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## Message from the Director



The year 2005 was a significant period in the APN's history. It allowed us to take stock of our achievements over the past ten years, while setting our sights towards new opportunities and challenges as we enter a new phase.

We started 2005 by co-organizing, with the WHO Kobe Centre, an international public forum on climate calamities and human health on the occasion of the World Conference on Disaster Reduction (WCDR) held in Kobe, Japan from 18-22 January 2005. It was a resounding success, with a large turnout of participants from the local community, WCDR delegates, scientific experts, policy-makers and the media.

The second quarter saw us all gathered in Kobe once again for our 10<sup>th</sup> Inter-Governmental and Scientific Planning Group Meetings (IGM/SPG) from 12-14 April 2005. It was not just any IGM/SPG meeting; it marked our 10<sup>th</sup> anniversary as a network, formally concluding the first decade of our fruitful partnerships. On that momentous occasion, we adopted our Second Strategic Plan for 2005-2010, which was based on inputs from stakeholders and the Evaluation Report of the APN's Phase I activities (1996 to 2004). The 2<sup>nd</sup> Strategic Plan (or 2SP) now guides us as we move forward till 2010.

Before the year ended, the APN sponsored and co-organized with the Ministry of the Environment of Japan (MOEJ) and the National Institute for Environmental Studies (NIES) an international scoping workshop on global earth observations and the capacity building needs of the Asia-Pacific region, particularly with regard to climate issues, from 17-18 November. The pioneering workshop was conducted in support of and response to the GEOSS 10-year Implementation Plan, which was adopted in the Global Observation Summit in early 2005. Among other issues, the 32 scientific experts from around the world expressed strong concerns

about the adaptability of countries to climate change. The APN is currently preparing for a follow-up workshop in March 2006 in Bangkok, Thailand with the support of the U.S. National Science Foundation (NSF) and the Ministry of Natural Resources and Environment of Thailand.

Back-to-back with the GEOSS workshop, we also had the 3<sup>rd</sup> CAPaBLE Standing Committee Meeting and the 2<sup>nd</sup> 2SP Steering Committee Meeting in Tokyo, Japan, where we discussed, among others, progress of actions taken so far in implementing the 2<sup>nd</sup> Strategic Plan. During these meetings, it was also confirmed that the IGM, SC and SPG meetings, and the GEOSS 2<sup>nd</sup> Workshop will be held from 19-24 March 2006, in Bangkok, Thailand.

In the middle of all these activities, the APN Secretariat underwent major staffing changes. I began at the APN Secretariat, as Director, as well as a new Programme Manager for Communications and Development (Jody Chambers), a new Administrative Manager (Ryoichi Gotou), a new Administrative Assistant (Nao Horiguchi) and a new Programme Fellow (Maricel Tapia).

Our concerted efforts and dedication in 2005 have brought international recognition for the APN as a credible and productive global change network in the Asia-Pacific region. In May 2005, at the SBSTA 22 meeting of the UNFCCC, the U.S. called for continuous support of international programs such as the APN. In July 2005, at the Gleneagles G8 Summit in Scotland, the APN was cited in the Japan's Climate Change Initiative as a vital organ to promote global change research and capacity building of developing country experts.

I would like to take this opportunity to thank you all for your invaluable inputs to the APN and wish you the very best in the year ahead. The year 2006 demands from us nothing less than our strong and continued support for the APN so that we can further contribute to the sustainable development of countries in the Asia-Pacific region.

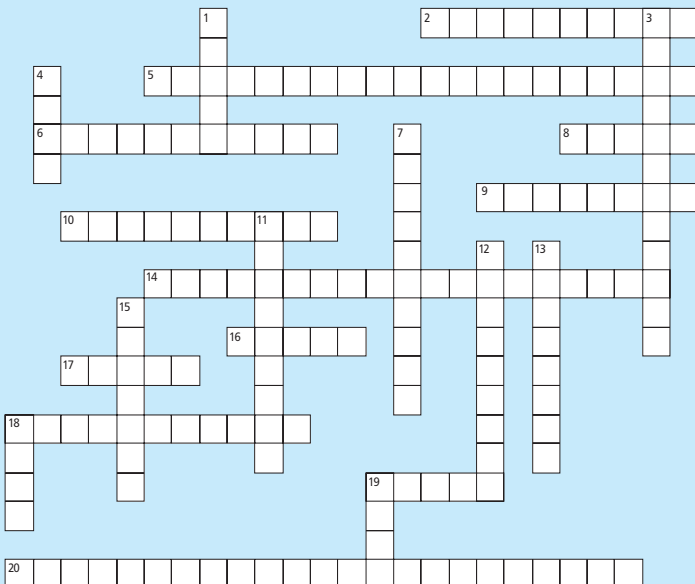
## CROSSWORD CHALLENGE

**ACROSS**

- During the 28th ICSU General Assembly, discussions on the world's development of science and \_\_\_ took place.
- The "\_\_\_ on Global Change" was signed during the first Global Change Open Science Conference in 2001.
- The first main task of the MAIRS-IPO is to develop a \_\_\_.
- This school aims to teach the skills and knowledge needed to understand the nature of ocean-atmosphere interactions.
- The pursuit of sustainable development, a common goal of global change research, has brought together science and \_\_\_.
- Appropriate waste \_\_\_ is a major sustainable development challenge in the South Pacific region.
- \_\_\_ is an option for adaptation to the effects of climate change variability in

- Pacific Island countries.
  - The IPO for \_\_\_ is located in Beijing.
  - \_\_\_ is well known for being one of the most flood prone areas in Fiji.
  - Conferences, workshops, and seminars provide an excellent venue for the promotion of \_\_\_ sharing.
  - The 14th Annual \_\_\_ Meeting focused on Mechanisms of Climate and Human Impacts on Ecosystems in Marginal Seas and Shelf Regions.
  - The APN recently organized a scoping workshop on \_\_\_ and the capacity building needs of the region.
- DOWN**
- The USP is implementing a \_\_\_ Wise Program.
  - In 1990 at a White House Science and Economic Conference, it was agreed to establish networks/institutions to promote \_\_\_ in

- different regions of the world.
- In response to the Declaration, four international global change research programmes joined together to form the \_\_\_.
- Africa is one of the most \_\_\_ regions in the world to GEC.
- \_\_\_ is a critical component of achieving sustainable development.
- Students participated in \_\_\_ that provided hands-on experience in oceanography.
- Building the \_\_\_ of Pacific Islanders to sustainably manage the Pacific Islands' environment is a core component of SPREP.
- The severe environmental problems faced by Africa are exacerbated by \_\_\_ and conflict.
- The goal of \_\_\_ is to foster global change research at the local, national, regional and global levels.
- \_\_\_ is a joint ESSP activity.



Try the APN Crossword Challenge! All answers can be found throughout the newsletter, so read the newsletter and then test your knowledge on Global Change. The solution will be posted on the APN website one month following the newsletter publication.



## Message from the Steering Committee Chair

The issue of "Global Change" is relevant to all people in the Asia-Pacific region and the APN has the opportunity and commitment to make a difference. Support from the APN, enables scientists and researchers to provide information and training so that policy-makers are able to serve their communities, based on the best possible knowledge.



The APN Steering Committee met in Tokyo, at the end of November, and completed a very full agenda. I am happy to report that the APN is in full strength and being proactive by going forward with many

of the topics raised in our new Strategic Plan (2005-2010).

In order for the APN community to advance and meet the objectives of the new plan and the needs of our community, resources, both financial and human, must be strengthened. The activities we are able to support are limited only by our resources. The urgent task for the new Resources Development Committee (RDC) and the APN community is to secure the financial resources already being generously contributed by Australia, Japan, New Zealand and the United States of America. Furthermore, the RDC is tasked with exploring additional options of diversifying investment in the APN. Our job is to make sure those contributors and donors feel confident about making an investment in the APN and that with their support, the APN can fund projects that result in significant outcomes for the Asia-Pacific region. In order to ensure

confidence in our contributors and donors, we need to learn what their goals and ambitions are, as well as the issues or barriers that inhibit direct support of APN activities. Therefore, I invite the APN community to offer suggestions that could help us develop new ways to extend outreach and better serve our community.

The Secretariat has facilitated calls for proposals under both our Annual Regional Call for Proposals (ACRP), and CAPaBLE, the Capacity Development programme. It is pleasing to see increased interest and awareness in these programmes, in addition to a higher standard of proposals submitted.

I would like to take this opportunity to thank everyone associated with the APN for their support and on-going commitment in 2005, and wish you well in 2006.

The Asia Pacific Network for Global Change Research (APN)\* is an inter-governmental network whose mission is to enable investigation of change in the Earth's life support systems as it occurs in the Asia-Pacific region to:

1. Identify, explain and predict changes in the context of both natural and anthropogenic forcing,
2. Assess potential regional and global vulnerability of natural and human systems, and
3. Contribute, from the science perspective, to the development of policy options for appropriate responses to global change that will also contribute to sustainable development.

\*"The APN defines "global change research" as "research regarding global change (the set of natural and human-induced changes in the Earth's physical and biological systems that, when aggregated, are significant at a global scale) and its implications for sustainable development in the Asia-Pacific region."

## News from the Secretariat

The Scoping Workshop on Global Earth Observations and the Capacity Building Needs of the Region: Focus — Climate was held at the Mitakaigisho, Tokyo, Japan, from 17-18 November 2005. The workshop was organized by the Asia-Pacific Network for Global Change Research (APN), jointly with the Ministry of the Environment, Japan and the National Institute for Environmental Studies, Japan. It was attended by 32 participants from 12 countries, including Bangladesh, China, Fiji, Indonesia, Japan, Malaysia, Mongolia, New Zealand, Samoa, Thailand, the United States of America, and Viet Nam.



Participants of the Scoping Workshop

The key objectives of this workshop were to consider the capacity building necessary for research and monitoring related to climate



GEOSS group photo

change and its impacts, to discuss the role of the APN in such research and underpinning systematic observations and to create road maps for designing ideas appropriate for capacity building activities in the Asia-Pacific region. Discussions also focused on the exchange of information on observational data needs, experience and views on climate change and adaptation strategies among the countries in Asia and the Pacific and to facilitate further activities to address the capacity building needs for climate change related issues in relation to implementation of 10 year plan for

GEOSS, in the region. The proceedings of the two-day workshop were conducted in four sessions. Session I featured presentations on the GEOSS Outline and the Workshop Objectives. Session II was allocated to recent developments in climate change research and the need for capacity building. Two working groups were established in Session III to discuss (a) the capacity building issues related to observational data requirements for advancing the understanding of climate change, and (b) the capacity building needs on vulnerability and adaptation to climate change for

sustainable development in the Asia-Pacific region. In Session IV, the priority issues on observational data needs and vulnerability assessment for adaptation purposes and thematic issues as regards capacity building needs of the region were collated.

The two working groups deliberated on the priority issues relevant to capacity building needs and on ways and means to strengthen regional cooperation in the Asia-Pacific region. It was collectively felt that a systematic observation of sensitive and fragile systems (hot spots) in the region is very important to detect early warning indicators and demonstrate the evidence of global warming to national leaders and the society. Some of the identified hot spots that need more intensive observations and systematic analysis are listed below:

- ▶ Himalayan Glaciers — Spatial and temporal distribution of snow cover
- ▶ High Elevation Areas of Tibetan Plateau
- ▶ Degradation and depletion of Ground Water Aquifers in China, India and Pakistan
- ▶ Desertification trends in Arid/Semi-arid areas of west Asia
- ▶ Mongolian Tundra
- ▶ Hydrological Cycle and its changes in Asian Monsoon System and its linkage to El Niño — Southern Oscillation episodes
- ▶ Potential Changes in Extreme weather events including Tropical Cyclones and Typhoons.
- ▶ Trends in deterioration of Coral reefs, mangroves, and sea grass in Coastal Waters of East, South, Southeast Asia, Australia and Island Countries
- ▶ Loss of Biodiversity in Fragile Ecosystems of Highlands, Wetlands and Islands.



**Working Group – Prof. Mimura, Dr. Taito and Prof. Fuchs**

The two working groups identified three levels of capacity to be developed in the region: individual, organizational/institutional and system of institutes/society. Coordination of capacity building activities within and between these levels was also considered important.

The identified capacity building needs are:

- ▶ Global and Regional Climate Models;
- ▶ Credible high resolution climate scenarios;
- ▶ Integrated Impact Assessment Models;
- ▶ Remote Sensing and Geographic Information System (GIS);
- ▶ Linkage between climate change observations and human dimensions;
- ▶ Emergency Preparedness;
- ▶ Rescue, re-analysis, and dissemination of historical data and knowledge focusing on the use of end-users;
- ▶ Institutional framework (regional, national and local); and
- ▶ Funding Resources to meet the capacity building needs.

