Development Program/Asian Development Bank's Asia Least Cost GHG Abatement Project (ALGAS), and the UN Environment Program's program on greenhouse gas (GHG) limitations. In general, he noted that country studies could help experts from developing countries to make GHG inventories, formulate mitigation strategies, assess their vulnerability, and adapt to climate-induced impacts.

The U.S. Country Studies program cost approximately U.S. \$35 million and involved fifty-six countries. Some associated activities in joint implementation were also carried out in association with this program. The program was managed and financed by ten U.S. government agencies. It involved technical assessment and training, and assisted experts from developing countries with making GHG inventories, developing mitigation strategies, and assessing their vulnerability. These activities also provided support for the National Action Plans. The process included the establishment of a joint research agenda together with experts from developing countries, the assessment of the appropriate methodologies, the development of any needed methodologies, the transfer of tools (through training) and the holding of results workshops. The effort relied on a mixture of U.S. National Laboratories, universities and private consulting firms.

Dr. Sathaye also discussed the UNDP/ADB ALGAS program, consisting of ten countries, and the UNEP program, consisting of seven countries. Both were considerably smaller in scope and funding than the U.S. Country Studies program. The ALGAS program outputs included country inventories, regional databases and a thematic support group, while the UNEP program was designed to further methodologies rather than projects.

Dr. Sathaye ended by discussing the lessons learned from these three programmes, namely, that training and technical assistance were consistently underestimated, even for straightforward models, and that the cooperation of many institutions was a challenge. Furthermore, models that were transferred as parts of the programmes had to be appropriate to the country's skill for adapting and using them. Because of this variation across countries, a mix of models had to be promoted. The best work was accomplished when countries were allowed to develop their own models.

Dr. Langeweg began by noting that he wanted to address an issue quite separate from networks, but which he saw as an important driving force for climate change research. He noted that climate change was only part of the broader issue of global change, and that it was necessary to look at other issues that could overwhelm the climate change aspects. In particular, he felt that there was a need to promote new details, particularly on socio-economic phenomena, and that the focus on natural sciences was much too large. The propensity of climate change scientists to focus on the natural sciences was not important in a political sense, and was not helpful to policy-makers.

Dr. Langeweg stressed the need to simplify models, to make assumptions transparent, and to regionalize models (i.e., to make them more specific to countries or regions within them). Many countries needed to use models, hence models were not an artifact simply for the developed countries' sole use. Socio-economic analysis needed to be added to the existing models. However, the purpose of the models had to be defined, and the appropriate model had to be chosen to address the indicators of interest. For instance, whilst computable general equilibrium (CGE) (economic) models could be used to determine parameters such as investment, decision-making was more complicated than the models alone can handle.

Dr. Langeweg also noted that different patterns of development existed within the developing countries. East and SE Asia are different from the European situation, having higher savings rates, collective decision-making and a higher degree of government intervention. Given these variations, developing countries need to be able to develop their own model systems, and those countries will have to rely on their own experts for the decision-making process. For instance, China should be able to judge the results for itself. Scientific models should be developed as a first stage. The general (climate) circulation models should be developed as the first stage of this, followed by regional climate models, and greenhouse gas emissions scenarios. The assessment of economic impacts should be made using IAMs as well as the IA framework.

(Comment)

Dr. Zhou (China) also noted that regional and global networks are needed to transfer the methodologies, exchange data and results. These networks are more important than any specific work tasks. In order to accomplish this, financial support from the international community will be needed. The Global Environment Facility should pay attention to this.

(Discussant)

Dr. Mitra discussed some of the networks and activities in the South Asian region. According to data collected within the region, the region had approximately one fourth the world's population, but only one thirtieth the carbon dioxide emissions and one fifteenth the methane emissions. However, the emissions numbers being used internationally were higher than these regionally-collected numbers, and needed to be corrected to reflect the latter. This made it important for developing countries to make their own estimates with their own data and their own monitoring. Different countries in the region would also be concerned with different impacts, such as rainfall and typhoons.

The data available in the region varied from being very good for meteorological data to good ozone data, as well as good satellite and remote sensing data. Regional data collection facilities also existed, as well as a good database.

(Discussant)

Mr. Sugandhy discussed the availability of data and the model development experience in Indonesia. Developing countries needed to strengthen capacity at the national level, and needed to give a more national focus to models at the global and regional level. As an example of this, Indonesian experts have been working with the Government of Japan's National Institute for Environmental Studies. Mr. Sugandhy also stressed the importance of socio-economic considerations, and said that there was a need to focus IAMs on conditions specific to different countries. He recommended expanding existing IAM development, bringing in regional bodies and national level organizations, such as the Asia-Pacific Network and the governments of various countries, including the U.S., Japan, and Norway. He said that various forms of information needed to be exchanged and that there was a need for funds, perhaps in the form of GEF funds.

(Comment)

Dr. Luiz Bevilacqua (Brazil) commented on the question raised by Dr. Sathaye, on whether developing countries should develop their own models. He was very much in favor of Dr. Zhou's statement, that developing countries' efforts at developing their own models should not be displaced by international collaborations. The developing countries should be stimulated to develop their own models, not only for the sake of building their own knowledge, but also as the best way to use and interpret other peoples' models. He also wondered whether an international forum existed for determining benchmarks that could check the performance of different models.

(Comment)

Dr. Anand Patwardhan (India) commented that there was a need to move from IAMs to integrated assessment itself, and that broadening the notion would also have the benefit of increasing the linkages and communications with the policy community. He also said that there was a need to focus on broadening the disciplinary base. Many of the key research issues in IA and IAMs require contributions from disciplines that have traditionally been a part of the community; anthropology, development economics and social psychology are obvious examples.

He also felt that the presentations in this workshop had conclusively demonstrated the limitations of IAMs, and that IAMs were better suited to be research tools rather than policy tools. As a result, in terms of capacity building, we could be better off promoting research collaborations rather than conventional training programs.