The two working groups appreciated that the APN has been supporting projects proposed by teams consisting of individual researchers and, sometimes, policy-makers and NGOs. The APN has also encouraged dialogue between the research community and policy-makers and society in the Asia-Pacific region over the past decade.

While both working groups identified a number of hot spots (listed above), it was felt that the precise targets for capacity building activities on both observational systems and a related host of issues of data availability, analysis and interpretation for enhancing the coping strength of the impacts of climate change and development of adaptation strategies in the Asia-Pacific region need more focused discussion within a larger group engaging all of the APN National Focal Points and other stakeholders.

The working groups decided that potential participants to the follow-up workshop would take stock of the capacity building needs of their individual nations and return back to the APN with more specific issues and requirements (in the follow-up Scoping Workshop) that the APN could facilitate through implementation of projects in those critical issues by way of developing the human resources and by strengthening the institutional structures and the technical capacity necessary to cope with climate change.



**GEOSS workshop**



We have lost an extremely dedicated and valued member of the global change community. Professor Vladimir Kasyanov, Director of the Institute of Marine Biology, Russian Academy of Sciences, was tragically killed in a traffic accident 1 October 2005. Professor Kasyanov was a project leader for the APN sponsored

### Condolences: Professor Kasyanov

“Climate Variability and Human Activities in Relation to Northeast Asia and their Land-ocean Interactions and their Implications for Coastal Zone Management.” Not only did Prof. Kasyanov devote a lot of time and energy to the APN, but he was also Chairman of the International Geosphere-Biosphere Programme, and Temperate East Asia Committee of START.

Professor Kasyanov was highly respected by everyone who was fortunate enough to have known him. He was a role model in each of their lives. He was regarded as a leader by those who worked with

him and was esteemed throughout the global change community. Prof. Kasyanov's enthusiasm and passion for his work, particularly in the area of global change, has indeed made an important contribution not only in Russia, but also in the Asia-Pacific Region and the rest of the world. We are sure that his contributions to this network and those who were fortunate enough to have worked with him will not be forgotten.

“We will suffer greatly from the loss of Professor Vladimir Kasyanov, Director of the Institute of Marine Biology, Russian Academy of Sciences, First Vice-Chairman of

the Far East Branch, and Chairman of the Russian National Committee for IGBP. We were fortunate to receive his experience and humanly advice for all our activities. It's a great loss to us at the death of I convey my deepest condolences to his grieved wife and family so that they can overcome this tragedy. I pray for his soul's eternal peace.”

**Quazi Liaquat Ali**  
APN National Focal Point, Bangladesh

“I would like to convey my sincerest condolences and sympathies to the family of the late Prof. Kasyanov. His untimely demise is a great loss to the Marine Science World. He will certainly be remembered for his invaluable contributions to the progress of Marine Science.”

**Celso P. Diaz**  
Scientific Planning Group Member, Philippines

## APN Out and About

### African Network of Earth System Science (AFRICANESS), 22-24 September. Nairobi, Kenya.

The Pan-African Start Secretariat and ESSP organized, with support from the National Science Foundation (NSF), an African Network for Global Environmental Change Research Workshop from 22-24 September in Nairobi, Kenya. The workshop was attended by 74 participants, including African global environmental change scientists, researchers, lecturers, African Global Change National Committee representatives, the ESSP and its projects (programmes IGBP and IHDP), ICSU, science related initiatives (e.g. MEA, CGIAR System, Resilience Alliance, etc), development aid funding agencies and regional networking and capacity building organizations such as the Asia-Pacific Network for Global Change Research (APN), the Inter-American Institute for Global Change Research (IAI) and START.

The objectives of the workshop were to:

- ▶ Identify the foundations based on past initiatives for further developing scientific networking among African scientists, and with the international community;
- ▶ Recommend network structures and processes, identify funding strategies and begin seeking a long-term international support; and
- ▶ Help build a high-quality global environmental science network, building research capacity and share scientific agendas, concerns and resources.

On Day 1, the meeting was opened and chaired by Prof. Shem Wandiga at which time he invited several guests to come up; statements were given by ICSU, UNEP and various development aid funding agencies. An Official Opening Address was given by the Assistant Secretary to

the Honorable Stephen K. Musyoka, M.P Minister for Environment and Natural Resources, Kenya.

A Plenary Session on Science and Sustainable Development was chaired by Prof. Mary Scholes at which time three keynote presentations were given concerning the Earth System Science and Global Environmental Change, sustainable development and research capacity and programmes in Africa. The presentations were followed-up with general discussions and questions to the panelists.

In the afternoon on Day 1, the workshop looked at the current status of Global Change Research (GCR) in Africa. START gave an overview their GC research and capacity building activities in Africa and DFID and IDRC presented on their new collaborative research and capacity development programme on climate adaptation research for Africa.

In the next plenary session two inter-governmental networks, the Inter-American Institute for Global Change Research (IAI) and the Asia-Pacific Network for Global Change Research (APN), presented on their institutional set-up and experience and lessons learned. IIASA, an international global change research institute also presented on a possible strategy for the development of a GCR network in Africa. The Plenary session ended in general discussions and questions for the panelists. The most common concerns seemed to be the timeline involved in setting up a network in the region and membership participation.

On Day 2 of the workshop, participants received a working group briefing session and then broke out into four working groups to discuss:

*Working Group 1:* Governance and Structural Organization  
*Working Group 2:* Funding and Partnerships  
*Working Group 3:* Key Thematic GCR Issues  
*Working Group 4:* Policy-Science-Practice Interface

Each of the working groups discussed issues relevant to their topic and met back in the afternoon on Day 2 to present their outcomes. All outcomes were collated and presented on Day 3 in a presentation that aimed to look at the way forward; from which draft resolutions were discussed.

The following outcomes emerged from the 3-day meeting:

- ▶ Participants acknowledged the need for an African network.
- ▶ It was proposed that the African network could have two components: a structured network (consisting of a general assembly, board, secretariat, science advisory body; possibly hosted in the interim under AU-NEPAD) and an establishment of a forum for dialogue between science, policy and society.
- ▶ Internal funding — sources could be individual countries, national research councils, African organizations, membership fees, seed funding, national budgetary allocations, etc.
- ▶ External funding — G8 and other developed countries, EU, UN agencies, multi and bilateral arrangements
- ▶ Key research thematic areas included: (1) water and climatic modeling, (2) desertification, (3) land degradation, biodiversity, and food security, (4) health and pollution, and (5) marine ecosystems

**GEA International Conference 2005: Climate Change and its Effects on Sustainable Development, 15-16 October 2005. Tokyo, Japan.**

The Global Environment Action (GEA) 2005 International Conference on Climate Change and its Effects on Sustainable Development was held at the Capitol Tokyu Hotel in Tokyo, Japan from 15-16 October 2005. The conference was co-organized by GEA, the United Nations Department of Economic and Social Affairs (UNDESA) and various ministries within the Government of Japan. Senior government officials, scientists and academicians from both Japanese and foreign institutions, attended the conference.

The conference aimed to discuss, in four plenary sessions, future actions needed to address the effects of climate change on sustainable development, keeping in mind the need for collaboration between policy-makers and scientific researchers. Discussion topics were:

*Session 1: The Current State of Scientific Knowledge in Climate Change*

*Session 2: Climate Change and Water Management, Food Security and Risk Management*

*Session 3: Measures for Mitigating Climate Change/Adaptive Strategies, Technologies and Technology Transfer as well as Collaborative Research*

*Session 4: Policy Options for Sustainable Development*

The occasion was honoured by the presence of Their Imperial Highnesses Crown Prince Naruhito and Crown Princess Masako. After Mr. Juto Saito's, GEA Chairman, opening remarks, Prince Naruhito welcomed the participants and echoed his grave concerns over recent natural disasters which could be linked to climate change. Prime Minister, Junichiro Koizumi, also delivered congratulatory remarks to the organizers, emphasizing the need for immediate action among countries.

Dr. Paul Josef Krutzen, the 1995 Nobel Prize Laureate in Chemistry, delivered a keynote speech highlighting the impacts of human activities on the environment. While those impacts are citations of well known research he introduced them splendidly, coining the term "anthropocene" to refer to the current human-dominated geological era which has seen the destruction of the natural environment due to increased human activity since the beginning of the 19<sup>th</sup> century. His speech was concluded by calling for further promotion of scientific research.

The plenary session was kicked off with the election of Dr. Motoyuki Suzuki, Special Advisor of the United Nations University, as Chair, and of Dr. Peter Henricke, President of the Wuppertal Institute for Climate, Environment and Energy, as Vice-Chair. Before discussions were opened, a moment of prayer was held for Ms. Joke Waller-Hunter, the Executive Secretary of UNFCCC Secretariat, who sadly passed away.

Session 1 focused on relevant findings from current research activities on climate change. The first speaker was Dr. Klaus Topfer, Executive Director of the United Nations Environment Programme (UNEP), followed by Dr. Takunosuke Fujitani, Director General of the Meteorological Research Institute, Japan Meteorological Agency. Then, Dr. Akimasa Sumi, Professor at the Center for Climate System Research of the University of Tokyo, followed up as a discussant, citing the capabilities of Japan's Earth Simulator, as well as the infrastructure and human resources support needed for more accurate and reliable climate prediction in the future. Both Dr. Fujitani and Prof. Sumi pointed out that the impacts of clouds and aerosols are important to make forecasts more accurate.

Session 2 commenced with a presentation by Mr. Ian Johnson, Vice-President of the World Bank. He outlined eight areas that need immediate attention in order to mitigate the impacts of climate change on water, food security and risk management. There were three discussants for this session, namely, Dr. Koutarou Takemura, President of the Foundation for Riverfront Improvement and Restoration, who talked about climate change and the water cycle management in Japan; Dr. Takeshi Horie, Professor at Kyoto University, discussed on climate change and food production; and Dr. Kaoru Takara, Vice Director and Professor at the Institute of Disaster Prevention, Kyoto University, discussed on extreme climate events and disaster resistance capacity. Dr. Takemura further suggested that Japan should consider a completely new land utilization plan on the assumption that considerable parts of the country may lie below sea level in the future. The importance of awareness raising, investment in the public sector, and encouraging disaster related education was also highlighted.

The first part of Session 3 focused on mitigation measures and adaptive strategies and technologies. Mr. Seth Osafo, Senior Legal Advisor of the UNFCCC took the floor as leadoff speaker; followed by Dr. Shuzo Nishioka, Executive Director of the National Institute for Environment Studies (NIES-Japan), as discussant. It was noted in the discussion that while the Clean Development Mechanisms (CDM) is a valuable tool to meet the goals of the UNFCCC, its mechanisms are still too complicated and cumbersome, especially for the private sector.

The second part of Session 3 was continued on Day Two, which was attended by HRH Princess Masako. The discussion centred on technology transfer and

collaborative research with Dr. Peter Henricke and Dr. Hans van Ginkel, Rector of the United Nations University, as lead presenters. The discussants were Prof. Dadi Zhou, Director General of China's Energy Research Institute of National Development and Reform Commission, and Dr. Vo Quy, Honorary President of Viet Nam's Centre for Natural Resources Management and Environmental Studies, Vietnam National University. Dr. Henricke introduced the German experience and proposed to establish a 2000 Watt/capita society. One of the suggestions made in the discussion was the creation of a "positive list" of technologies to streamline and accelerate the CDM process.

Dr. Michael McElroy, Professor and Director of Harvard University's Center for the Environment, gave the leadoff speech in Session 4, the last and final session which covered various policy issues for sustainable development. Prof. Mitsutsune Yamaguchi of the Teikyo University acted as discussant, highlighting, among others, the need to start considering global and long-term adaptation and mitigation strategies "beyond Kyoto." It was pointed out that the Kyoto Protocol does not have a mechanism to promote technology development. Pledge and review system was suggested as a way forward.

The discussions and recommendations from the conference are expected to be reflected in various international dialogues, including the 11<sup>th</sup> COP session of the UNFCCC and the 1<sup>st</sup> COP/MOP session of the Kyoto Protocol held in Montreal, Canada.

### Capacity Building in Asia and the Pacific on Issues Related to the Kyoto Protocol Beyond 2012, 19-20 October 2005. Tsukuba, Japan.

The meeting of the APN-funded project "Capacity Building in Asia and the Pacific on Issues Related to the Kyoto Protocol Beyond 2012" (APN 2005-25-NSY) was held at the National Institute for Environmental Studies (NIES) in Onogowa, Tsukuba from 19-20 October 2005. It aimed to gather project collaborators to discuss the objectives of the research project, present initial country reports of the perspectives of the involved countries beyond 2012, and devise guidelines and a work plan for its implementation. The meeting was attended by project collaborators from Japan, Indonesia, Thailand, China and Bangladesh, scientists and experts from academic and research institutions in Japan, and Ms. Maricel A. Tapia from the APN.



The 2-day meeting was divided into four sessions: (1) Introduction, (2) Country reports beyond 2012, (3) Cross-cutting issues, and (4) Planning for the project.

After introductions, the meeting proceeded with a presentation from Dr. Norichika Kanie of the Tokyo Institute of Technology. His paper entitled "Linking Global Emission Paths with Nation-based Long-term Targets: A Scenario Planning Approach to Long-term Climate Regime Participation" focused on the De-carbonization 2050 Project in Japan, and presented the emission reduction targets of the country under four scenarios considering the structure of global governance and the perception of the domestic society (i.e., globalism, multilateral

cooperation, de-structured world, and balance of power). The initial reaction of the participants was the feasibility of the reduction targets to which Dr. Kanie responded that it would be answered in another presentation under the cross-cutting issues. The possibility of preparing a reduction target scenario for different countries was also brought up. It was agreed that the outputs would be a useful tool in the dissemination and negotiation process.

Dr. Agus Sari of Pelangi — EcoSecurities Indonesia introduced the "Beyond 2012" project to participants through a presentation entitled "Not Where We Are Going, But How to Get There: The Path Towards 2012 and Beyond" Dr. Sari explained the objectives of the project, which are (1) to increase the capacity of developing countries in dealing with future institutional challenges of climate change beyond the Kyoto Protocol and the Framework Convention on Climate Change, (2) to foster developing countries to be more proactive in the discussion of the future global climate regime, and (3) to develop a climate of trust, understanding and good faith to facilitate the commencement of the crucial negotiation on "beyond 2012" institutional challenge on climate change. He also presented the work streams and work flow of the project. In conclusion, he emphasized that the team should focus on "process" —how to start participation in the discussion on "Beyond 2012."

Session 2 looked at the different perspectives of the collaborating countries on the Beyond 2012 issue, with contribution from India courtesy of Dr. Rajesh Nair, a visiting researcher at NIES. The reports showed the different interests of each country, with Indonesia focusing on Clean Development Mechanism and flexibility mechanisms, Thailand on future climate regime architecture, China on technology transfer and receptivity, Bangladesh on adaptation, and India on sustainable development.

Cross-cutting issues were discussed during Session 3 with presentations from scientists and experts from academic and research institutions in Japan. Dr. Toshiaki Ohkura of the National Institute for Agro-Environmental Sciences delivered a presentation on perspectives from sinks, particularly focusing on soil carbon sequestration. Yukari Takamura of Ryukoku University shared her expertise on international law in relation to the post-2012 regime, while Izumi Kubota, of NIES, discussed the possible elements of adaptation policy in the post 2012 framework. The presentation of Dr. Junichi Fujino (NIES), answered the question on the feasibility of Japan's reduction targets. Based on the current findings of their research project, GHG emission reductions could be achieved through changes in behaviour (e.g., lifestyle, shift to large-sized vehicles, eco-driving), institutional measures (e.g., public transportation support system), advancement in technology (e.g., hybrid vehicle), and other countermeasures (e.g., houses with insulation).

Session 4 was devoted to planning the next steps of the research project. Based on the various papers presented, a list of questions was put together that would guide the project collaborators in preparing their respective country report. The country report would describe the existing situation of each country in relation to poverty reduction, sustainable development, climate change and international diplomatic position, as well as review the current proposals being developed in their respective countries on the "beyond 2012" regime. Aside from the country cases, each country collaborator was also assigned to prepare a thematic case based on the themes that emerged from the presentations. Furthermore, the agenda for the COP/MOP1 side event and administration matters were discussed.

**Young Scientists Training Workshop on Climate Variability and Human Activities in Relation to Northeast Asian Land-Ocean Interactions and their Implications for Coastal Zone Management (APN 2005-05-CMY-Adrianov), 24-26 October 2005. Vladivostok, Russia.**

Recognizing the need and importance for the regional global change community to study river-ocean interactions and environmental changes in river basins and near-estuarine coastal zones of major rivers of the Northeast Asia, and as a result of APN activity in the Russian Far East, particularly the two APN workshops held in Vladivostok in 2002 and 2003, a proposal, *Climate Variability and Human Activities in Relation to Northeast Asian Land-Ocean Interactions and their Implications for Coastal Zone Management*, was developed by Russian, Chinese and Korean scientists to investigate and assess the effects of the natural climatic variability and socio-economic development on environmental changes.

The key questions addressed in the project are: (1) how are humans altering the mass balance of water, sediment, nutrient and contaminant fluxes, and what are the consequences? (2) how do changes in land use, climate and sea level alter fluxes and retention of water and particulate matter in coastal zones, and affect the morphodynamics? and, (3) how can we apply knowledge of processes and impacts of biogeochemical and socio-economic changes to improve integrated coastal zone management?

The 2-year, APN-funded collaborative and multidisciplinary project intends to answer these questions, with aims to improve regional capacity building and to

expand the APN network. This project is currently in its second and final year of APN funding and is running smoothly despite the sudden and tragic death of the Project Leader, Professor Vladimir Kasyanov in early October, 2005. Following this tragedy, the main collaborators of the project, in consultation with the APN Secretariat agreed that Acting Director, Dr. Andre V Adrianov, of the Institute of Marine Biology, assume the lead of the project and its activities.

**Training Workshop and Field Trip for Young Scientists**

The Institute of Marine Biology FEB RAS, with funding and support from the Asia-Pacific Network for Global Change (APN) held a Training Course for Young Scientists: Climate variability and human activities in relation to Northeast Asian land-ocean interactions and their implications for coastal zone management in Vladivostok, Russia, on October 24-26, 2005.

This training course was part of the APN project activities relating particularly to capacity building and the training of young scientists. Lectures were delivered by experts in climate change and variability/sea level rise, river basins/coastal zone interactions, ecosystems and persistent organic pollutants; with lecturers from China/Hong Kong, Republic of Korea and Russia, as well as from the APN Secretariat.

On day one of the workshop, Dr. Adrianov opened the workshop by holding a one-minute memorial

silence for Professor Vladimir Kasyanov, following his tragic death, as well as extending best wishes for recovery to Mrs. (Professor) Kasyanov who survived the accident. Linda Stevenson also extended deepest sympathies on behalf of the APN. The workshop commenced with an opening session on global change research and bridging science and policy by Dr. Konstantin Lutaenko, project coordinator and senior research scientist at the institute and Linda Stevenson, respectively. The remainder of the day focused on lectures with specific research elements of the project combined with a discussion session. Topics covered during the workshop included:

1. Comparative analysis of environmental change of the Tumen and Razdolnaya Rivers and their changing characteristics over 2,000 years;
2. Climate Variability in Northeast Asia;
3. Complex Management Problems within Coastal Zones of the Far-Eastern seas;
4. Sea-Level Rise in the East/Japan Sea and Practical Aspects;
5. Ecological State of Amurskii Bay;
6. Biomarkers of Marine Environment Contamination;
7. Long-term Changes in the Coastal Zone and Marine Environment of Hong Kong, China; and
8. Chemical and Microbiological Monitoring of the Marine Environment

On the second and third day of the workshop, the young scientists



Plankton sampling at Amurskii Bay

embarked on a field trip to Amurskii Bay where they were trained in sampling procedures and analysis of phytoplankton and engaged in active discussions of their work with key project collaborators. This provided an excellent opportunity for the young scientists to discuss their work and long-term goals. Following the excursion, the young scientists reported on the workshop, particularly of its value, what they had learned and how it had been/might be useful for their careers. This was the first time for them to interact with international scientists, which was a key to the workshop's success.

On the 4<sup>th</sup> day of the workshop, Drs. Tatiana Orlova and Dmitry Pitruck, both collaborating Russian Scientists, organized a scientist session for policy-makers, targeting national policy-makers based in Vladivostok and focusing on the project activities. This workshop was conducted in English and Russian and the outcomes will be provided in a report to the APN.



Young Scientist Workshop Participants



Presentation by Linda Stevenson

## International Group of Funding Agencies (IGFA) Meeting, 26-28 October 2005. Alexandria, USA.

### What is IGFA?

The goal of IGFA is to foster Global Change Research at the local, national, regional and global levels. IGFA is a forum through which ministries, agencies and foundations in a wide variety of countries, or groups of countries that fund Research on Global Change, identify issues of mutual interest and find ways to address these through national and international actions. Once a year, IGFA provides an international plenary meeting for its members, invited research organizations and others. IGFA is an agency of funding actors, but is not

itself funding research projects.

The IGFA annual meeting took place on 26-28 October in Alexandria, Virginia and was attended by member country representatives, as well as the global change programmes and networks: APN, DIVERSITAS, ICSU, IGBP, IHDP, START, and WCRP. The meeting was opened by Dr. James Mahoney, Director, US Climate Change Science Programme. This year's meeting had four strategic sessions: highlights and recent accomplishments on international programs, current trends in national

funding and long-term sustainable funding for global change research and development, linkages between global change research and development and reports on MRI, ERANet, GEOSS, Africaness Workshop and IPY. The APN was given the opportunity to disseminate information on its activities, in particular those activities that have taken place since the previous IGFA Meeting in September, 2004 and the CAPaBLE Programme.

For detailed information on IGFA, refer to the following website: <http://www.igfagr.org>



## The APN Follows-up Young Scientists

### How has the APN built my scientific capacity?

By Maricel Tapia

It is widely recognized that sustainable development is a common goal of global change research conducted worldwide. Its pursuit has brought together both science and politics to meet the fundamental needs of present and future generations, without undermining the earth's life support systems. This is true not only in terms of anticipating the needs of generations to come, but also in ensuring the presence of individuals who will foster the work in the future.

Certainly, the task we are faced with, achieving sustainability, is not an easy one. Each year brings with it new challenges in the environment, technology, industry, and economy. The need to improve the capabilities of future generations of scientists is essential to 'sustain sustainability'. Global change organizations are aware of this need and have been responding to it by paying it significant attention and building the scientific capacity of young and aspiring scientists to improve their abilities. The Asia Pacific Network for Global Change Research (APN) has been effective in addressing this need since the creation of the CAPaBLE Programme in 2003. The APN strives to improve the scientific and technical capabilities of countries in the region through its CAPaBLE Programme.

Capacity building comprises a broad range of activities and approaches. Its contemporary view, when applied to environmental management, goes beyond the

conventional perception of training to include the management of change, conflict resolution, managing institutional pluralism, coordination enhancement, improved communication, and data and information sharing and dissemination. (From Links for Developing Change in Natural Resource Management, <http://nrm-changelinks.net/capacity.html>). The sharing of data and information is often neglected, yet it proves to be significant in any research process. One of my professors always reminds me that research which is not communicated is equivalent to research not conducted at all.

Conferences, workshops, seminars, and other related activities provide an excellent venue for the promotion of information sharing. Furthermore, with such a broad range of activities taking place during meetings, not only is information exchange fostered, but also a wide-range of capacity building activities are offered, such as training, networking, etc. Above all, it is the gained knowledge and experience that participants will take away with them that makes these meetings significant, particularly for those individuals who are trying to develop their career. I personally gained considerable experience because of my participation at different international conferences/meetings over the past years.

Because of the support I received from the APN, I was fortunate to be

able to participate in three major meetings in the global change community, namely, the 2003 Open Meeting of the Human Dimensions on Global Environmental Change held on 16-18 October 2003, in Montreal, Canada; the 1<sup>st</sup> International Young Scientists Conference on Global Change, held from 16-20 November 2003, in Trieste, Italy; and the Millennium Ecosystem Assessment (MA) Combined Working Group Meeting (Contributing author to the Millennium Ecosystem Assessment — Sub-global: Chapter 8. Conditions and Trends), held on 26-30 September 2004, in Kuala Lumpur, Malaysia. These meetings gave me the opportunity to present the findings of our research efforts to scientists from different regions of the world. I was also able to learn from the experience of scientists from other countries and establish networks with them, as well as contribute to the global initiative to assess the consequences of ecosystem change for human well-being.

Being new and young in the field of global change research, I consider such events a turning point in my life. The prestige of participating in international events and meeting renowned personalities in the field was enough motivation to boost my confidence and make the hard work I endured worthwhile. In addition, the exposure I had to different areas of global change research helped me to realize my field of interest and gave me the inspiration I needed to

further pursue this area. Finally, I could see what career path to take more clearly; that is how I ended up working in my present position.

On a professional level, the above experiences gave me the enthusiasm to do my job as a researcher in anticipation of a new discovery to fill in the knowledge gaps in the area. Moreover, the knowledge that I gained proved useful in significantly contributing to the various research

projects in which I was involved. These involvements have also led to co-authorships in several publications in the form of journal articles, policy briefs, or case studies.

Indeed, the APN has been instrumental in helping me to realize my potential. It provided me with the opportunity to participate in events that ignited a spark of interest in this field; eventually the interest became passion and a

mission to work towards. It seems as though the APN is continually building and enhancing my capacity as a young scientist in the field of global change because I am now working as a Programme Fellow at the APN Secretariat.

I am just one among the many young scientists whose scientific and technical capabilities have been improved through the initiatives and efforts of the APN. And with the

capacity building objective of the APN further strengthened by its Scientific Capacity Building and Enhancement for Sustainable Development in Developing Countries (CAPaBLE) Programme, the future is assured that it will have its own experts fostering global change work, and ultimately sustainable development.

*Thanks, APN!*



## Guest Article

### GLOBAL ENVIRONMENTAL CHANGE: REGIONAL CHALLENGES

An ESSP Global Environmental Change Open Science Conference, 9-12 November 2006. Beijing, China

#### Background

The first Global Change Open Science Conference in Amsterdam in July 2001 brought together 1400 scientists and other interested parties from 105 countries (including APN-funded participants from the Asia-Pacific region) to describe, discuss and debate the latest scientific understanding of natural and human-driven changes to our planet. They examined the effects of these changes on our societies and our lives, and explored what the future might hold. A proceedings volume entitled "Challenges of a Changing Earth" has been published by Springer.

Participants at the Conference signed "The Amsterdam Declaration on Global Change" which, among other things, stated that "a new system of global environmental science is required." It called for strengthening of current cooperation among the global environmental change research programmes and greater integration across disciplines, environment and development issues and the natural and social sciences. It also called for greater collaboration across national boundaries and intensified efforts to enable the full involvement of scientists from developing countries.

In response to the Declaration, the four international global environmental change research Programmes: DIVERSITAS — an international programme of biodiversity science; the International Geosphere-Biosphere Programme (IGBP); the International Human Dimensions Programme on Global Environmental Change (IHDP); and the World Climate

Research Programme (WCRP), joined together to form the Earth System Science Partnership (ESSP) devoted to the study of the integrated Earth System.

Since its inception, the ESSP has established Joint Projects on carbon, food, health and water, as major interdisciplinary studies to explore the relationship between global environmental change and sustainable development. These projects, and the ongoing core Programmes, take an Earth System Science approach that brings together researchers from diverse fields and from across the globe, to undertake an integrated study of the Earth system, its structure and functioning, the changes occurring to the system and the implications of those changes for global sustainability. In addition, the ESSP has initiated the first of a series of integrated regional studies, in Monsoon Asia, thanks to support from the APN. The ESSP has decided that, five years after the first Global Change Open Science Conference, it is now time to once again bring together the worldwide global environmental change research community (including those from the APN community) to assess progress since the Amsterdam meeting and to lay plans for the future.

#### Conference Objectives:

- ▶ To present the results of the last five years of global environmental change research, emphasising the Earth System Science approach, as it relates to carbon, food, health and water.
- ▶ To highlight the rich variety of research conducted by the global environmental change community, particularly the Core

Projects of the four international GEC Programmes, and how that research contributes to and supports the objectives of the ESSP.

- ▶ To point the way for the next decade of Earth System Science.

#### Conference themes:

**Earth System Science Approach:** New advances in studies of the physical, biogeochemical, biodiversity, and human dimensions aspects of global environmental change.

**Science for Sustainability:** Global environmental change research relating to carbon, food, human health, and water; as reflected in the ESSP Joint Projects.

**Integrated Regional Studies:** The dynamics, impacts and consequences of the interactions between natural and social systems at regional scales, including extreme events, and how they connect with global-scale phenomena.

**Global Change in Monsoon Asia:** Global environmental change research in monsoon Asia.

#### Audience and outreach:

The Conference will be aimed at both scientists and others interested in the Earth System Science approach to global environmental change research. This will also include members of the broader global environmental change science and development communities, including policy-makers, practitioners, journalists and members of the private sector.

Immediately prior to the main Conference, the 2<sup>nd</sup> International Young Scientists (YSC) Global

Change Conference (7-8 November 2006), organised by the ESSP System for Analysis Research and Training (START), will provide an opportunity for selected young scientists to present and discuss their work and to participate in the ESSP Open Science Conference. A special effort will be made to attract and support scientists from developing countries and post-doctoral researchers and graduate students to participate in the OSC. The OSC International Organizing Committee and START will work together to ensure that capacity building is an important element of both events.

This ESSP Open Science Conference will be distinct from the OSC of the GEC Programmes in that it will focus on the integrative and multidisciplinary aspects of the whole ESSP, particularly the ESSP joint projects. There will be sessions on the integrative modelling aspects of the coupled climate system in recognition of over 25 years of WCRP research.

#### Sessions:

The Conference programme will emphasise plenary sessions in order to meet the Conference objective of bringing together practitioners from many different disciplines to focus on the integrated Earth System approach to global environmental change research. A Call for Session Proposals was issued in October and a Call for Papers will be issued in February. The exact nature of the programme will be determined by the IOC based on the response to the Call for Sessions. However, it is expected that sessions topics will include: integrated regional studies with emphasis on Monsoon Asia; integrative modelling of the water,

carbon and other cycles; the role of science in informing public policy development; the role of science in development, including food security, health and water management; and characteristics, impacts and responses to extreme events.

#### Outcomes:

The outcomes of the Conference will be:

- ▶ Further development of cohesiveness within and planning of the ESSP, with involvement of a broad community (including the APN), to set future directions of the ESSP.
- ▶ Recommendations for Programme directions and involvement of governments and others.
- ▶ Input into the future evolution of major initiatives including:

- ▶ the Global Earth Observation System of Systems (GEOSS) through identification of observational priorities
- ▶ the International Conventions on Biological Diversity, Climate Change, Desertification and others and national and international policies on these topics
- ▶ the increased role of GEC science in international development
- ▶ Higher visibility for the ESSP, across a broad community.

A proposal has been submitted to the APN, under its CAPaBLE Programme, entitled: "Maximizing Participation of Asia-Pacific Developing Country Scientists in the Earth System Science Partnership (ESSP) Global Environmental Change Open



Science Conference. Beijing, China, 9-12 November, 2006."

For more details about the ESSP Open Science Conference, please visit the Conference website (<http://www.essp.org/ESSP2006/>) or contact:  
Martin Rice  
ESSP Coordinator  
Email: [mrice@essp.org](mailto:mrice@essp.org)



### African Scientists Form a Regional Network on Global Environmental Change

At a historic meeting held in Nairobi, Kenya in September 2005, African scientists and policy-makers resolved to establish a network on global change research and capacity development in the region. The meeting was organized by the Earth System Science Partnership (ESSP), with support from the US National Science Foundation and the New Partnerships for Africa's Development (NEPAD), to discuss critical environmental issues facing Africa and recommend steps for positive action.

The aim of the network, initially called AFRICANESS (African Network of Earth System Science) is to provide a regional platform for the study of global environmental change (GEC), the combination of changes occurring throughout the world which have an impact at the global scale. Climate change is just one of the consequences of GEC. All countries are affected by GEC but some are more vulnerable than others. The combination of poverty, political instability, disease and sensitive ecosystems make Africa one of the most vulnerable regions in the world.

The establishment of Global Change Regional Networks or Institutes for Global Change Research was first conceived in the US at the White House Conference on Scientific and Economic Research Related to

Global Change, back in 1990. It was agreed at the conference that the concept was sound and that such networks or institutes should be developed to promote global change science in different parts of the world.

The US took the lead with the establishment of the Inter-American Institute for Global Change Research (IAI); Japan took the lead for the establishment of the Asia-Pacific Network for Global Change Research (APN); and the European Commission (EC) took the lead for the establishment of ENRICH. The IAI and the APN are based on the original concept agreed at the conference i.e. north-south partnership to develop hemispheric-scale cooperation in global research and by doing so, to improve and expand scientific capabilities in the south (developing world). The EC established a global programme rather than a programme that focuses on the potential north-south interaction between Europe and Africa.

These networks existing in other regions, such as the Asia-Pacific and the Americas, have made a significant difference in the coordination and support of environmental research in these regions and have strengthened links between research and policy. In order for scientists to play a role in reducing the dramatic impacts of global change in Africa, a similar network is needed. Africa faces

severe environmental problems, a situation that is exacerbated by poverty and conflict. Overcoming these problems requires an unprecedented regional and international effort involving African and international scientists and policy-makers working together.

The regional network on global environmental change will monitor the dramatic changes occurring in Africa and provide African governments and society with the information needed to respond effectively. The network will also enable African scientists to speak with a unified voice on issues of serious concern in the region, such as desertification and dwindling water resources. By coordinating their efforts, African scientists can more easily set collective research agendas and share data.

The network will initially focus on water and climatic modelling, desertification, land degradation, biodiversity and food security, health and pollution, and marine ecosystems. An important aspect of the network will be working with policy-makers and social/natural scientists to ensure that the research agenda supports societal and policy needs of the region.

An organizing committee, with broad representation, has been established to explore the needs and opportunities for regional cooperation for global change research, to identify the institutional

structure and processes required to develop and foster GEC research network, to identify the necessary mechanisms for reliable and long-term funding, and to promote a shared international partnership, which will better engage the international development agencies, science foundations, research

councils and others, in playing a lead funding role in Africa.

The Pan African Secretariat (PASS), a joint ESSP activity, strongly believes this event was an important development. Similar networks in Africa have been attempted in the past, however this was the first time

that scientists from across Africa came together to discuss their needs openly, and find a common way forward.

For more information on the formation of the regional network on global change research in Africa please contact:

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## APN Supported Projects

### The Surface SOLAS (APN 2005-08-NSY)

#### SOLAS International Summer School 2005: Attendance of Young Scientists from the AP Region

The SOLAS (Surface-Ocean Lower-Atmosphere Study) Summer School is a biennial, international event that brings together over 70 students and 20 lecturers for a mix of lectures and practical workshops. It aims to teach the skills and knowledge of the many disciplines needed to understand the nature of ocean-atmosphere interactions. It allows doctoral students and early-career researchers to see how their work fits into the broad canvas of SOLAS, and global change research more generally.

The second International Summer School of the SOLAS Programme was held in Cargèse, a beautiful town on the French Mediterranean island of Corsica. Organised and run by the SOLAS International Project Office, Corinne Le Quéré (UEA, Norwich UK) and Véronique Garçon (LEGOS, Toulouse, France), the school welcomed 74 students from nearly 30 countries, with a wide range of scientific expertise and experience. The Summer School offered participants the opportunity to broaden and deepen their knowledge of SOLAS science and to meet other PhD students and young post-docs, from around the world, studying SOLAS-related topics.

Thirty-two of the students who attended the summer school came from APN member countries: Bangladesh (1), Peoples Republic of China (6), India (1), Japan (6), Mongolia (1), Republic of Korea (1) and the USA (16). With kind support from the APN, six Chinese students were fully funded to attend the summer school, and other students from APN member countries, secured funding from various other sources.

During the Summer School, lectures offering the students an overview of SOLAS knowledge to date and of

cutting-edge research, were given. One highlight was Nobel Laureate Paul Crutzen's thought-provoking lecture on the Atmospheric Chemistry of the Anthropocene, in which he discussed the 'Great Acceleration' of human-kind since the Second World War and the profound affect that this massive population, economic and technological growth has had on the earth-system, in particular the chemistry of the atmosphere and global climate. As well as introductory lectures, lectures were also given on subjects as diverse as gas exchange processes, marine biogeochemistry, atmospheric dust and the DMS cycle, among others.

The Summer School also offered students' practical workshops on oceanography, atmospheric science, and modelling and gas exchange processes, to provide them with hands-on experience. These workshops were run by lecturers attending the school. In addition, workshops on written and oral communication provided students with advice on presenting science and constructive criticism on their spoken and written presentation.

During the first week of the summer school, at a series of outdoor early-evening sessions, students presented their own research work through poster sessions. Discussions continued long into the warm evenings, over drinks and snacks. During the second week, some of the lecture time was given over to the students, each making a short presentation on their research. These student talks were of the highest calibre and inspired and excited the more senior members of the audience to see what a new generation of SOLAS scientists are working on.



The students and lecturers at the SOLAS Summer School 2005

"The 2005 SOLAS Summer School was a wonderful and useful experience for me. It provided me with the opportunity to improve my knowledge about the air-sea interactions and biogeochemical cycling of trace gases in the surface ocean and the atmosphere, as well as the recent progress in the SOLAS field of study. What I enjoyed most was the chance to communicate with peer scientists and other doctoral students, to exchange research experiences and results. I believe that what I learned in this Summer School will help me to improve my future research work in China." —Gulling Zhang, Ocean University of China

"The SOLAS Summer School provided me with a valuable experience. I was able to gain a diverse impression of fields relating to SOLAS science. It also allowed me to meet many people working in the same area. In particular, I learned a lot from discussions with lecturers and other friends, who kindly offered a great deal of advice and good ideas. With help from lecturers, we learned what skills are necessary to become eligible and successful scientists. I am currently getting ready for the annual retreat of my PhD study and I have been selected to join an exchange program, which will be hosted by Max Planck Institute for Meteorology, next year. I think the experience gained from attending

the SOLAS summer school may have helped me to get the placement." —Kai Zhang, Institute of Atmospheric Physics, Chinese Academy of Sciences

"I am very grateful that I had the chance to attend this school, not only for the knowledge I gained, but also for the opportunity to meet so many new people from all over the world. I was able learn about their ideas and the technology of SOLAS. After attending the Summer School, I am confident that my project will move forward." —Zongjun Xu, First Institute of Oceanography, State Oceanic Administration, Qingdao

"My major is mechanical engineering, and I had never had the opportunity to attend such lectures during my years of education. I met many lecturers and students from various scientific fields of SOLAS topics, during the two weeks we shared together. I think that people rarely get to experience this at regular academic conferences. It allowed me to look at my studies from another point of view by meeting and having discussions with others. They gave advice and made comments that I had never thought of." —Kenji Tanno, Kyoto University

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Scientific Capacity Building & Enhancement for Sustainable Development in Developing Countries

## Capable Programme Updates

### National Climate Change Public Awareness and Outreach in Sri Lanka (2004-CB09-NMY-Dharmarathna)

Call for  
Proposals  
under the  
CAPaBLE  
Programme

The world is faced with the danger of climate change, a major environmental threat. The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 due to the need for an international consensus on global environmental change issues. The third Assessment Report (TAR) of the IPCC (working groups II and III) describes the impacts and adaptation of climate change, as well as measures that could be taken to mitigate these changes.

Since the effect of climate change has been experienced by humans over a long period of time, consequences of these changes are difficult to convince civil society. The best example of this would be the rising sea level of 0.88 meters by the year 2100, under the highest emission scenario proposed by the IPCC. It is difficult for people to realize this scenario without experiencing it themselves. However, the tsunami that occurred on 26 December 2004, made people more aware of issues related to coastal management, such as flooding.



Participants at the climate public awareness seminar

By realizing the importance of this national threat, the Centre for Climate Change Studies (CCCS), of the Department of Meteorology, submitted a proposal to the Asia Pacific Network for Global Change Research (APN) under its CAPaBLE programme, "National Climate Change Public Awareness and Outreach in Sri Lanka." The project aims to raise awareness on climate change among policy makers, government officers, university lectures, schoolteachers, NGOs and the private sector by conducting seminars throughout several Districts in Sri Lanka. One of the



Resource people at seminar for public awareness

goals of the project is to prepare a video documentary on climate change and its consequences. The documentary will be telecast on four, local channels in Sri Lanka in late December or early January next year. As a follow-up to the documentary, seventeen district-level seminars will be conducted, as well as a two-day seminar in Colombo, to conclude the project.

The first seminar of the series was conducted in the Colombo District at the Department of Meteorology on 25 October 2005. The meeting was attended by 143 participants representing various sectors namely, district level administrators, government officers, schoolteachers and NGOs. The Honorable Minister of Environment and Natural Resources, Mr. A.H.M. Fowzi attended the inaugural session of the seminar.

During the seminar, several presentations were given including:

1. Introduction and objectives of the seminar by Mr. G.H.P. Dharmaratna, Director General, Department of Meteorology.
2. Science of climate change by Dr. B.R.S.B. Basnayake, Meteorologist-In-Charge of the CCCS, Department of Meteorology.
3. Climate change Impacts and Adaptation in the field of Health by Dr. H.D.B. Herath, Senior Medical Officer, Ministry of Healthcare and Nutrition
4. Climate change Impacts and Adaptation in the field of Water Resources by L. Chandrapala, Deputy Director, Department of Meteorology.

5. Climate change and extreme events by Mr. P.M. Jayathilaka Banda, Director, Department of Meteorology.
6. Climate change policy matters including Clean Development Mechanism by Mr. Anura Jayathilake, Director, Global Affairs Division, Ministry of Environment and Natural Resources

Among the audience were experienced government administrators, who by the nature of their education and experience were not knowledgeable about climate change and related issues. Following the seminar, participants took part in discussions, sharing their experiences on district and provincial level administration. Interest and queries from participants were on the Clean Development Mechanism (CDM) and the availability of carbon fixation data relevant to major crops grown in Sri Lanka. Furthermore, there was detailed discussion on the compatibility of CDM with existing policies and practices in Sri Lanka.

In addition, general issues involving climate change such as changes in sea level and health effects were discussed, as well as the need for the adaptation of an appropriate strategy for adaptation/mitigation of the effects of climate change for a developing country such as Sri Lanka.

The second seminar of the series is scheduled to be held in Nuwara Eliya, a beautiful city in the central highlands, on 12 December 2005. The seminar will benefit district level administrators, government officers, schoolteachers and NGOs.

## Regional News

### EAST ASIA

#### 11-15 September. The 15th Asia-Pacific Seminar on Climate Change, the Asia-Pacific Regional Workshop on Article 6 of the UNFCCC. Yokohama, Kanagawa, Japan.

The Ministry of the Environment, Japan has been organizing the Asia-Pacific Seminar on Climate Change since the early 1990s in support of regional efforts to address climate change. The seminar has been steadily growing as a regional forum to promote awareness and exchange experiences on many common issues to Asia-Pacific countries.

The Fifteenth Asia-Pacific Seminar on Climate Change was organized by the Ministry of the Environment, Japan (MOE), the Australian Greenhouse Office (AGO), the New Zealand Climate Change Office, the Ministry for the Environment, United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Environment Programme (UNEP), the Kanagawa Prefecture, the City of Yokohama and the Overseas Environmental Cooperation Center, Japan (OECC)

The meeting was organized back-to-back with the Asia-Pacific Regional Workshop on Article 6 of the United Nations Framework Convention on Climate Change. In addition to its regular activities to discuss climate change issues, the Seminar provided an opportunity for a Regional Workshop, where participants exchanged views and experiences on the issues relating to education, training and public awareness in the field of climate change.

The objective of the Asia-Pacific Seminar is to provide a forum for the countries in the Asia-Pacific region, as well as international organizations working in the region, to share information and build relationships in an informal working environment.

#### 29 September-9 October. PICES 14th Annual Meeting: Mechanisms of Climate and Human Impacts on Ecosystems in Marginal Seas and Shelf Regions. Vladivostok, Russia.

The 14<sup>th</sup> North Pacific Marine Science Organization (PICES)

meeting was held on 29 September-9 October, at the Hyundai Hotel, in Vladivostok, Russia. The meeting was hosted by the Russian Federation and represented by its delegates to PICES, in cooperation with the Federal Agency on Fisheries, and in coordination with the PICES Secretariat. During the meeting, the following sessions and workshops were held: (1) Mechanisms of climate and human impacts on ecosystems in marginal seas and shelf regions, (2) Life history and ecology of euphausiids in coastal and oceanic waters around the Pacific Rim, (3) Factors affecting distribution, foraging ecology, and life histories of top predators in the north-western Pacific Ocean and its marginal seas, (4) The comparative response of differing life history strategists to climate shifts, (5) Modelling climate and fishing impacts on fish recruitment, (6) Modelling climate and fishing impacts on fish recruitment, (7) Current and emerging issues of marine and estuarine aquaculture in the Pacific region: Carrying capacity, ecosystem function, and socio-economics, (8) Ecosystem indicators and models, (9) Ecological effects of offshore oil and gas development and oil spills, (10) Data management and delivery systems to support ecosystem monitoring, (11) Review of selected harmful algae in the PICES region: I. Pseudo-nitzschia & Alexandrium, (12) Introduced species in the North Pacific, (13) Modelling and iron biogeochemistry: How far apart are we?, (14) Filling the gaps in the PICES North Pacific Ecosystem Status Report, (15) Fishery Science Committee (FIS) Paper Session, (16) Physical Oceanography and Climate Committee (POC) Paper Session, (17) Biological Oceanography Committee (BIO) Poster session, (18) Climate Change and Carrying Capacity Scientific Program (CCCC) Poster session, (19) Marine Environment Quality Committee (MEQ) Poster session and (20) HAB.

#### October 2005. Opening of the International Project Office (IPO) of Monsoon Asia Integrated Regional Studies (MAIRS).

The International Project Office (IPO) for the Monsoon Asia Integrated Studies (MAIRS-IPO),

which has been active since the beginning of 2005 under the leadership of Prof. Congbin Fu, has become fully staffed on 1 October this year with the appointment of an Executive Director. The IPO is housed by the Institute for Atmospheric Physics (IAP) at the Chinese Academy of Sciences (CAS) in Beijing. The activities of MAIRS will be guided by a Science Steering Committee, which is currently being formed.

MAIRS's objectives are (1) to better understand how human activities in the Asia Monsoon Region interact with and change atmospheric, terrestrial and marine components of the Asia Monsoon System and beyond; (2) to develop a capacity to forecast consequences of such regional changes and to explore options for adaptations by societies; and (3) to develop the human and institutional capacity to mitigate undesirable impacts of the Asia Monsoon System.

In 2003, members of the Earth System Science Partnership (ESSP) — WCRP, IGBP, IHDP and DIVERSITAS — concluded that it would be effective to carry out Integrated Regional Studies; Monsoon Asia Integrated Regional Study (MAIRS) is one of these. START has been instrumental in organizing the MAIRS-IPO, but it would not have been realized without the generous contributions of the Chinese Academy of Sciences (CAS) and the Ministry of Science and Technology (MOST), China.

Before MAIRS, START brought together scientists in South Asia to form the South Asia Regional Committee for research on regional change (START-SA), and also formed groups in South East Asia (START-SEA) and Temperate East Asia (START-TEA). MAIRS will encourage further collaboration within and between these groups. It is intended to expand collaboration with the ESSP partners, as well as with other researchers who are interested in the objectives of MAIRS.

The first main task of the MAIRS-IPO is to develop a Science Plan. This plan will be presented at the 2<sup>nd</sup> Earth Science Meeting in Beijing, November 2006. The draft outline of the Plan will be discussed at the SSC-meeting in January 2006.

#### 17-19 October. The 9<sup>th</sup> International Symposium on Physical Measurements and Signature in Remote Sensing (ISPMSRS). Beijing, China.

The 9<sup>th</sup> ISPMSRS was sponsored by the Institute of Geographical Sciences and Natural Resources Research, the Chinese Academy of Sciences, the Institute of Remote Sensing Applications, the Chinese 973 Project "Quantitative Remote Sensing of Major Factors for Spatio-temporal Heterogeneity on the Land Surface," undertaken by Beijing Normal University, the National Aeronautics and Space Administration (NASA), the International Society for Photogrammetry and Remote Sensing, the IEEE Geoscience and Remote Sensing Society, and the Scientific Data Center for Resources and Environment. It provided an international forum for advancing remote sensing research with an emphasis on physical modelling, development of advanced inversion methods, and applications. It was held at the International Conference Center, Beijing, China from 17-19 October 2005.

This symposium series was affiliated with the International Society for Photogrammetry and Remote Sensing (ISPRS) Commission VIII/ Working Group on Fundamental Physics and Modelling. The previous eight meetings, beginning in 1981, covered a variety of topics comprehensively. The 9<sup>th</sup> ISPMSRS had the following topics:

1. Missions and sensors
2. Land surface radiation modelling
3. Sensor calibration & product validation
4. Pre-processing techniques (e.g., atmospheric correction)
5. Data fusion and mining methods
6. Data assimilation methods
7. Super-spatial data analysis
8. Hyperspectral data analysis and applications
9. SAR data processing and applications
10. LIDAR remote sensing and applications
11. Inversion of surface radiation components
12. Soil moisture & hydrological cycle
13. Mapping snow/ice and geophysical properties
14. Agricultural mapping and monitoring

15. Carbon cycle and modelling
16. Inversion of canopy biophysical properties
17. Forest mapping and monitoring
18. Land cover/use and change mapping
19. Global environmental change and sustainable development

**16-22 October. The 28<sup>th</sup> General Assembly of the International Council for Science (GA of ICSU). Shanghai and Suzhou, China.**

The 28th ICSU General Assembly and associated meetings were held in Shanghai and Suzhou, China, from 16-22 October. The Scientific program, including the CAST/ICSU Scientific Forum, and visits to scientific institutes were arranged in Shanghai on 17 October. The formal General Assembly was held in Suzhou from 18-22 October.

The General Assembly consisted of both plenary sessions and sessions for National Members and Scientific Union Members; more than 230 scientists from 63 countries and regions participated. Discussions involving the world's development of science and technology within the context of international scientific cooperation, took place. All fourteen members of the Executive Board of the ICSU were present at the meeting.

On behalf of the Chinese government, the Chinese State Councillor, Chen Zhili, welcomed and congratulated the participants during the opening ceremony.

ICSU, headquartered in Paris, is the largest non-governmental organization in world's scientific community, which convenes its general assembly every three years. China hosted the 22<sup>nd</sup> GA of ICSU in Beijing in 1998.

*Compiled from report by APN Liaison Officer Ms. Yang Ying*

## OCEANIA

**16 August. Regional Forum held on Education for Sustainable Development. Suva, Fiji.**

Education and communication are critical components of achieving sustainable development. In recognition of their crucial role, 2005–2017 has been declared a UN

Decade of Education for Sustainable Development, a global movement that aims to empower people of all ages to assume responsibility for creating a sustainable future.

The Secretariat of the Regional Environment Programme (SPREP) and the University of the South Pacific (USP) jointly hosted a one-day forum, "Education for a Sustainable Pacific," on 16 August 2005, in Suva, Fiji, exploring the environment for sustainable development issues in the Decade of Education for Sustainable Development (DESD). The forum was attended by representatives from Pacific ministries and departments of environment throughout the Pacific, who had gathered in Suva, Fiji to attend a SPREP education workshop.

The Education for a Sustainable Pacific forum was the first Pacific forum that brought together a wide range of representatives from a cross-section of organizations to discuss the environmental aspect of education for sustainable development. Supported by UNEP, speakers at the forum included representatives from the Pacific Centre for Environment and Sustainable Development (PACE-SD) with the University of the South Pacific (USP), Live and Learn Environmental Education, SPREP, the Fijian Department of Environment, the PRIDE project, and the Fiji Times.

The Forum was followed by a two-day meeting of SPREP National Contact Points for Education for the Environment and Sustainable Development. The key outcome of this workshop was a draft guiding framework to support SPREP's member development and implement education and communication initiatives in their work. The Framework is currently being finalized and will be available in the near future. One of the key actions of this Framework was to support national curricula reviews. One of the focus areas of Education for Sustainable Development is reorienting curricula to include principles of sustainable development. In the next month, SPREP will be embarking on a review process, to support national curricula reviews, and to promote collaboration and cooperation of various stakeholders in strengthening basic education in the region.

SPREP continued to discuss possible DESD initiatives with PACE-SD with USP and United Nations Educational, Scientific and Cultural Organization (UNESCO). While the Forum on 16 August was an opportunity to begin this initial dialogue, more work has to be undertaken to progress this concept, and subsequent initiatives in the region.

Building the capacity of Pacific Islanders' to sustainably manage the Pacific Islands' environment is a core component of SPREP. SPREP is an intergovernmental organization that works with Pacific Island countries and territories to protect the Pacific environment and support and encourage collaboration and sustainable development. SPREP's membership includes twenty-one Pacific countries and territories, and also includes Australia, France, New Zealand and the United States of America.

For more information contact Ms. Tamara Logan at SPREP on email: [tamaral@sprep.org.ws](mailto:tamaral@sprep.org.ws)

**12-15 September. GEO-4 Meeting Builds on Global and Regional Scenarios on Markets, Policy, Security and Sustainability. Bangkok, Thailand.**

The first Global and Regional Scenarios Workshop of the Fourth Global Environment Outlook (GEO-4) was held from 12–15 September 2005 in Bangkok, Thailand. The key objective of the workshop was to discuss and build on four scenarios from GEO-3. These scenarios are: (1) Markets First, Policy First, security First and Sustainability First — such as to improve the global — regional and regional-regional links, (2) Extend the time horizon from 2032 to 2050, (3) Improve and extend the quantitative aspects and (4) Improve the communicability and use of scenarios for policy analysis and explore specific feedback loops between drivers and between outcomes and drivers within the scenarios for each of the seven GEO-4 sub-regions including the Asia-Pacific. The meeting was attended by Prof. Murari Lal of Pacific Centre for Environment and Sustainable Development (PACE-SD) at the University of the South Pacific (USP).

During the four-day meeting, a specific set of objectives were taken

into account with an overview of current activities. The outcomes of other recent and on going exercises such as the Intergovernmental Panel on Climate Change, Millennium Ecosystem Assessment, Organization for Economic Cooperation and Development's (OECD) second Environment Outlook and the new International Assessment of Agricultural Science and Technology for Development were also reported.

This meeting represented a critical step in the development of the chapter on scenarios for GEO-4 and associated products in terms of identifying the indicators/knowledge gaps and generation of narrative and quantitative aspects of storylines for future scenarios for the regions in terms of finalizing useful concepts and a range of perspectives, which would form the basis of the first order draft.

#### **12-16 September. Adaptation to Climate Change is a Must: AIACC Coastal Project Team Decide in Kenya Meeting.**

A Climate Change Adaptation (CCA) Synthesis workshop was held in Nairobi, Kenya, from 12-16 September 2005, as part of the Assessments of Impacts and Adaptations to Climate Change (AIACC) project number SIS09 on *Integrated Methods and Models for Assessing Coastal Vulnerability and Adaptation to Climate Change in Pacific Island Countries*. The project was implemented in Fiji and the Cook Islands by the Pacific Centre for Environment and Sustainable Development (PACE-SD) at the University of the South Pacific (USP) and the International Global Change Institute with University of Waikato in the Pacific. Mr. Melchior Matakai, Programme Manager of PACE-SD, attended the workshop as a representative from the South Pacific. His contribution to the workshop was based on the work carried out through the AIACC project in the town of Navua, in Fiji.

AIACC is a global initiative developed in collaboration with the United Nations Environment Programme (UNEP) and World Meteorological Organization (WMO), Intergovernmental Panel on Climate Change (IPCC). It is funded by the Global Environment Facility (GEF) to advance scientific understanding of climate change

vulnerabilities and adaptation options in developing countries. AIACC is implemented by the UNEP and executed jointly by global change System for Analysis Research and Training (START) and the Third World Academy of Sciences (TWAS). Dr. Mahendra Kumar, former staff of the USP, is managing the US\$ 14 million global adaptation project on behalf of UNEP.

"The main output from the workshop was a synthesis of the major findings and issues pertinent to climate change adaptation based on CCA papers submitted by various AIACC projects from Africa, Asia, South Pacific (Fiji) and South America," said Mr. Matakai.

The working paper "*Implementing Climate Change Adaptation in the Pacific Islands: Adapting to Climate Variability and Extreme Events in Navua (Fiji)*" argued that climate change, coupled with climate variability and extreme weather events, poses a threat to the livelihood of communities in Navua. Navua is renowned for being one of the most flood prone areas in Fiji. The recent flooding episodes in April 2004 and September 2005 are just two examples of flooding resulting from prolonged and intense rainfall.

Flooding episodes also occur during tropical cyclones. Anecdotal evidence gathered during the SIS09 surveys suggests that fifty to ninety-eight percent of the Navua floodplains had flooded during flooding episodes in the past. A preliminary analysis of the rainfall data in Navua indicated that the return period of extreme daily rainfall events (more than fifty millimeters per day) in the two wettest months (March and April) had reduced from around five years to three years in the recent decade. This implies that the Navua River Channel receives more sediments nowadays than in the past, consequently reducing the depth of the river rendering the river susceptible to bursting its banks during intense or prolonged rainfall episodes.

"A number of factors contribute to the increasing vulnerability of Navua communities to flooding including, the low-lying nature of the area, dysfunctional irrigation channels and floodgates and the increase of sediment input to the Navua River propagated by activities in the

Navua River catchments such as logging, haphazard farming on slopes and aggregate mining," commented Mr. Matakai.

In addition to these factors, the ability of Navua communities to cope with climate risks (rainfall) is strongly associated with the poor socioeconomic conditions prevalent in Navua communities and the limited opportunities to relocate elsewhere. The Navua River needs to be dredged urgently as an adaptation measure. Unlike in the past, where dredging was often carried out at ten year intervals, it would be prudent to reduce the intervals between dredging given the factors mentioned above. To add value to dredging, appropriate actions should be taken to alleviate input of sediments into the river and to repair the dysfunctional irrigation channels and flood gates.

"Apart from these direct measures, given the socioeconomic challenges in most communities in Navua, adaptation to climate risks needs to be approached from a broader development framework and adaptation measures should be products of anticipatory planning led by the national government in consultation with all stakeholders," suggests Mr. Matakai.

As such, a process-based methodology to adaptation embracing "top-down and bottom-up" approaches to planning, evaluation and implementation is the best chance of improving the adaptive capacity of Navua communities to cope with climate risks.

#### **11-28 October. Pacific Conservation Course Enters the Second Phase.**

Pacific Islands Community-based Conservation Course (PICCC) participants met for the last phase of the 2005 component of PICCC. The purpose of this phase of the training is to develop skills prioritized at the end of the first phase, to understand and develop skills on biological monitoring, to learn and develop case studies and to finalize the projects identified. Participants refined and finalized their projects which were identified in phase I of the course.

The course was held from 11-28 October 2005 and was facilitated by the Pacific Centre for Environment

and Sustainable Development (PACE-SD), Institute of Applied Science (IAS) at the University of the South Pacific, the Secretariat of the Pacific Regional Environment Programme (SPREP) and the Foundation for the Peoples of the South Pacific - International (FSPi). It consisted of presentations and field visits within the three-week training.

One of the major components of this phase involved learning about case studies. The participants were required to develop a case study of their own using real-life situations with needs to integrated skills by utilizing individual skills, stakeholder analysis, participatory methods and management plans. These case studies will be applied to new situations such as mangrove areas conversion to fishponds, pollution and water quality management, coral reef protection and tourism development.

Participants from the following countries attended the course: Federated States of Micronesia, Fiji, Kiribati, Palau, Papua New Guinea, Samoa, Solomon Islands, Tuvalu and Vanuatu.

#### **18-19 October. SPREP hosts START-Oceania Regional Committee Meeting.**

The START-Oceania Regional Committee Meeting was held from 18-19 October 2005 in Apia, Samoa. It was hosted by the Secretariat of the Regional Environment Programme (SPREP) in Apia. Professor Nick Harvey, Head of Geographical and Environmental Studies at the University of Adelaide, Australia, as Chair, welcomed the regional committee members. Mr. Vitolio Lui, Deputy SPREP Director, gave the official opening address.

On Day One, the current START-funded activities of the region were reviewed. Professor Kanayathu Koshy, Director of START-Oceania Secretariat, then gave a presentation on the Secretariat's activities. Ms. Archana Narayan, START-Oceania Programme Assistant and APN Liaison Officer for Oceania also gave a presentation. The presentations were followed by a session with SPREP staff on key environmental management in the Pacific. A presentation was given by Dr. Koshy and Dr. Nick Harvey on START and the APN's activities.

Day Two of the meeting was dedicated to the planning of future activities, funding and potential projects for START-Oceania Secretariat. Some of the proposals planned for next year included areas of: waste management, climate and food security, a security project relating to GECHS (Global Environment Change and Human Security), a coastal project with science-policy linkages, a community project, climate change, habitat mapping, Pacific synthesis in IPCC (Inter-Governmental Panel on Climate Change), outreach network, MEA (Multi-Lateral Environment Agreements) capacity building, population pressure, governance of marine systems, AIACC (Assessments of Impacts and Adaptations to Climate Change) related project — Applying Models to other sites (AIACC Extension project) and oceans and carbon trading. The meeting aimed to identify gaps in research and training on global change in the Oceania region.



START-Oceania Regional Committee Meeting, 18 – 19 October 2005, SPREP, Apia, Samoa.

### Pilot Waste-Wise Project to Start at USP

There is a serious need to better manage waste in the Pacific Island communities and the University of the South Pacific (USP) is embarking on demonstrating a way of doing this. Through the Pacific Centre for Environment and Sustainable Development (PACE-SD) and the Institute of Applied Sciences (IAS), the USP is in its initial stages of implementing the Waste Wise Project.

Ms. Stephanie Rambault, a student in environmental engineering and sustainable development from the French University of Technology of Troyes, has begun working with PACE-SD for five months to lead a pilot experiment on waste management at the USP. She will be working with Ms. Patrina Dumar, who is currently dealing with waste

management with IAS.

The project is part of a greater aim which is "Greening the University of the South Pacific". The Green University concept involves incorporating a waste management system that is environmentally sustainable such as reducing, re-using and recycling waste. It also recognizes the significance of capacity building. This will be taken forward through targeted applied research projects, the sensitization of the USP community to solid waste management issues and the piloting of income generating opportunities in waste management. Further action will include the development of a solid waste management policy and its subsequent involvement into a green university policy and the development of specialized training on solid waste management.

The Waste Wise project aims to serve as an example for best environmental practices for municipalities, communities and organizations in the Pacific Island region.

"The USP Waste Wise initiative is important because the poor management of solid waste in Small Islands Developing States has disastrous consequences on landscapes, health, land resources and the preservation of one unique ecosystem. This is why appropriate waste management is one of the major sustainable development challenges for the region," said Professor Kanayathu Koshy, Director of PACE-SD.

The challenges pertaining to solid waste management in the Pacific is often compounded by numerous factors such as remoteness, lack of space, limited financial capacity and inadequate waste treatment infrastructure. Moreover, the growth in population and urbanization, coupled with industrial growth and changing consumption patterns, add further stress on the ability of countries to deal with solid waste. Current solid waste management practices are characterized by open dumps, poor levels of waste separation, and inadequate recycling provisions. Open dumping of waste in coastal areas, rivers and unused land is also prevalent.

Further, solid waste legislations in the Pacific Island Countries are often

either outdated or inadequate and awareness programmes lack action-oriented and practical approaches to dealing with the problem. There are also limited technological options in small island states to sustainably manage waste domestically due to remoteness and their small size.

Improved coordination and organizational systems to better deal with the waste problem is required at various levels. The Secretariat of Pacific Regional Environment Programme (SPREP), in partnership with its 22 member countries, has developed a regional solid waste management strategy. Through this initiative, member countries have been encouraged to develop national waste management strategies. The USP is also in the process of developing its own waste management strategy and this is currently underway through the Waste Wise project.

Initiated by Dr. Fabrice Mathieux, an additional researcher at the PACE-SD under the directorship of Professor Koshy, the project took shape around three main objectives: (1) to evaluate the type and amount of solid waste produced by the USP, by setting-up a rigorous and reproducible methodology, (2) to pilot concrete initiatives that involve reducing, re-using and recycling waste and (3) to set-up a sustainable waste management policy and system.

Sustainable waste management cannot be achieved without the participation of the university community. Therefore, the success of this project will depend largely on cooperation of the students and staff of the university.

For more information on the USP Waste Wise Project please contact Professor Kanayathu Koshy on email: [koshy\\_k@usp.ac.fj](mailto:koshy_k@usp.ac.fj) or Ms. Stephanie Rambault on email: [rambaults@utt.fr](mailto:rambaults@utt.fr) or Ms. Patrina Dumar on email: [dumar\\_p@usp.ac.fj](mailto:dumar_p@usp.ac.fj)

### Community Relocation Study to Start in the Pacific Islands

Community relocation is an option for adaptation to the effects of climate change variability in Pacific Island Countries. The study on community relocation contends that very little primary research has been conducted on how adaptation measures of climate change will be

implemented. While there are activities to promote the adoption of adaptation measures in the region, and calls for community-based and bottom-up approaches, there has been very little research on implementation and what effects they may have on the communities concerned, according to Dr. John Campbell, associate Professor, Department of Geography at the University of Waikato, New Zealand and member of the START-Oceania Regional Committee. Dr Campbell is and a member of START-Oceania Regional Committee. He is leading the project 'Community relocation as an option for adaptation to the effects of climate change variability in Pacific Island Countries'.

As certainty about climate change increases, and it becomes more evident that action to significantly reduce greenhouse gas emissions will take some time, greater attention has been focused on the issue of adaptation. This is the case for many Pacific Island Countries, which are widely portrayed as being among the most likely to be adversely affected.

"The relocation of communities from areas that are likely to be rendered uninhabitable by climate change or variability is one adaptive option that has gained widespread coverage in the media and consideration by policy makers in the region. There has, however, been little research into the issues that are likely to arise in the process, or as the result of resettlement," said the project leader, Dr. John Campbell.

This project aims to address an adaptive option from the communities' perspective. The project is funded by Asia Pacific Network for Global Change Research (APN) and the study will begin in late 2005 in the Fijian communities.

The project includes three main components. The first component is

a detailed survey of existing literature and other documentary sources for information on community relocation, particularly in Pacific Island Countries (PICs). Community relocation is not new to the region: there have been a number of scenarios under which communities have been relocated including following natural disasters and to make way for nuclear testing, mining and public works. Some relocation has been to nearby locations and others have been involved in long distances and international migration. Each type has its own variety of issues that need to be addressed. These will be identified in this part of the research.

The second component of the study is a participatory research activity in a village in Fiji that is being relocated. Using techniques from participatory rural appraisal, the project will seek to identify problems and or benefits that have been experienced by the community and any lessons learnt that might be applied in other situations. Part of this activity will include a small training workshop in techniques of participatory research, adapted to be used in the context of climate change.

The third component will be a regional workshop in which the findings of the literature and field research will be synthesized into a preliminary report and distributed to participants. The workshop will be used to gather information about relocated communities in other parts of the Pacific region and their experiences. The workshop will also consider the preparation of a more comprehensive and substantive research project on community based adaptation in PICs.

START-Oceania Latest Publication of *Oceanic Waves Newsletter* can be accessed on the website: [www.usp.ac.fj/start](http://www.usp.ac.fj/start)

Compiled from report by APN Liaison Officer Ms. Archana Narayan

## SOUTH ASIA

### 28-29 September. Capacity Building Workshop on Clean Development Mechanism (CDM) for Indian Project Developers. Ahmedabad, India.

A training workshop entitled "Capacity Building Workshop on Clean Development Mechanism (CDM) for Indian Project Developers" was organized in Ahmedabad, India from the 28-29 September, under a program sponsored by the Institute for Global Environmental Strategies (IGES), Japan. About fifty-five participants, representing various stakeholders, such as project developers, financial institutions/banks, government/private institutions, prospective CER buyers/brokers, consulting organizations and NGOs, attended the workshop. Leading experts on CDM issues and Certified Emission Reduction (CER) buyers attended the workshop as resource persons. The program was designed to involve all participants in order to enrich the deliberation and provide an opportunity to widen the network of CDM practitioners.

### 20 October. APN Seed Grant Development Meeting (APN 2005-19-NSG-N. Wikramanayake). Colombo, Sri Lanka.

The LOICZ regional node for South Asia, located at the National Science Foundation, Sri Lanka, organized a regional meeting in Colombo on 20 October, to formulate a focused proposal on "Science-Policy Interaction in Coastal Zone Management." (APN 2005-19-NSG-N. Wikramanayake). The meeting was funded using the seed grant provided by the APN to further develop the proposal. During the meeting representatives, from Bangladesh, India, Pakistan and Sri Lanka, discussed topics associated with a number of components to be included in the proposed proposal. These topics were linked to the

regional implementation strategies for LOICZ and their potential to be linked with existing programs and institutions. This meeting was held back-to-back with the "South and South-East Asia Basins Workshop."

### 29 October. General Assembly of Climate Action Network South Asia (CANSA). Dhaka, Bangladesh.

The Bangladesh Centre for Advanced Studies (BCAS) organized the General Assembly of Climate Action Network South Asia (CANSA) on 29 October 2005 in Dhaka, Bangladesh. Twenty-five participants from six South Asian countries (Bangladesh, India, Pakistan, Nepal, Bhutan and Sri Lanka) participated in this assembly. Issues discussed during this assembly included: equity and fairness in climate change discourses, mitigation and community adaptation and capacity building. Future initiatives and strategies of CANSA in the context of COP 11 and MOP-1 were also discussed by participants during the assembly.

### 9-11 November. Synthesis Workshop and Stakeholder Meeting. Hyderabad, India.

A "Synthesis Workshop and Stakeholder Meeting" was organized in Hyderabad, India from 9-11 November 2005 on the occasion of the completion of an APN sponsored project entitled "Applying Climate Information to Enhance the Resilience of Farming Systems Exposed to Climate Risk in South and Southeast Asia," commonly known as "CLIMAG South Asia Project." The two major objectives of this meeting were to develop pathways by which work could be progressed further and identify future opportunities for collaborations. During the workshop, project outcomes were showcased to participants and discussions were held on the lessons learned.



**17-19 November. National Symposium on Agro-physical Approaches in Disaster Mitigation, Resource Management and Environmental Protection. New Delhi, India.**

A "National Symposium on Agro-physical Approaches in Disaster Mitigation, Resource Management and Environmental Protection" was organized at the Indian Agriculture Research Institute, in New Delhi, from the 17-19 November. More than 50 national researchers, from different disciplines, attended the symposium and discussed agro-physical approaches. These approaches were thought to be useful for mitigation of a range of disasters, as well as for environmental protection.

*Compiled from report by APN Liaison Officer Dr. C. Sharma*

#### SOUTHEAST ASIA

**12-14 September. LOICZ Training Workshop on Science Communication for Southeast Asia and South Asia. Bangkok, Thailand.**

During the training workshop, participants were introduced to the principles of effective science communication. They used the hands-on sessions to create their own science communication products. In addition, they were trained in Adobe Illustrator and other related software, to design and layout scientific presentations using graphical elements and key

concepts in various communication products such as posters, research-based websites, and newsletters. Additional information about the training materials can be found at <http://www.ian.umces.edu>.

The workshop was attended by 34 participants from 11 countries in South and Southeast Asia. Professor Bill Dennison, Drs. Jane Thomas, Tim Carruthers and Ben Longstaff from University of Maryland Centre for Environmental Studies, USA, were the main instructors at the workshop, in addition to the local resources persons, Drs. Pitiwong Tantichidok and Thon Thamrongnawasawat from Walailak and Kasetsart Universities, respectively. Dr. Martin Le Tissier, Deputy Director of LOICZ IPO, also attended the Workshop.

**13-16 November. The Second Regional Scientific Conference on Reversing Environmental Degradation Trends in the South China Sea and the Gulf of Thailand. Bangkok, Thailand.**

Over 100 scientists, government policy-makers, community leaders, NGO's, international organizations, and other stakeholders, on marine environmental issues in countries bordering the South China Sea, attended this scientific conference. The conference was funded by GEF and organized by UNEP. The workshop consisted of presentations by project scientists and invited experts on recent development on research and demonstration activities for sustainable management of marine

resources, namely, coral reef, seagrass, mangrove, wetlands, land-based pollution and fisheries in the South China Sea. Economic evaluation of resources and legal issues, which could lead to some forms of regional cooperation and commitment in the long-term, were also discussed during the conference.

**15-28 November. Advanced Training Workshop on Southeast Asia Regional Carbon and Water Issues. Chung-Li and Kaohsiung, Taiwan.**

The training workshop was supported by the National Science Council and organized by the Southeast Asia Regional Committee for START (SARCS). Thirty-one trainees from 12 Asian countries attended the Workshop. Eighteen international speakers were invited from Australia, PR China, Germany, Japan, RO Korea, Thailand and the USA. The main objective of the workshop was to provide advanced training for regional scientists on carbon measurement, water cycles, monitoring and modelling techniques, as well as to develop ESSP related (GCP and GWSP) research collaboration with in SARCS region. Topics of the Workshop included carbon embedded in natural waters, remote sensing and ocean productivity monitoring, biogeochemical modelling of the South China Sea and submarine groundwater discharge, update of LOICZ and SEA regional carbon studies, and carbon-climate-human interaction.

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*Projects  
Funded by  
APN in  
2005/2006  
From the  
Annual  
Call for  
Regional  
Proposals  
Process*

## APN Funded Projects

**APN 2005-01-CMY:** Institutional Capacity in Natural Disaster Risk Reduction: A Comparative Analysis of Institutions, National Policies, and Cooperative Responses to Floods in Asia  
PROJECT LEADER: E. Nikitina, Russian Academy of Sciences, RUSSIAN FEDERATION  
Email: enikitina@mtu-net.ru

**APN 2005-02-CMY:** Role of Institutions in Global Environmental Change  
PROJECT LEADER: S. Sonak, TERI, INDIA  
Email: ssonak@teri.res.in

**APN 2005-03-CMY:** Synergy between Ecosystem Change and Biodiversity Studies in the Western Pacific and Asia: Establishing Case Studies for Carbon Management and Biodiversity Conservation  
PROJECT LEADER: K. Kitayama, Kyoto University, JAPAN  
Email: kitayama@ecology.kyoto-u.ac.jp

**APN 2005-04-CMY:** Integrated Regional Studies of Global Change in Monsoon Asia: Phase I: APN/SCOPE/START Rapid Assessment Project of Global Change in Monsoon Asia  
PROJECT LEADER: A. Snidvongs, SEA START RC, THAILAND  
Email: anond@start.or.th

**APN 2005-05-CMY:** Climate Variability and Human Activities in Relation to Northeast Asia and their Land-Ocean Interactions and their Implications for Coastal Zone Management  
PROJECT LEADER: A.V. Adrianov, Institute of Marine Biology, RUSSIAN FEDERATION  
Email: avadrianov@imb.dvo.ru

**APN 2005-06-NSY:** PAGES SECOND OPEN SCIENCE MEETING  
PROJECT LEADER: J. Brigham-Grette, University of Massachusetts, USA  
Email: juliebg@geo.umass.edu

**APN 2005-07-NMY:** Standardisation and Systematisation of Carbon-budget Observation in Asian Terrestrial Ecosystems Based on AsiaFlux Framework  
PROJECT LEADER: S. Yamamoto, National Institute of Advanced Industrial Science and Technology, JAPAN  
Email: yamamoto.emtech@aist.go.jp

**APN 2005-08-NSY:** The Surface Ocean — Lower Atmosphere Study (SOLAS) International Summer School 2005: Attendance of young scientists from the APN region.  
PROJECT LEADER: G. Shi, Chinese Academy of Sciences, CHINA  
Email: shigy@mail.iap.ac.cn

**APN 2005-09-NSY:** The 2005 Open Meeting of the Human Dimensions of Global Environmental Change Research

Community  
PROJECT LEADER: L. Srivastava, The Energy and Resources Institute, INDIA  
Email: leena@teri.res.in

**APN 2005-10-NSY:** Development and Application of Climate Extreme Indices and Indicators for monitoring Trends in Climate Extremes and their Socio-economic Impacts in South Asian Countries.  
PROJECT LEADER: M. M. Sheikh, Global Change Impact Studies Centre (GCISC), PAKISTAN  
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**APN 2005-11-NSY:** DIVERSITAS First Open Science Conference 2005: Travel fund for scientists from developing countries in the Asia Pacific region  
PROJECT LEADER: K. S. Bawa, Ashoka Trust for Research in Ecology and the Environment, INDIA  
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**APN 2005-12-NSY:** Vulnerabilities of the carbon-climate system: Carbon pools in Wetlands/Peatlands as positive feedbacks to global warming  
PROJECT LEADER: F. Parish, Global Environment Centre, MALAYSIA  
Email: fparish@genet.po.my

**APN 2005-13-NSY:** Supporting regional capacity contributions to LOICZ II development at the IGBP/IHDP LOICZ II Inaugural Open Science Meeting 27-29 June 2005.  
PROJECT LEADER: F. Lansigan, UPLB, Philippines  
Email: fpl@instat.uplb.edu.ph

**APN 2005-14-NSY:** Community relocation as an option for adaptation to the effects of climate change and climate variability in Pacific Island Countries (PICs)  
PROJECT LEADER: J. Campbell, University of Waikato, NEW ZEALAND  
Email: jrc@waikato.ac.nz

**APN 2005-15-NSG:** Climate change impacts on the ecology of the rice pest complex and the resulting threat to food security and farming economy in South Asia.  
PROJECT LEADER: N. Pallewatta, University of Colombo, SRI LANKA  
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**APN 2005-16-NSY:** Asian Neighbours Network: Training Through Research  
PROJECT LEADER: C. G. Skilbeck, University of Technology, Australia  
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**APN 2005-17-NSG:** Optimisation strategies for the management of change in coastal zones and inland waters caused

by Salinity Intrusion.  
PROJECT LEADER: G. Costa, Open Polytechnic of New Zealand, NEW ZEALAND  
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**APN 2005-18-NMY:** The Human Dimensions of Urban Ecosystems: Applying the Human Ecosystems Model (HEM) to Urban Environmental Management in ASEAN  
PROJECT LEADER: P. Marcotullio, United Nations University Institute of Advanced Studies, JAPAN  
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**APN 2005-19-NSG:** Implementation of the LOICZ II Science Plan through Regional and National Workshops, Synthesis and Policy Assessment, Gap-filling Studies, Capacity Building and Networking in the South Asian Region  
PROJECT LEADER: N. Wikramanayake, National Science Foundation, Sri Lanka  
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**APN 2005-20-NMY:** Assessment of the Effects of High Particulate Pollutants on Pulmonary Health Status in Selected Mega-cities of South Asia  
PROJECT LEADER: A. P. Mitra, National Physical Laboratory, INDIA  
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**APN 2005-21-NMY:** Agricultural Land Use Policy in East and South Asia — Rapidly Changing Landscapes and its Impacts on Regional Food Security and its Future Scenario  
PROJECT LEADER: K. S. Rajan, International Institute of Information Technology, INDIA  
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**APN 2005-22-NMY:** Asian Ozone Pollution in Eurasian Perspective  
PROJECT LEADER: H. Akimoto, Japan Agency for Marine-Earth Science and Technology, JAPAN  
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**APN 2005-23-NSY:** The Degraded Ecosystem Restoration in the Arid and Semi-arid Northern China-Mongolia Region  
PROJECT LEADER: H. Wang, Chinese Academy of Science, CHINA  
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**APN 2005-24-NSG:** Impact of Global Change on the Availability of Fodder and Forage and Performance of Livestock in South Asia  
PROJECT LEADER: M. E. Babar, University of Veterinary and Animal Sciences, PAKISTAN  
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## Calendar of Worldwide Global Change Events

Events in **bold** are APN or APN co-sponsored events

### 2005

- 11-15 SEPT. **Asia-Pacific Climate Change Seminar.** Yokohama, Japan.
- 19-23 SEPT. 15<sup>th</sup> International Federation of Agricultural Movements (IFOAM) Congress. Adelaide, Australia. Contact: <http://www.nasaa.com.au/ifoam/>
- 22-24 SEPT. African Network on Global Change Environmental Change Research and Capacity Development  
Web: <<http://wdc.uonbi.ac.ke>>
- 26-28 SEPT. 24<sup>th</sup> Session of the IPCC. Montreal, Canada. Contact: Web: <http://www.ipcc.ch/calendar.htm>
- 29 SEP – 9 OCT. 13th PICES Annual Meeting: Mechanisms of Climate and Human Impacts on Ecosystems in Marginal Seas and Shelf Regions. Vladivostok, Russia. Contact: PICES Secretariat <[secretariat@pices.int](mailto:secretariat@pices.int)> Web: <<http://www.pices.int/>>
- 1-5 OCT. Open Science Conference: Global Change in Mountain Regions. Perth, Scotland. Contact: Web: <<http://www.mountain.conf.uhi.ac.uk/>>
- 9-13 OCT. 2005 Open Meeting of the Human Dimensions of Global Environmental Change Research Community.** Bonn, Germany. Contact: Liz Mullin <[mullin.ihdp@uni-bonn.de](mailto:mullin.ihdp@uni-bonn.de)> Web: <<http://www.ihdp.org>>
- 17-19 OCT. 9th International Symposium on Physical Measurements and Signatures in Remote Sensing (ISPMRS). Beijing, China.
- Contact: Dr. Shunlin Liang <[sliang@geog.umd.edu](mailto:sliang@geog.umd.edu)> Web: <<http://www.ispmrs2005.org/>>
- 25-28 OCT. 2005 IGFA Meeting. Alexandria, Virginia. Web: [http://www.joss.ucar.edu/joss\\_psg/meetings/igfa/](http://www.joss.ucar.edu/joss_psg/meetings/igfa/)
- 9-12 NOV. 1<sup>st</sup> DIVERSITAS International Conference on Biodiversity. Integrating biodiversity science for human well-being.** Oaxaca, Mexico. Contact: DIVERSITAS Secretariat <[secretariat@diversitas-international.org](mailto:secretariat@diversitas-international.org)> Web: <<http://www.diversitas-osc1.org/>>
- 13-17 NOV. Greenhouse 2005: Action on Climate Control. Melbourne, Australia. Contact: <[info@greenhouse2005.com](mailto:info@greenhouse2005.com)>
- 28 NOV – 9 DEC. COP 11 and COP/MOP 1.** Montreal, Canada. Contact: Web: <[http://unfccc.int/meetings/cop\\_11/items/3394.php](http://unfccc.int/meetings/cop_11/items/3394.php)>
- Meeting of CCOP DeISEA Project, University Brunei Darussalam, Brunei  
Web: <[http://unit.aist.go.jp/igg/rg/cug-rg/ADP/ADP\\_E/a\\_what's%20new\\_en.html](http://unit.aist.go.jp/igg/rg/cug-rg/ADP/ADP_E/a_what's%20new_en.html)>
- 21-26 JAN. 1<sup>st</sup> iLEAPS Science Conference. Boulder, USA. Contact: Michael Boy <[boy@ucar.edu](mailto:boy@ucar.edu)> Web: <<http://www.atm.helsinki.fi/ILEAPS/boulder/>>
- 20-24 FEB. Workshop on "Post-Disaster Assessment and Monitoring of Coastal Ecosystems and Biological and Cultural Diversity in the Indian and Asian Waters."** Phuket, Thailand  
Further information will be provided at a later date.
- 6-9 MAR. Prototype Training Workshop for Educators on the Effects of Climate Change on Seasonality and Environmental Hazards, Bangkok, Thailand  
Contact: D. Jan Stewart <[jan@ucar.edu](mailto:jan@ucar.edu)> Web: <<http://www.ccb.ucar.edu/apn/>>
- 7-9 MAR. International Symposium: Towards Sustainable Livelihoods and Ecosystems in Mountainous Regions, Chiang Mai, Thailand. Contact: <[uplands@loxinfo.co.th](mailto:uplands@loxinfo.co.th)> Web: <<http://www.TheUplandsProgram.net.ms>>
- 22-27 MAR. 4th World Water Forum. Mexico City, Mexico. Contact: World Water Council <[wwc@worldwatercouncil.org](mailto:wwc@worldwatercouncil.org)> Web: <[http://www.worldwatercouncil.org/announcemt\\_stockholm\\_2004.shtml](http://www.worldwatercouncil.org/announcemt_stockholm_2004.shtml)>
- 9-12 MAY. EMECS 7. Caen, France. Theme: Sustainable Co-development of Enclosed Coastal Seas: Our Shared Responsibility. Contact: [http://www.emecs.or.jp/emecs7/1stC/EME7\\_1c.htm](http://www.emecs.or.jp/emecs7/1stC/EME7_1c.htm)
- 10 MAY. Asia-Pacific Session. Caen, France. Theme: Quality Status of the Asia-Pacific Coast**  
Contact: [http://www.emecs.or.jp/emecs7/1stC/EME7\\_1c.htm](http://www.emecs.or.jp/emecs7/1stC/EME7_1c.htm)  
Email: [info@apn-gcr.org](mailto:info@apn-gcr.org)
- 11-16 June. The Twelfth Pacific Congress on Marine Science & Technology PACON 2006: Marine Science and Technology in Asia. Yangon, Myanmar  
Contact: Web: <<http://www.hawaii.edu/pacon/>>
- 13-26 OCT. Fifth International Human Dimensions Workshop—Institutional Dimensions of Global Environmental Change: Water, Trade, and the Environment, Chiang Mai, Thailand. Contact: Web: <<http://www.ihdp.org>>
- 16-18 OCT. 3<sup>rd</sup> APHW Conference on Wise Water Resource Management Towards Sustainable Growth and Poverty Reduction, Bangkok, Thailand
- 7-8 NOV. 2nd International Young Scientists' Global Change Conference Beijing, China
- 9-12 NOV. The Earth System Science Partnership (ESSP) Global Environmental Change Open Science Conference. Beijing, China  
Contact: Martin Rice [mrice@essp.org](mailto:mrice@essp.org), Web: <http://www.essp.org/ESSP2006>

### 2006

13-18 JAN. An International Conference on DELTAS (Borneo venue): Depositional Systems and Stratigraphic Development, University Brunei Darussalam, Brunei  
Web: <[http://unit.aist.go.jp/igg/rg/cug-rg/ADP/ADP\\_E/a\\_what's%20new\\_en.html](http://unit.aist.go.jp/igg/rg/cug-rg/ADP/ADP_E/a_what's%20new_en.html)>

13-18 JAN. 3<sup>rd</sup> Annual Meeting of IGCP-475 'Deltas in the Monsoon Asia-Pacific Region (DeltaMAP)', and 2<sup>nd</sup>



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